

North Korea's Fast Track Missile Development: How Far It's Come and Why It Has the U.S. on Edge

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*Since **President Trump** took office, North Korea has conducted a flurry of missile tests, triggering a wave of condemnation by U.S. media and political figures. The reaction contains more than an element of fear-mongering, and it is sometimes implied that once North Korea has an intercontinental ballistic missile (ICBM), it is liable to launch an unprovoked attack on the U.S. mainland.*

What tends to be lacking in such reports is any sense of sober reflection, and much confusion is sown concerning the actual state of North Korea's program. This article takes a closer look at North Korea's recent missile launches and argues that they pose a threat—not to the safety of the U.S. population, as the corporate media claim, but to the United States' strategic calculus in the region.

Pukguksong-2

First tested on February 11, the Pukguksong-2 is a medium-range ballistic missile based on the design of the submarine-launched Pukguksong -1. The main advantage the Pukguksong-2 has over North Korea's other land-based ballistic missiles is that it relies on solid fuel. For that reason, the Pukguksong-2 is far more mobile and survivable than North Korea's other medium-range missiles that outperform it. The other missiles are liquid-fueled and therefore hampered by the need to be accompanied by tanker trucks while on the move. Their necessity of a lengthy fueling process before launch makes them [vulnerable to attack](#).



Pukguksong-2 / KN-15 on parade, 2017 (Source: [LionFlyer](#) / [Wikimedia Commons](#))

Flying on a nearly vertical trajectory, the Pukguksong-2 travelled 500 kilometers and soared to an apogee of 550 kilometers. That translates into a range of 1,200 kilometers, were the missile to be fired at a [regular trajectory using the same payload](#).

One of the reasons for the unusually steep trajectory of the test was so that technicians would be within technical monitoring range to gather [data on performance](#). The unusual flight path may have also been undertaken, as North Korea indicates, to avoid the political sensitivities of overflying Japan.

The missile was again tested on May 21 and followed a trajectory similar to the first. Despite

North Korea's claim that the missile should go into mass production, more testing is needed to solidify reliability and accuracy. It does not appear that the reentry vehicle was tested on this occasion, as it lacked the fins or thrusters necessary for terminal guidance capability. According to missile expert [John Schilling](#), it "will likely take at least five years" for the Pukguksong-2 to become "the mainstay of North Korea's strategic missile force, and even then, only in a first-generation version with a non-maneuvering warhead."

The differing performance of the two tests indicates that there are [unmet challenges in the engine manufacturing process](#) so that it can produce consistent results.

Hwasong-12

After three failed launches in April of this year, the intermediate-range Hwasong-12 finally achieved success on May 14. Unlike the Pukguksong-2, this missile is liquid fueled. By all accounts, the performance of the [Hwasong-12 demonstrated](#) a significant technological advance over any of North Korea's other missiles. In the last test, the missile flew at a steep 85-degree angle and achieved a height of 2,111 kilometers. It is calculated that a normal trajectory would give the missile a range of 4,500 kilometers, making it capable of striking the U.S. strategic bomber force in Guam.



Hwasong-12 intermediate range ballistic missile (Source: [Defence Blog](#))

More importantly, this marked North Korea's first successful test of a [reentry vehicle](#). A nuclear warhead must be able to withstand the enormous heat generated from reentering the earth's atmosphere for it to reach its target. Without that capability, North Korea would not have an effective nuclear deterrent. South Korean monitoring equipment picked up data communications between the descending warhead and North Korean ground control, confirming the success of the test.

Anti-Ship Missiles

On May 29, North Korea tested an [upgraded version of the Hwasong-7](#). Among the improvements were fins to improve stability during the boost phase, an engine in the middle section for speed control, and terminal guidance technology to provide greater accuracy. The missile is said to have a [range of 1,000 kilometers](#) and is intended to strike targets at sea.

Little more than a week later, North Korea launched several anti-ship cruise missiles, which demonstrated excellent maneuverability and precision. According to [North Korean media](#), the missiles "accurately detected and hit the floating targets on the East Sea of Korea after making circular flights." The [flight distance was estimated at 200 kilometers](#), and like North Korea's other missiles tested this year, the cruise missiles are newly designed.

