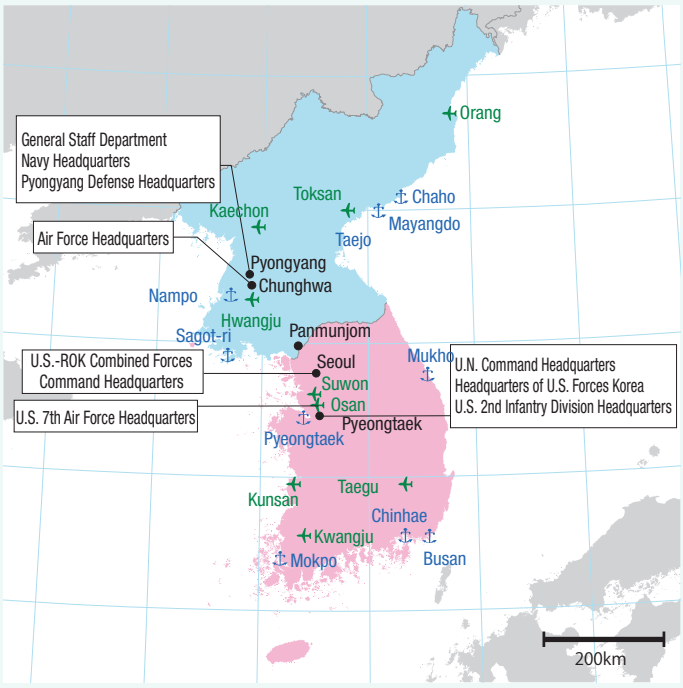
Section 3 Korean Peninsula

On the Korean Peninsula, people of the same ethnicity have been divided into two—north and south—for more than half a century. Even today, the ROK and North Korea pit their ground forces of about 1.6 million against each other across the demilitarized zone (DMZ).

Peace and stability on the Korean Peninsula under such security environment is an extremely important challenge not only to Japan but also to the entire region of East Asia.

See Fig. I-2-3-1 (Military Confrontation on the Korean Peninsula)

Fig. I-2-3-1 Military Confrontation on the Korean Peninsula



		North Korea	ROK	U.S. Forces in Korea
Total armed forces		Approx. 1.28 million personnel	Approx. 625,000 personnel	Approx. 26,000 personnel
Army	Ground troops	Approx. 1.1 million personnel	Approx. 490,000 personnel	Approx. 18,000 personnel
	Tanks	T-62, T-54/-55, etc. Approx. 3,500	M-48, K-1, T-80 etc. Approx. 2,510	M-1A2SEPv2
Navy	Naval vessels	Approx. 780 111,000 tons	Approx. 240 217,000 tons	Supporting corps only
	Destroyers Frigates Submarines	4 25	12 13 14	
	Marines		Approx. 29,000 personnel	
Air Force	Combat aircraft	Approx. 550	Approx. 640	Approx. 80
	Third and fourth generation fighters	Mig-23 × 56 Mig-29 × 18 Su-25 × 34	F-4 × 60 F-16 × 163 F-15 × 59	F-16 × 60
Reference	Population	Approx. 25.38 million	Approx. 51.42 million	
	Term of service	Men: 12 years Women: 7 years	Army: 18 months Navy: 20 months Air Force: 22 months	

Note: 1.Data from "The Military Balance 2019," etc.; Data for the troop strength of the U.S. Forces Korea from DoD information (December 2018)
2.ROK is reducing the mandatory military service period in stages from 2018 to 2021.

