

21/2020

16 March 2020

Sam Ysebaert\*

A Nuclear Button that Works

[Visit Web](#)

[Receive Newsletter](#)

## *A Nuclear Button that Works*

### *Abstract:*

*This paper attempts to shed light on the North Korean nuclear programme. First, the paper takes a brief look at its origins, followed by a strategic analysis of the North's ballistic missiles and how they fit in the larger DPRK armed forces. Then I compare this to other actors in the region, specifically the United States, for an in-depth strategic analysis. This paper concludes that the new North Korean ICBM's have profoundly altered the balance of power in the region as they have established a two-layered deterrence aimed at the United States. Furthermore, given the military and geopolitical restrictions of the DPRK, these newfound capabilities likely won't be surrendered through economic or diplomatic pressure, for as they constitute the core of DPRK defence policy. As this drastically undermines the credibility of the US' commitment to the ROK, future policy should be aimed at strengthening cooperation within the alliance and fortifying US presence in the region.*

### *Keywords:*

*DPRK, United States, defence policy, nuclear deterrence, ballistic missile program.*

### *How to quote:*

YSEBAERT, Sam. *A Nuclear Button that Works*. Opinion Paper. IEEE 21/2020. [web link IEEE](#) and/or [link bie<sup>3</sup>](#) (accessed on the web day/month/year)

**\*NOTE:** The ideas contained in the Opinion Papers shall be responsibility of their authors, without necessarily reflecting the thinking of the IEEE or the Ministry of Defense.

## Introduction

In the period of 2017-2018, the North Korean regime of Kim Jong-Un (김정은) established, for the first time, a nuclear force with intercontinental missile-capabilities that would be able to strike at most cities of the United States of America. The achievement would quickly turn into one of the first challenges of the Donald J. Trump presidency. This importance was confirmed by Kim in his New Years address of 2016/17, in which he declared that the country was well underway to complete its nuclear programme<sup>1</sup>. Since then, in 2020, the relations between the two Koreas and the United States have improved. Both Koreas symbolically participated as one in the Olympic Winter Games of Pyeongchang (평창군), and the summits of Hanoi and Singapore have opened a dialogue between Washington and Pyeongyang (평양).

Despite the current calm of relations on the Korean peninsula, it is crucial to better understand the escalation of 2017-2018. Neither the public opinion nor the leading scientists, analysts and advisors of the global West have really understood that a war—both traditional and nuclear—at the height of the tensions was a definite possibility<sup>2</sup> and that the probability of a conflict is larger than is often perceived. For those reasons, this work will take a first step in investigating US and DPRK military capabilities and political objectives to understand the implications of the ICBM capabilities, as well as what are possible routes and solutions going forward and likely events in the future.

## Historical foundations

The current situation on the Korean peninsula is impossible to understand without first investigating briefly its political and military history. The complete isolation of the DPRK from the rest of the region and the world—with the main exception of China—, particularly after the fall of the USSR, has led to a mentality that can be difficult to understand. One of which is a clear siege-mentality, reinforced by 20<sup>th</sup> century war experiences. Moreover, the division of the peninsula is a situation that neither the DPRK

---

<sup>1</sup> National Committee on North Korea. (2017). Kim Jong Un's 2017 New Year's Address. Retrieved 12/11/2019 from [https://www.ncnk.org/resources/publications/kju\\_2017\\_new\\_years\\_address.pdf/file\\_view](https://www.ncnk.org/resources/publications/kju_2017_new_years_address.pdf/file_view)

<sup>2</sup> JACKSON, V. (2018). *On the Brink: Trump, Kim, and the Threat of Nuclear War*. Cambridge: Cambridge University Press.

nor the ROK consider a long-term viable solution<sup>3</sup>. Due to its location of geostrategic pivot<sup>4</sup>, foreign actors have consistently shown deep interest in the region. Thus, the Korean War marked one of the first applications of the Truman doctrine and led to the Mutual Defense Treaty Between the United States and the Republic of Korea (대한민국과 미합중국간의 상호방위조약), which underpins the present alliance and military presence between the two states.