The cruise missiles were fired from [tracked transport vehicles](#) that are capable of travelling across rough terrain, thus allowing them to go where they would be harder to spot and destroy.

The ICBM in North Korea's Future

Western media, long on speculation and short on information, would have us believe that North Korea is on the verge of testing an ICBM any day now. There are technological challenges involved in developing an ICBM that will be much harder for North Korea to overcome than was the case with the Hwasong-12.

The [longer the range](#) of a ballistic missile, the higher the amount of total heat a reentry vehicle must be able to withstand. The rate of heat associated with range – and therefore speed – increases so rapidly that a successful test of an intermediate ballistic missile’s reentry vehicle says nothing about how it would fare in an ICBM. A reentry vehicle launched by an ICBM must absorb far more punishment than is the case with shorter-range missiles. It took the United States several years to master the challenge of designing a survivable ICBM reentry vehicle.

A nuclear warhead must be miniaturized to reduce the weight enough for it to be deliverable in a missile. As military technology specialists [Markus Schiller and Theodore Postol point out](#),

“It is unlikely that North Korea now has a nuclear weapon that weighs as little as 1000 kg. It is also unlikely that such a first-generation nuclear weapon would be capable of surviving the unavoidable 50 G deceleration during warhead reentry from a range of nearly 10,000 kilometers.”

It is thought that the Hwasong-12 could provide the basis for developing an ICBM. However, the missile would need to be [redesigned to add another stage](#) to do so. Recently, North Korea ground tested a rocket engine, which U.S. officials speculated could be intended to power the last stage of an ICBM. Based only on [satellite imagery](#), that conclusion is nothing more than supposition. Regardless of the nature of the engine test, a significant amount of work remains to be done to retool an existing missile as an ICBM and to perfect associated technology, such as the guidance system and reentry vehicle.

Moreover, before a missile can be considered operationally ready, it must undergo multiple tests to ensure that it meets performance and reliability standards. The Hwasong-12 was only successful in one of its four tests.

Threats and Provocations

It is an article of faith in the West that each missile test by North Korea is a “threat” or “provocation.” But is it true? Over the last several months, India tested its Agni-2 medium-range and Agni-3 intermediate-range ballistic missiles, as well as an Agni-5 ICBM, producing only yawns of indifference. Pakistan fired an Ababeel medium-range ballistic missile, capable of delivering multiple warheads, while China and Russia both tested ICBMs. The United States, as it was roundly condemning North Korea for its tests, launched Minuteman 3 and Trident missiles. None of these tests by nuclear powers were deemed provocative. Nor was note taken of the hypocrisy of the Trump administration in expressing outrage over North Korea doing what it was doing.

Objectively speaking, there is no difference between North Korea’s missile tests and the others, although it should be pointed out that the U.S. arsenal of nearly 7,000 nuclear warheads dwarfs that of North Korea.

As the [North Korean foreign ministry](#) observed,

“Not a single article or provision in the UN Charter and other international laws stipulates that nuclear test or ballistic rocket launch poses a threat to international peace and security.”

The political and economic might of the United States gave it the means to prod other members of the UN Security Council to agree to its demand to impose sanctions on North Korea. As a result, North Korea is the only nation singled out by UN sanctions that forbid it from testing the same types of missiles as other countries are free to do. There is no legal basis for this double standard, which is primarily a product of U.S. influence.

From the North Korean perspective, the large-scale military exercises that the United States regularly conducts in tandem with South Korea are threatening. These drills rehearse the invasion of North Korea, including decapitation operations to kill North Korean leaders. Recently, [American B-1B bomber planes](#) executed a series of flights over South Korea, practicing the carpet bombing of North Korea. Originally designed to deliver nuclear weapons, the [B-1B](#) underwent conversion to a conventional weapons only role ten years ago. The plane is still a [formidable weapon](#), however, and can carry three times the [payload](#) of a B-52.

In the Western mindset, none of these actions can be construed as being “provocative” or a “threat” to North Korea. But it is easy enough to imagine the hysterical reaction if Russia were to conduct joint military exercises in Cuba, practicing the bombing and invasion of the United States, along with the assassination of U.S. political leaders.

