

Changes of North Korea's Missile Development Strategy and Competition for Missile Development between South and North Korea

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North Korea's cruise and ballistic missile launches on March 2021 demonstrate the fact that a missile development strategy of the Kim Jong Un era has become different from that of the Kim Il-sung-Kim Jong-il eras. In fact, inter-Korean competition for missile development lies at the heart of the Kim Jong Un regime's transition to the parallel development of solid-propellant surface-to-surface ballistic and cruise missiles in addition to expanding the range of liquid-propellant surface-to-surface ballistic missiles. Inter-Korean competition over missile development could become fiercer and the security dilemma could deepen in the process of implementing a missile development strategy as presented at the 8th Party Congress by Chairman Kim Jong Un.

Ballistic Missile Launch in a Year Followed by the Announcement of Kim Yo Jong and Choi Sun Hee

North Korea finally set out to express the words and actions in March 2021 after it had remained silent amidst the Biden administration taking office and the beginning of the ROK-U.S. joint military exercise. The first verbal action was taken by the

first vice-department director of North Korea's Central Committee of the ruling Workers' Party Kim Yo Jong who is in charge of North Korea's external and South Korean policy. In a discourse announced on March 15, 2021, the first vice-department director Kim Yo Jong criticized the implementation of the ROK-U.S. joint military exercise and warned of the possibility of quite strong actions toward South Korea. Director Kim sent a warning to the Biden administration that "The U.S. will be better off not to initiate something that will keep themselves awake at night in the first place."

Two days after the release of the discourse on March 17, the First Vice Foreign Minister in North Korea, Choi Sun Hee in charge of policy on the U.S., made clear North Korea's position on the Biden administration more clearly through another discourse. Minister Choi warned that the conditions should be created in which North Korea can have a dialogue with the U.S. on an equal footing and that the Biden administration should think through what North Korea would do if it continues on a path of the so-called 'hostile policy on North Korea.' The First Vice Minister Choi again emphasized at the end of her discourse the policy principle on the U.S. of 'an eye for eye and a tooth for tooth' laid out by Chairman Kim Jong Un at the 8th Party Congress of the WPK on January 2021.

A few days after the announcement of the discourse of first vice-department director Kim and the First Vice Minister Choi, North Korea went into action. Four days after the release of Minister Choi's discourse on March 21, 2021, North Korea launched two cruise missiles toward the West Sea from South Pyongan Province. Four days after the missile launch on March 25, 2021, North Korea again launched two ballistic missiles toward the East Sea from South Hamgyong. North Korean media released the news about the ballistic missile launches a day after, none of which was not directly observed by Chairman Kim. North Korea's ballistic missile launch took place in a year. The last time North Korea test-launched the ballistic missile before 2021 was March 21, 2020. Its cruise missile launch, however, occurred during that period on April 14, 2020, and on January 22, 2021.

Regarding North Korea's ballistic missile launch, U.S. President Joe Biden said

that ‘the room for diplomacy with North Korea is open’ while also warning that ‘there will be a corresponding response if North Korea escalates tensions.’ Party secretary Ri Pyong-chol who ‘guided’ the test-launch of ballistic missiles on the field responded that ‘The new U.S. administration clearly started off on the wrong foot and that ‘The U.S. would face something undesirable if it continues to babble on recklessly.’ Jo Chol-su, director-general of the Department of International Organizations of North Korea’s Foreign Ministry excoriated the UN Security Council (UNSC) for applying a ‘double standard’ after some European countries requested to hold a meeting of the UNSC to discuss North Korea’s ballistic missile launch while the UNSC has looked the other way about the ROK-U.S. joint military exercise.

Changes of North Korea’s Missile Development Strategy

Before Chairman Kim Jong Un came into power, North Korea continuously attempted to extend the range of ballistic missiles. In the process, North Korea claimed space development as an excuse to avoid international criticism to some degree. Even after Kim Jong Un took power, North Korea made an effort to extend the range of ballistic missiles, representative of which was a de facto ‘sophistication of nuclear and missile capability’ under the guise of ‘Byungjin (parallel development) policy of economy and nuclear weapons’ implemented by Chairman Kim Jong Un as a national strategic line of 2013~2017. In particular, North Korea kept launching Hwasong-type ballistic missiles from 2016 to 2017 claiming the so-called ‘completion of the state nuclear force’ after it had made a certain level of advancement, on September 29, 2017, in the test-launch of ‘Hwasong-15’ deemed to be the level of ICBM capable of attacking the U.S. mainland. Those stated above are mostly related to North Korea’s liquid-propellant ballistic missiles.