The first tentative steps the DPRK undertook towards a nuclear programme took place in the early 1950's, followed by a moderate interest in the following decades and a practical completion of the civilian programme by the 1980's<sup>5</sup>. While the country initially signed the NPT in 1985<sup>6</sup>, its attitude started shifting in the early 1990's, following the dissolution of —and protection by— the Soviet Union. Starting in 1992, control by the IAEA was opposed and the NPT violated, which resulted in the eventual withdrawal from the agreement in 1993<sup>7</sup>. In the following years, negotiations between Pyongyang and other parties —mainly the US— were set and culminated in the 2004 Six Party Talks. The agreements reached were, however, largely unsuccessful in containing nuclear proliferation<sup>8,9</sup>. It is in this context that in 2006 Pyongyang detonated its first atomic bomb, followed by more nuclear tests in 2013, two in 2016 and one in 2017, each of which more powerful than the previous ones<sup>10</sup>.

---

<sup>3</sup> FOSTER-CARTER, A. (2011). Lee Myung Bak's Nordpolitik: A U-turn in the Pipeline? *38th North*. Retrieved from <https://www.38north.org/2011/09/afostercarter091111/>

<sup>4</sup> BRZEZINSKI, Z. (1998). *Grand Chessboard: American Primacy and Its Geostrategic Imperatives*. Basic Books

<sup>5</sup> Nuclear Threat Initiative. (2018b). North Korea - Nuclear. Retrieved 12/11/2019 from <https://www.nti.org/learn/countries/north-korea/nuclear/>

<sup>6</sup> Arms Control Association. (2019). Chronology of U.S.-North Korean Nuclear and Missile Diplomacy. Retrieved 12/11/2019 from <https://www.armscontrol.org/factsheets/dprkchron>

<sup>7</sup> MANSOUROV, A. Y. (1995). The Origins, Evolution, and Current Politics of the North Korean Nuclear Program. *The Nonproliferation Review*, 2(3), 25-38.

<sup>8</sup> PANDA, A. (2018). Exclusive: Revealing Kangson, North Korea's First Covert Uranium Enrichment Site. *The Diplomat*. Retrieved 12/11/2019 from <https://thediplomat.com/2018/07/exclusive-revealing-kangson-north-koreas-first-covert-uranium-enrichment-site/>

<sup>9</sup> FIDLER, S., & LUCE, E. (2001). U.S. Fears North Korea Could Gain Nuclear Capability through Pakistan. *Financial Times*.

<sup>10</sup> LEE, M. Y. H. (2017). North Korea nuclear test may have been twice as strong as first thought. *Washington Post*.

## North Korea

When studying the military policy and proliferation of the DPRK, it is essential to distinguish between the nuclear aspect and the technicalities that accompany it —such as delivery systems—. In the North Korean case, the first atomic bomb was detonated in 2006 —albeit with probable technical issues<sup>11</sup>— but the country only gained the capacity to hit the continental United States in 2017.

### ***Ballistic capabilities***

The North Korean missile programme has been in development for years but, until now, has not been able to truly change the strategic equilibrium on a large scale —due to its already sizeable conventional arsenal—. Initially Pyongyang had as objective to obtain missile capabilities of short and intermediate range, a task it has largely completed, and the regime has created a highly accurate arsenal<sup>12,13</sup>. The ballistic programme did not show the same expediency with regards to *intercontinental* capacities, which were only obtained in 2017 with the Hwasong-14 (화성 14호) and the Hwasong-15 (화성 15호). The latter is likely to have a range of 13,000 km, with which it could strike even the East Coast of the United States<sup>14</sup>.

At the same time, the DPRK has been increasing substantially the number of mobile launch systems and modifying them for the new Hwasong-missiles<sup>15</sup>. However, they have not yet been developed to the same standards as those of other nuclear powers, thus when used in conflict, their range would drastically be reduced. Currently the

---

<sup>11</sup> BURNS, R., & GEARAN, A. (2006). US: Test Points to N. Korea Nuke Blast. The Associated Press Retrieved 12/11/2019 from <http://www.washingtonpost.com/wp-dyn/content/article/2006/10/13/AR2006101300576.html>

<sup>12</sup> HECKER, S. S. (2010). Lessons learned from the North Korean nuclear crises. *Daedalus*, 139(1), 44-56.