1 North Korea

1 General Situation

North Korea has been advocating the building of a strong socialist state in all areas—ideology, politics, military affairs, and economy,[1] and it adopts "military-first (Songun) politics" to realize this goal. "Military-first (Songun) politics" has been defined as a basic form of socialist politics that leads the great undertaking of socialism to victory by giving priority to the military forces in all activities under the principle of military first, and strengthening and relying on the actors in the revolution with the Korean People's Army (KPA) acting as the central and main force.[2] In fact, leader Kim Jong-un, Chairman of the State Affairs Commission,[3] who is in a position to control the military, noted: "It is necessary to uphold the military-first revolutionary path as the constant strategic path." In addition, at the Plenary Meeting of the Central Committee of the Korean Workers' Party (KWP) in March 2013, Chairman Kim Jong-un adopted the "Byungjin line" policy of simultaneous economic and nuclear development, asserting that even if North Korea does not increase defense spending, it would be able to concentrate on its economic development and on improving the people's livelihood while increasing the effectiveness of its war deterrent and defense force as long as nuclear deterrence is robust. At the Seventh KWP Congress in May 2016, he made it clear that he would uphold the "Byungjin line" as well as the "Songun politics."

On the other hand, it is said that Chairman Kim Jong-un is giving the party the central role in running the state, as evidenced by the fact that he convened the KWP Congress in May 2016 for the first time in 36 years. Furthermore, at the Plenary Meeting of the Central Committee of the KWP in April 2018, Chairman Kim declared that the "Byungjin line" had been successfully carried out as the development of the state nuclear force had been completed. He also announced that the KWP's "new strategic line" was that the whole of the party and the whole of the state will fully concentrate efforts on the construction of a socialist economy, indicating his policy of concentrating on economic development. In addition, at the Supreme People's Assembly in April 2019, Chairman Kim expressed his intention to continue to concentrate on economic development. Moreover, he stated at the same assembly that the national defense capabilities will constantly be improved, indicating that North Korea will continue to make efforts to maintain and enhance its military capabilities and combat readiness under "the new strategic line".[4] According to the official announcement at the Supreme People's Assembly in April 2019, the proportion of the defense budget in the FY2019 national budget was 15.8%. However, it is believed that this represents only a fraction of the real defense expenditures.

Furthermore, North Korea has continued to promote the development of weapons of mass destruction (WMDs) and ballistic missiles and the enhancement of its operation capabilities, including by conducting six nuclear tests so far and repeatedly launching ballistic missiles in recent years at an unprecedented frequency. In addition, North Korea is assessed to possess large-scale cyber units as part of its asymmetric military capabilities, engaging in theft of military secrets and developing capabilities to attack critical infrastructure of foreign countries. It also retains large-scale special operation forces. In addition, North Korea has repeatedly used provocative rhetoric and behavior against

KEY WORD

Ballistic missiles

A ballistic missile is a rocket engine-propelled missile that flies on a parabolic trajectory. It is capable of attacking distant targets. Ballistic missiles are generally categorized according to the following table.

Description	Range
Short Range Ballistic Missile, SRBM	Under approx. 1,000 km or less
Medium Range Ballistic Missile, MRBM	Approx. 1,000 to under approx. 3,000 km
Intermediate Range Ballistic Missile, IRBM	Approx. 3,000 to under approx. 5,500 km
Inter-Continental Ballistic Missile, ICBM	Approx. 5,500 km or more

Ballistic missiles launched from submarines are collectively referred to as submarine-launched ballistic missiles (SLBMs), while a ballistic missile that has a precision guidance system on its warhead necessary to attack aircraft carriers and other vessels is called an anti-ship ballistic missile (ASBM).

1 North Korea used to insist that it would open the door to a "powerful and prosperous nation (Kangseong Daeguk)" in 2012, which marked the 100th anniversary of the birth of the late President Kim Il-sung. Recently, however, North Korea has been using mainly the expression, "powerful and prosperous country (Kangseong Kukka)."

2 Written decision of the Seventh Congress of the Korean Workers' Party, "Report on the Work of the KWP Central Committee" (May 8, 2016).

3 At the Supreme People's Assembly in June 2016, the National Defense Commission was renamed the State Affairs Commission, presided over by Chairman Kim Jong-un. For consistency purposes "Chairman of the State Affairs Commission" is used for the title of Kim Jong-un in this white paper.