In the meantime, North Korea has proceeded with developing solid-propellant ballistic missiles. It was the mid-2000s when North Korea’s development of solid-propellant ballistic missiles was known to the outside for the first time. Solid-propellant ballistic missiles test-launched by North Korea from April to May

2005 has been dubbed 'KN-02' by the Military intelligence authorities of the ROK and the U.S. Since then North Korea has continued on test-launching solid-propellant short-range ballistic missiles but failed to receive the attention as the range of those missiles was evaluated as not actually that long. It was until after Kim Jong Un took power that the attention was given to North Korea's solid-propellant ballistic missile development. In January 2015, North Korea test-flighted 'Pukguksong-1 type' submarine-launched ballistic missile (SLBM), a solid-propellant ballistic missile, near North Korea's Sinpo South Shipyard in South Hamgyong Province. North Korea went ahead with test-launching the 'Pukguksong-2,' an upgraded version of the ground-based 'Pukguksong-1 type' SLBM in February 2017. North Korea did not initiate the missile test launches in the so-called phase of peaceful spring on the Korean Peninsula but began test-launching missiles since April 2019 after the second North Korea-U.S. summit meeting ended without any agreement. Until March 2020, North Korea continued launching solid-propellant projectiles 18 times, including 'new tactical guided' missiles, a new large-caliber multiple launch guided rocket system, and its new Pukguksong-3 submarine-launched ballistic missile (SLBM).

In the meantime, North Korea under the Kim Jong Un era has proceeded with the development of cruise missiles. In fact, it launched a ground-launched cruise missile three times since the phase of the peaceful spring on the Korean Peninsula. Some viewed that North Korea's cruise missiles launched from 2020 to 2021 were 'surface-to-ship missiles,' designed to launch from the ground and target and attack ships on the sea. However, it is not that difficult to use a surface-to-ship cruise missile for the purpose of striking a target on the ground. So re-purposing the surface-to-ship missile as a surface-to-surface missile demands that an intercepting system be established much more on the ground than on the sea and that difficulty be considered of hovering at a lower altitude on the ground rather than above the sea.

As such, North Korea's missile development strategy has dramatically changed under the Kim Jong Un era. North Korea's missile development strategy under the Kim Il Sung and Kim Jong Il era can be evaluated as being done in a direction of

extending the missile range based on liquid-propellant, ballistic missile-related technology. The dominant strategy was to divide missile-related issues into several sections, use this as a negotiation card against the U.S., and adjust the speed of missile development. However, North Korea's missile development strategy has changed as follows: while the existing strategy of extending the range of liquid-propellant, surface-to-surface ballistic missile remains in place without adjusting the speed, a parallel strategy of developing solid-propellant, surface-to-surface ballistic missile and cruise missile appears to be implemented.

Such a direction of developing missiles of the Kim Jong Un regime can be coherently affirmed in the Military Parade celebrating the 75th anniversary of the foundation of the Workers' Party of Korea held on October 10, 2020, and the 8th Party Congress. The highlight of the October 2020 Military Parade was the display of a super-large new ballistic missile, larger both in width and length than Hwasong-15, which was referred to as a 'rock with the range of striking anywhere in the world' by Chairman Kim Jong Un at the 8th Party Congress. This remark could be interpreted as an expression of the will to continue the extension of the range of liquid-propellant, surface-to-surface ballistic missile. Also, Chairman Kim mentioned the development of the mid-to long-range cruise missile as one of the achievements in missile technology at the 8th Party Congress and presented as the tasks ahead the development of the solid-fueled intercontinental ballistic missile capable of being launched from sea and the ground, the development of hypersonic glide (maneuvering) warheads and multiple independently targetable reentry vehicle (MIRV).

Competition for Missile Development between the South and the North

An extension of the range of the liquid-propellant surface-to-surface ballistic missile, which has been coherently implemented under the Kim Jong Un era followed by the eras of Kim Il-sung and Kim Jong-il, was highly likely scenario given North Korea's strategy on the U.S. The same goes true for the development of

solid-propellant surface-to-surface ballistic missiles: a lot of additional equipment is required; fuel should be injected well before the launch; and injected fuel of liquid-propellant ballistic missile should be eliminated when the launch is immediate so solid-fueled ballistic missile, which does not require such a process, is much more suitable for military purpose. Given that developing a whole new type of missile necessitates a significant amount of time and effort, North Korea's solid-fueled ballistic missile development may have begun in the Kim Il-sung era.

However, it was not easy to predict North Korea's development of cruise missiles. It is because a jet engine similar to the engine of aircraft is mounted on a cruise missile, unlike a ballistic missile that uses a rocket engine. North Korea after the beginning of the Kim Jong Un era, made it known that it had independently developed aircraft capable of flying by propeller engine. Given this statement, not many people would have predicted that the Kim regime was able to develop a workable jet engine within a short period. However, as noted above, North Korea has continued launching a cruise missile since 2020. Regardless of whether the purpose of such test launches is to develop weapons or to send a warning to South Korea or the U.S. as a way to demonstrate force, it is hard to deny the fact that North Korea's jet engine development has increasingly become a tangible reality.