<sup>13</sup> Nuclear Threat Initiative. (2019). The CNS North Korea Missile Test Database. Retrieved 10/11/2019 from <https://www.nti.org/analysis/articles/understanding-north-koreas-missile-tests/>

<sup>14</sup> Stockholm International Peace Research Institute. (2018). World nuclear forces. Sipri Yearbook 2018: Armaments, Disarmament and International Security. Retrieved 14/11/2019 from <https://www.sipri.org/sites/default/files/SIPRIYB18c06.pdf>

<sup>15</sup> BERMUDEZ, J. (2018). “Key Vulnerability” in North Korea’s ICBM Force? What We Can and Can’t Learn from a North Korean Military Parade. *38 North* Retrieved 14/11/2019 from <https://www.38north.org/2018/02/jbermudez020918/>

DPRK likely possesses in between 10 to 20 nuclear due to the secretive nature of the regime, however, there exists a distinct possibility that the real number is higher.

2019 saw a steep increase in tests with ballistic missiles, albeit short to intermediate range. Of interest, though, is the new Pukguksong-3 (북극성3형), tested on the 3rd of October, which constitutes the first ballistic missile fired from onboard a North Korean submarine. Perfected, this would allow the regime to bypass its containment by US forces and allies and dissuade even further a potential pre-emptive or preventive strike, as locating the vessel would be all but impossible. This new submarine, moreover, fits perfectly within the strategy of diversification that has been implemented since Kim Jong-Un has come to power.

### ***Conventional capacities***

Despite the ballistic and nuclear capacities already discussed to some detail, it is also necessary to, briefly, investigate the conventional capabilities at the disposal of the DPRK. The country has an army that totals 1.2 million active military personnel, 800,000 reservists and another 5,7 million paramilitary forces, out of a population of 25 million<sup>16</sup>. At the same time, the forces of the Korean People's Army (KPA) are overwhelmingly aimed at the southern border of the country. 70% of its land forces, 40% of its planes and 60% of its navy are deployed south of the line between Pyongyang and Wonsan (원산). Therefore, Pyongyang can mount a surprise offensive with only very little preparation and, thus, time for the US and ROK to mobilize<sup>17</sup>.

Specific attention needs to go to the artillery positioned in the previously mentioned area. Particularly those batteries along the Kaesong (개성) Heights have within their range the South Korean Capital of Seoul (서울), the entire Demilitarized Zone (DMZ) and several US bases, threatening some 20,000,000 citizens in the region<sup>18</sup>. Aware of the

---

<sup>16</sup> BERMUDEZ, J., LEWIS, J., YONG-WEON, Y., PINKSTON, D., FITZPATRICK, M., Michael ELLEMAN, WALDWYN, T. (2018). *The conventional military balance on the Korean Peninsula*. Retrieved 13/11/2019 from <https://www.iiss.org/blogs/military-balance/2018/06/military-balance-korean-peninsula>

<sup>17</sup> Department of Defence. (2018a). *Military and Security Developments Involving the Democratic People's Republic of Korea 2017*. Retrieved 13/11/2019 from <https://fas.org/irp/world/dprk/dod-2017.pdf>

<sup>18</sup> MAZARR, M. J., GENTILE, G., MADDEN, D., PETTYJOHN, S. L., & CRANE, Y. K. (2018). *The Korean Peninsula: Three Dangerous Scenarios*. Retrieved 13/11/2019 from

strategic advantage, the North has created a network of highly fortified, camouflaged bunkers to protect the artillery batteries from ROK or US operations. These complicate any operation—or even mere intelligence gathering—and thus undermine the basis of any military action.