4 In his "New Year's Address" in 2019, Chairman Kim Jong-un also expressed his intention to continue to raise the national defence capacity to that of world's advanced countries.

column Status of North Korea's Denuclearization and Its Nuclear and Missile Capabilities

North Korea has expressed the intention to work towards the complete denuclearization of the Korean Peninsula at the U.S.-North Korea Summit Meeting in June 2018. It has announced the suspension of nuclear tests and test-firing of ICBMs, and publicly destroyed the Punggye-ri nuclear test site, announced that it would take additional measures, including the dismantlement of a missile launch pad and engine test stand in Tongchang-ri, and pledged to dismantle a nuclear facility in Yongbyon in exchange for the United States' partial lifting of sanctions.

However, the second U.S.-North Korea Summit Meeting in February 2019 ended without any agreement. North Korea has not carried out the dismantlement of all weapons of mass destruction and ballistic missiles of all ranges in a complete, verifiable, and irreversible manner . The suspension of nuclear tests and ICBM firings and the open destruction of the nuclear test site do not change the existing nuclear and ballistic missile capabilities that North Korea acquired through repeated nuclear tests and missile launches. In other words, it remains that North Korea is assessed to have already successfully miniaturized nuclear weapons to fit ballistic missile warheads, possesses and deploys several hundred ballistic missiles capable of reaching every part of Japan and continues to possess capabilities for conducting surprise attacks against Japan utilizing transporter-erector launchers and submarines and for simultaneous launches of several ballistic missiles and thus there has been no essential change in North Korea's nuclear and missile capabilities.

Meanwhile, North Korea has never mentioned the declaration or dismantlement of existing nuclear warheads, nuclear materials, biological and chemical weapons, ballistic missiles for delivering weapons of mass destruction, or relevant facilities. While it is pointed out that an uranium enrichment facility not disclosed exists in addition to the disclosed facility in Yongbyon, North Korea has never mentioned the presence or dismantlement of such facilities.

Given these points, the Ministry of Defense and Self-Defense Forces will continue close watch on what kind of concrete actions North Korea would take towards the dismantlement of weapons of mass destruction and missiles, as well as collecting and analyzing necessary information and engaging in warnings and surveillance on North Korea's military trends in close cooperation with the United States and other countries.

Photo: (Nodong [Korea News Service/ Jiji])

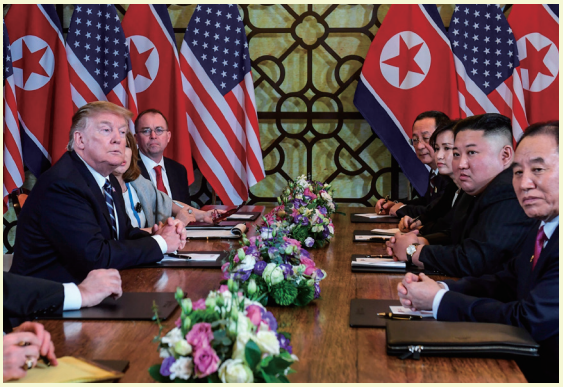


Photo: (2nd U.S.-North Korea Summit Meeting [AFP/Jiji])

relevant countries, including Japan.[5]

Such military trends in North Korea pose a grave and imminent threat to the security of Japan and seriously undermine the peace and security of the region and the international community.

Needless to say, North Korea's possession of nuclear weapons cannot be tolerated. At the same time, sufficient attention needs to be paid to the development and deployment of ballistic missiles, the military confrontation on the Korean Peninsula, and the proliferation of WMDs and ballistic missiles by North Korea.

Partly because North Korea maintains its extremely closed regime, it is difficult to accurately capture the details and intentions of its behavior. However, it is necessary for Japan to pay utmost attention to them.