One can draw many possible reasons as to why the Kim Jong Un regime began to implement a parallel development of various missiles. The Kim Jong Un regime has inherited the missile development strategy of the Kim Il-sung and Kim Jong-il regimes and has drastically proceeded with extending the range of surface-to-surface ballistic missiles, which use liquid-propellant. In that sense, this strategy can be evaluated as a counter-strategy to the U.S.'s so-called 'hostile policy toward North Korea.' However, solid-fueled surface-to-surface ballistic missile and cruise missile, recently developed by North Korea, is more aimed at South Korea as opposed to counteract the U.S. when accounting for the range. In that sense, it is worth noticing the context of the inter-Korean competition for missile development.

South Korea, which started developing missiles in the 1970s well before North

Korea, developed, produced, and deployed a solid-propellant surface-to-surface ballistic missile called 'Hyunmoo' in the leading-up to the Seoul Olympics in the 1980s. After the end of the Cold War, South Korea did not implement the development of surface-to-surface ballistic missiles in compliance with the U.S.-led global principle of WMD non-proliferation. However, South Korea started to develop missiles in earnest as a response to North Korea's rapidly built-up missiles in the 1980~1990s. As a result, South Korea independently completed the development of the Hyunmoo-3 type surface-to-surface cruise missile in the mid-2000s. Not long after that, the ROK also completed the development of Hyunmoo-2 type, solid-propellant surface-to-surface ballistic missiles.

However, a majority of surface-to-surface ballistic missiles, actually deployed by North Korea during the mid-to-late-2000s were Scud-type liquid-fueled surface-to-surface ballistic missiles developed by the Soviet Union in the past. In other words, although North Korea's missile force may have dominated that of the South in terms of quantity, South Korea started to outrank the North in terms of quality. After that, South Korea rapidly increased Hyunmoo-2 type Scud-type surface-to-surface ballistic missiles and Hyunmoo-3 type surface-to-surface cruise missiles in an attempt to overcome its quantitative weakness. In sum, it had become increasingly difficult to categorically state whose missile force outpowers the other party since both parties were able to strike each other with missiles. Therefore, one can predict the reasons why North Korea consecutively test-launched new type solid-propellant short-range surface-to-surface ballistic missiles since 2019 and continued test-launching cruise missiles since 2020. In other words, North Korea's launch of solid-propellant surface-to-surface ballistic and cruise missiles since 2019 could be viewed as an effort to regain the upper hand of the missile force that was lost against South Korea.

North Korea stated that a 'solid-propellant engine equipped with existing core technology' and 'warheads of as heavy as 2.5t' was mounted on ballistic missiles launched on March 25, 2021, flying the range of 600km. This is a reminder of South Korea's test launch of Hyunmoo-4 solid-propellant surface-to-surface ballistic

missiles on March 2020. Hyunmoo-4 missile is known to have two types: warheads weights of 3~4t, range of 500km; and warheads weights of 2t, range of 800km. Regarding this, it is worth examining the statement released in the name of ‘First Vice Director of the party’s Propaganda and Agitation Department Kim Yo Jong’ on March 30, 2021. First Vice Director Kim Yo Jong said in a statement that although President Moon Jae-in expressed a ‘concern’ regarding North Korea’s test-launching of ballistic missiles in a speech delivered at ‘West Sea Defense Day Ceremony’ on March 26, 2021, he praised the achievements of the development of Hyunmoo-4 missiles in his visit to The Agency for Defense Development on July 2020, calling it a contradictory move. Such a statement, albeit not explicit, appears to be premised on the assumption that North Korea’s ballistic missile, test-launched on March 25, 2021, is similar to South Korea’s Hyunmoo-4 missile. In the meantime, it is hard to evaluate a cruise missile launched by North Korea on March 21, 2021, since the related data is not available.

Inter-Korean competition for missile development as such is likely to persist in the future. In particular, North Korea still has a long way to go until it could reap the benefits of solid-propellant ICBM development, as pronounced at the 8th Party Congress by Chairman Kim Jong Un. North Korea’s test-launch of solid-propellant, surface-to-surface ballistic missile on March 25, 2021, which is not that different from the process of expanding the range, could be a part of ‘a process’ toward solid-propellant ICBM missile development as the Secretary of the Central Committee Ri Pyong-chol mentioned it. Moreover, North Korea’s such missile development could become a factor inducing South Korea’s counteracting movement, which is a strategy of acquiring various missiles as previous experiences suggest. In other words, the military build-up for self-defense, in turn, triggers counteractive moves of the other party in the form of their military build-up, creating a vicious cycle of ‘security dilemma’ posing an eventual threat to one’s security. ©KINU 2021

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