However, despite the impressive size of the KPA and strategic advantages, the armed forces have many systemic and technical problems. Firstly, most of the military equipment is outdated. Pyongyang has not bought new combat aircraft in decades, relies on antiquated air defense systems and does not have ballistic missile defense. Particularly the air force and navy suffer from this aging equipment which oftentimes would be useless on a modern battlefield. For those reasons the DPRK has a clear technological and material disadvantage when it comes to conventional warfare in comparison to the ROK and the United States. Secondly, the KPA does not have the means to maintain a conflict over a long period of time. It does not have the reserve parts to replace damaged material, nor enough petroleum, a stable food supply or the logistics for protracted warfare.

The regime attempts to overcome these shortcomings using two strategies. Firstly, the highly forward presence of its conventional forces. Pyongyang uses a massive and fast force through which it could obtain initial victories and tactical advantages by overwhelming the adversary, avoiding drawn-out warfare. Secondly, the regime puts all their efforts into a ballistic force, which will provide it with dissuasion and the ability to attack those military bases and other targets outside the Korean peninsula, a feat not possible using its current conventional forces.

### ***Foreign policy***

As the DPRK still holds on too many of the policies of the Cold War, its former allies—specifically the PRC—have become less reliable in the 21<sup>st</sup> century, seeing the state as a liability more than a strategic partner<sup>19</sup>. Because of the perception of insecurity fueled by this isolation, the regime has focused on 2 grand strategy goals: maintaining the Kim-family and, long term, the unification of the island.

---

<https://www.rand.org/pubs/perspectives/PE262.html>

<sup>19</sup> PARK, J. (2017). Why targets of economic sanctions react differently: reference point effects on North Korea and Libya. *International Journal of Conflict and Violence (IJCV)*, 11(1), 569.

DPRK military capabilities must be considered considering these goals. On the one hand, they serve —especially the ballistic capabilities— as a dissuasion force. On the other hand, to reunite Korea, it will be necessary to establish military superiority on the peninsula. Here, ballistic missiles and nuclear weapons play a major role. The objective is not to have a military advantage over the US —a goal that is surely unattainable— but to weaken US support to the ROK through the threat of a nuclear strike. With the US out of the way, the conquest of the South will be difficult, but certainly possible. Moreover, seen from the perspective of constant external threat, the development of nuclear weapons is a logical strategy. Even if the DPRK were to convert itself economically and militarily into the superior of the ROK, it would never have the means to launch a conventional assault against the US for geographical reasons. Thus, a missile programme is the only way to reliably bridge that gap and increase the relative cost of US intervention to such an extent that it is no longer a certainty. This strategy has flaws: US casualties within the ROK would likely be so high that military action could be easily justified, but it is the DPRK's only viable option. In the past, Pyongyang has used small incursions to test capabilities and the US' commitment to the ROK. However, it is not clear what, according to the regime, constitutes a “small” attack, and it is likely that the country, now possessing ICBM's, will act in a more daring way in the future, shifting the focus from testing the ROK to the US.

In conclusion, the foreign policy of the DPRK consists of two parts that are linked intrinsically. Firstly, the development of its conventional, nuclear and ballistic weaponry to weaken the US commitment to the region. That part can be considered as an offensive strategy, opening the door to unification of the peninsula in the long term. Secondly, the development of capabilities within the concept of *two-layered deterrence*. Through the size and training of the KPA, their forward deployment, artillery batteries in the Kaesong Heights and missiles of short, medium and intermediate range, Pyongyang has the certainty of dissuasion in its own region. An offensive against the country, be it from the ROK or the US, would entail the possible destruction of Seoul, Tokyo or other cities and military bases. However, the DPRK came to the conclusion that, as the most likely hostile actor would be the US, developing further dissuasion against them was necessary, given that there was still a possibility that one day the US government would decide that the benefits of regime change outweigh the loss of an Asian city or one of its military bases. Thus, the second layer of dissuasion consists in the arrival of the new

ICBM. This has created a major shift in the East-Asian security landscape. No longer — at least when the nuclear programme is perfected— can the US freely act in the region without having to fear an unreasonably high cost on itself. The historical frontier of protection of the US —the Pacific Ocean— has been bridged and thus a new era in East-Asia has started.