Refusal to Recognize North Korea as a Nuclear State

Trump’s policy of “maximum pressure and engagement” is based on the principle that the United States will not recognize North Korea as a nuclear state. But what does this mean? North Korea, as everyone knows, is a nuclear state.

What the U.S. means is that it won’t recognize North Korea’s *right* to be a nuclear state. Why is this important?

According to the Nuclear Nonproliferation Treaty (NPT), only the five countries that already had nuclear weapons when the treaty went into force in 1970—the United States, United Kingdom, France, Russia, China—are internationally recognized as nuclear weapon states. The treaty requires them to reduce their nuclear arsenal towards eventual elimination and prohibits all other signatories from possessing nuclear weapons.

Never mind that the five nuclear weapon states are far from achieving their commitment to disarmament and that the United States is spending \$1 trillion to modernize its nuclear arsenal. The United States’ primary concern is the second half of the NPT’s stated goal—that no one else besides the five officially-recognized nuclear weapon states should have nuclear weapons. As such, North Korea’s nuclear and missile program, in the U.S.’ view, is an affront to this doctrine and the country should be punished accordingly.

But what about India, Pakistan and Israel—also countries with nuclear weapons that are not parties to the Nuclear Nonproliferation Treaty (NPT), you might ask. Does the United States refuse to recognize them as nuclear states?

Therein lies the greatest hypocrisy behind U.S. condemnation of North Korea’s nuclear and

missile tests. Because the U.S. has no problem with India, Pakistan and Israel possessing nuclear weapons, it has seen no need to make such a pronouncement.

North Korea's Accelerating Missile Development: Threat to U.S. Hegemony

It has not gone unnoticed that the pace of North Korea's missile testing has accelerated in recent months. When the year began, North Korea found itself in a somewhat vulnerable position, given the Trump administration's aggressive rhetoric. North Korea had a nuclear weapons program but no tested reentry vehicle—which meant that it had no means of delivery. The north's conventional arms are sufficient to inflict heavy damage on South Korea. But in a conflict, harm to U.S. forces would be relatively mild, especially if the U.S. launched a first strike to eliminate much of North Korea's military capability. The window of opportunity for attacking North Korea would permanently close once it could demonstrate an effective means of delivering a nuclear weapon and the ability to strike U.S. warplanes stationed in Guam and aircraft carriers off the coast of the Korean Peninsula. Thus for North Korea, the race was on.

The North Koreans have taken note of the experience of Yugoslavia, Iraq, and Libya, and arrived at the conclusion that a small nation relying on conventional arms alone has no chance of deterring attack by the United States. North Korea says its nuclear program “is a legitimate and righteous measure for self-defense to protect the sovereignty and the right to existence” of the nation.

That is a conclusion the U.S. is keen to discourage. For the United States, it is a fundamental principle of its foreign policy that it should be able to attack any nation of its choosing, and that no country ought to have the means of defending itself. And therein lies the source of U.S. concern. The reason why stopping North Korea's nuclear and long-range missile program is a priority for the Trump administration is not because it truly believes North Korea will launch an ICBM at the United States. Rather, it's that if North Korea succeeds in establishing an effective nuclear deterrent, then this could have serious geopolitical implications for U.S. policy, as other targeted nations may follow North Korea's example to ensure their survival.

For this reason, the United States has branded North Korea a pariah state and sponsored harsh UN sanctions. North Korea faces a dichotomy between policy objectives. If it does not denuclearize, then it risks succumbing to the economic strangulation imposed by the United States. But if it abandons its nuclear program, it becomes far more vulnerable to military strikes by a hostile U.S. The lesson of Libya's fate after it abandoned its nuclear weapons program is not forgotten.

The United States declares that it will not engage in talks with North Korea unless it denuclearizes as a precondition while receiving nothing in return. That position shuts down any possibility of diplomacy, and it is hard to visualize any way out of the current impasse as long as Washington clings to that attitude. It is to be hoped that South Korean **President Moon Jae-in** can persuade the Trump administration to adopt a more flexible approach. The time has come for South Korea to take the lead in finding a peaceful resolution of the nuclear dispute.

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