5 For example, North Korea insisted "Japan will not be spared a merciless retaliatory attack by the North Korean forces" as a measure to "hold it totally accountable for all its vices" (July 2010). In addition, it stated that "not only Yokosuka, Misawa, Okinawa, and Guam but also the U.S. mainland are within our range" (March 31, 2013, Rodong Sinmun), "none of Japan's territories shall be spared from being the target of our retaliatory attack" (listing the names of Tokyo, Osaka, Yokohama, Nagoya, and Kyoto in this context) (May 29, 2009, Korean Central News Agency; April 10, 2013, Rodong Sinmun), etc. More recently, the Korean Central Broadcasting Station stated on September 13, 2017, that, "the Japanese archipelago will be sunk into the sea by a nuclear bomb," and the October 9 edition of the Rodong Sinmun stated that, "If the flames of war break out on the Korean Peninsula, Japan can never be safe. Everything in Japan that is mobilized for war will be pulverized to pieces, to say nothing of the bases in Japan for U.S. invasion."

2 Military Posture

(1) General Situation

North Korea has been building up its military capabilities in accordance with the Four Military Guidelines (extensive training for all soldiers, modernizing all military forces, arming the entire population, and fortifying the entire country).[6]

North Korea's military forces are comprised mainly of ground forces, with a total troop strength of roughly 1.28 million. While North Korea's military forces are believed to have been maintaining and enhancing their capabilities and operational readiness, most of its equipment is outdated.

Meanwhile, North Korea has forces such as large-scale special operations force that can conduct various operations ranging from intelligence gathering and sabotage, to guerrilla warfare. Moreover, North Korea seems to have many underground military related installations across its territory.

(2) Military Capabilities

The North Korean Army comprises about 1.10 million personnel, and roughly two-thirds of them are believed to be deployed along the DMZ. The main body of the army is infantry, but the army also maintains armored forces including at least 3,500 tanks and artillery. North Korea is believed to regularly deploy long-range artillery along the DMZ, such as 240 mm multiple rocket launchers and 170 mm self-propelled guns, which can reach cities and bases in the northern part of the ROK including the capital city of Seoul. Despite limited resources, it is deemed that North Korea continues to selectively reinforce its conventional forces and improve its equipment, such as main battle tanks and multiple rocket launchers.[7]

The Navy has about 780 ships with a total displacement of approximately 111,000 tons and is chiefly comprised of small naval vessels such as high-speed missile craft. Also, it has about 20 of the former model Romeo-class submarines, about 50 midget submarines, and about 140 air cushioned landing crafts, the latter two of which are believed to be used for infiltration and transportation of the special operations forces.

The Air Force has approximately 550 combat aircraft, most of which are out-of-date models made in China or the former Soviet Union. However, some fourth-generation aircraft such as MiG-29 fighters and Su-25 attack aircraft are also included. North Korea has a large number of outdated An-2 transport aircraft as well, which are believed to be used for transportation of special operations forces.

In addition, North Korea has so-called asymmetric military capabilities, namely, special operations force whose size is estimated at 100,000 personnel.[8] In recent years, North Korea is seen to be placing importance on and strengthening its cyber forces.[9]

See Part I, Chapter 3, Section 3-2-3 (North Korea)

3 WMD and Ballistic Missiles

While North Korea continues to maintain largescale military capabilities, its conventional forces are considerably inferior to those of the ROK and the U.S. Forces Korea. This is the result of a variety of factors, including decreases in military assistance from the former Soviet Union due to the collapse of the Cold War regime, limitations placed on North Korea's national defense spending due to its economic stagnation, and the rapid modernization of the ROK's defense capabilities. It is thus speculated that North Korea is focusing its efforts on WMD and ballistic missile reinforcements in order to compensate for this shortfall.

In recent years, North Korea has launched ballistic missiles at an unprecedented frequency, rapidly improving its operational capabilities, such as simultaneous launch and surprise attack. In addition, given the technological maturity

6 The Four Military Guidelines were adopted at the fifth plenary meeting of the fourth KWP Central Committee in 1962.

7 North Korea reportedly continues to develop and produce modified tanks, such as the Pokpung-ho, the Ch'onma-ho and the Songun. (Furthermore, the Defense White Paper 2014 that the ROK Ministry of National Defense released in January 2015 refers to North Korea's development of a new 300 mm multiple rocket launcher, as well as the significant increase in the number of tanks, armored cars, and multiple rocket launchers in North Korea's possession. Furthermore, the Defense White Paper 2018 pointed out additional production of a new type of tanks and the development of special shells, including precision-guided shells, by North Korea. North Korea allegedly fired several rounds from the 300 mm multiple rocket launcher on three instances in March 2016 and launched a new short-range surface-to-air missile in April 2016. In addition, North Korea announced that it had successfully conducted test launches of a new type of surface-to-air missiles and a new type of surface-to-ship cruise missiles on May 28 and June 9, 2017, respectively.