### Implications of the Hwasong-X

The North Korean acquisition of ICBM capabilities has profoundly changed the US presence in East Asia, its alliances with Japan and the ROK and its commitments to the mutual defense and military treaties and nuclear dissuasion. The major problem with extended dissuasion —and therefore the position of the US in the entire region— is convincing any potential adversary that the country is willing to accept high losses while defending an ally<sup>20</sup>. Any high intensity conflict in the region would signify an existential fight for the DPRK, but for the US only regional interests would be at stake. Therefore, both states would have a fundamentally different tolerance for casualties and damage, much like the Vietnam War. Before the development of the Hwasong missiles, the US could wage a war, even reinforce its army and escalate the conflict, without risking much of its population or economical might. The Hwasong 15, however, has changed this dynamic decisively. Today, the DPRK has the capacity to respond to any American interference on the peninsula by being able to destroy most American cities.

Consequently, it has become much more likely for the DPRK to behave in an assertive or provocative way. It probably will not use nuclear weapons as the opening salvo of any conflict or even larger war, as this would trigger an immediate global response and raise the conflict to the highest intensity. However, they can be used as a shield against a possible US intervention or retaliation, thus forming the *two-layered deterrence*. Even the ROK can now be coerced to a larger degree than before into abandoning some national security principles. If the DPRK leadership convinces itself that an escalation of a conflict between it and the ROK is low, that, for whichever reason, US interference is unlikely and that they see a moment of military superiority on the peninsula, then because of Hwasong, the likelihood of an incursion has surely increased. This need not

---

<sup>20</sup> SMITH, S. (2015). Implications for US extended deterrence and assurance in East Asia. *North Korea's Nuclear Futures Series*.

be a full invasion with the aim of annexing the country, but could also entail a territorial incursion, after which the nuclear weapons can be used to force the ROK and the US to accept the border change and come to the negotiating table. Before Hwasong, that pressure could only be exerted on the ROK. A larger invasion is still unlikely, however. The presence of the US guarantees that in the case of intense violence there would be at least hundreds of American losses thus guaranteeing them entering the conflict.

Besides making regional conflicts more likely, the DPRK ICBM acquisition has also weakened the nuclear umbrella under which the ROK and Japan have sought shelter over the past decades. Thus, if those countries at one point or another, conclude that they can no longer count on US support, they might change their own policies drastically. On the one hand, fearing the breakdown of mutual defense, they could initiate their own armament projects, including a nuclear programme, something of which especially Japan can do at great speed<sup>21</sup>. On the other hand, they could look for new alliances with other military powers in the region for protection, creating once again a balance of power. One candidate for this could be China, who has long held reservations about the DPRK. Whichever scenario were to unfold; however, the US would become weaker because of it and thus should convince all states in the region of its continued commitments.

### Future developments

In the coming years, every attempt to pressure the DPRK and attempt a policy change will always need the firm support of China<sup>22</sup>. This, among other reasons, offers an explanation to the inability of the current sanctions against the country to change the behaviour of the regime. Without Beijing, the denuclearization of the peninsula will be all but impossible if Pyongyang does not wish to do so. For that reason, any strategy of the US will have to involve China and, if possible, Russia as they are the only two actors with which the DPRK has amicable relations.

---

<sup>21</sup> MOTOKO, R. (2018). Japan Has Enough Nuclear Material to Build an Arsenal. Its Plan: Recycle. *The New York Times*. Retrieved 16/11/2019 from <https://www.nytimes.com/2018/09/22/world/asia/japan-nuclear-weapon-recycle.html>

<sup>22</sup> AUSLIN, M. R., BEREUTER, D. K., CHA, V. D., CURTIS, C. B., EBERSTADT, N., GALLUCCI, R. L., TILLELLI, J. H. (2010). *U.S. Policy Toward the Korean Peninsula*. Retrieved 16/11/2019 from [https://cfrd8-files.cfr.org/sites/default/files/report\\_pdf/Korean\\_PeninsulaTFR64.pdf](https://cfrd8-files.cfr.org/sites/default/files/report_pdf/Korean_PeninsulaTFR64.pdf)

With the development of ICBM capabilities, the DPRK now has a shield against whichever US-led intervention and, consequently, against a large escalation of violence on the peninsula. Because of this, it will be of the utmost importance to continue the deployment of a United States force near the border and particularly between the DMZ and Seoul. This way, an intervention by the US will not only be more technically feasible but also politically. The death of American troops or civilians will give to the President, whomever he or she may be, the *casus belli* necessary for the use of force. As a consequence, with the constant threat of US aid to South Korea, the probability that the DPRK will launch an assault, be it in reduced size such as the annexation of small islands or a larger attack such as an invasion, will decrease substantially.

In contrary to the political discourse that is prevalent in Washington D.C., the United States will have to accept, the presence of nuclear weapons in the country. The conjoint intelligence services of the US have come to this same conclusion indicating that, despite the negotiations or the public discourse of Kim Jong-Un that advocates denuclearization, the DPRK has no intention to abandon its nuclear weapons<sup>23</sup>. While this is not the optimal nor the desired political outcome for the United States, currently they do not have the means to change the situation. Moreover, the acceptance of this political fact will in no way constitute a capitulation. In fact, it is likely that this would soften the relationship between the two blocks and allow for more viable negotiations, as they shift away from the sensitive nuclear subject and towards topics for which concessions are more likely, such as human rights issues.

Essentially, it is now too late for any type of surgical attack. Those interventions would now not only have to attack and eliminate the stock of the actual missiles, the plutonium and the uranium for them, but also eliminate the production and the launching mechanisms as well. However, the extensive diversification of the launching platforms that has been underway since Kim Jong-Un took power towards a more mobile force complicates any such operation even more. The sheer number of platforms and stocks make a “small” attack impossible, and even with a larger offensive there is no guarantee that all has been eliminated. These complications would in turn require a larger attack which would surely be interpreted by Pyongyang as a first strike and a precursor to an

---

<sup>23</sup> COATS, D. R. (2019). *Worldwide Threat Assessment of the US Intelligence Community*. Retrieved 16/11/2019 from <https://www.dni.gov/files/ODNI/documents/2019-ATA-SFR---SSCI.pdf>

actual invasion, implicating a North Korean retaliation and escalation. Thus, a small attack to eliminate the nuclear programme stopped being a viable option many years ago. For those reasons, surgical strikes in the future will only be possible when very few, relatively unimportant targets are attacked, such as a missile set for launch. Only then, when the risk-assessment is very high and no other alternatives are available should an attack proceed, as even this is a highly risky operation.

## Conclusions

This paper has intended to contribute to the debate about, and the knowledge of DPRK militarization and proliferation, its effects on the region and possible US initiatives to control it. Moreover, it has, keeping in mind the results of the work, attempted to take a first step at the prediction of future events and how to deal with them. Firstly, it is important to highlight the relative weakness of the DPRK armed forces; their strength comes from their numbers, not technology. Thus, in a large-scale war, there is no doubt that the US would be able to defeat the regime. Secondly, this paper has coined the concept of ‘two-layered deterrence’, a fundamental characteristic of North Korean policy. The first layer being aimed at the ROK and Japan and the latest efforts constituting the second layer, aimed at the United States. Thirdly, the presence of US forces in the region will continue to be essential for peace in the peninsula and the region as a whole and should be maintained for the balance of power and a solid dissuasion.

While a global conflict is unlikely in the years to come, given that no one in Pyongyang, Seoul or Washington D.C. would know how it would end, the likelihood of it has increased. By offering the DPRK new options in its foreign policy toolbox, if the circumstances present themselves an incursion against the ROK might be attempted. Because of this new policy option, the alliances between the US and the region have been shook greatly, and a change in alliance networks —and more assertive behaviour from US partners— is now more likely.

*Sam Ysebaert\**

Master student of Geopolitics and Strategic Studies  
University Carlos III Madrid