8 It had been said that North Korea possessed two types of special operations forces: one under the military forces and the other under the KWP. However, it has been reported that these organizations were consolidated in 2009 and the Reconnaissance General Bureau was established under the auspices of the military forces. The existence of the bureau was officially confirmed in March 2013 when Korean Central Broadcasting Station reported General Kim Yong-chol as the Director of the Reconnaissance General Bureau. Moreover, James Thurman, then Commander of the U.S. Forces Korea, stated, "North Korea possesses the world's largest special operations force of over 60,000" in his speech at the Association of U.S. Army in October 2012. Additionally, the ROK Defense White Paper 2018 notes, "Special operation forces are currently estimated at approximately 200,000 strong." The white paper pointed out that North Korea's special operations force has become an independent military branch.

9 The U.S. Director of National Intelligence's "Worldwide Threat Assessment" of February 2016 notes, "North Korea probably remains capable and willing to launch disruptive or destructive cyber attacks to support its political objectives." The U.S. Department of Defense's annual report "Military and Security Developments Involving the Democratic People's Republic of Korea," released in May 2018, states, "North Korea probably views cyber operations as an appealing, cost-effective, and deniable means by which to collect intelligence and cause disruption against its highly networked adversaries, notably the ROK, Japan, and the United States." According to the ROK's Defense White Paper 2018, North Korea is operating approximately 6,800 cyber warfare personnel and is continuing efforts to strengthen cyber warfare capability, including training of personnel with expert skills. Regarding North Korean cyber attacks, see Chapter 3, Section 3.

obtained through a series of nuclear tests, North Korea is assessed to have already miniaturized nuclear weapons to fit ballistic missile warheads.

These military trends in North Korea, coupled with its provocative rhetoric and behavior, such as suggesting a missile attack on Japan, and North Korea's development of WMDs and missiles pose a grave and imminent threat to the security of Japan and seriously undermine the peace and security of the region and the international community. Additionally, such development poses a serious challenge to the entire international community with regard to the non-proliferation of weapons, including WMDs.

On the other hand, at the Plenary Meeting of the Central Committee of the KWP held on April 20, 2018, decisions were made to discontinue "nuclear test and inter-continental ballistic rocket test-fire," and to dismantle the northern nuclear test ground. In the subsequent inter-Korean summit meeting held on April 27 and in the U.S.-North Korea summit meeting held on June 12, North Korea expressed its intention to work towards denuclearization. Then, on May 24, international press representatives were invited to witness the destruction of the northern nuclear test ground.

However, as North Korea has not carried out the dismantlement of all weapons of mass destruction and ballistic missiles of all ranges in a complete, verifiable, and irreversible manner, there has been no essential change in North Korea's nuclear and missile capabilities.

Looking to the future, it will be necessary to continue to carefully monitor moves by North Korea, including what kind of concrete actions it will take towards the dismantlement of all weapons of mass destruction and ballistic missiles of all ranges in a complete, verifiable and irreversible manner.

(1) Nuclear Weapons

a. The Current Status of the Nuclear Weapons Program

Details of the current status of North Korea's nuclear weapons program are largely unclear, partly because North Korea remains an extremely closed regime. In light of the unclear status of past nuclear developments, and considering North Korea has already conducted six nuclear tests including the nuclear test in September 2017, it is conceivable that North Korea has made considerable progress in its nuclear weapons program.

With regard to plutonium, a fissile material that can be used for nuclear weapons,[10] North Korea has suggested its production and extraction on several instances.[11] As for recent activities, in September 2015, North Korea announced that all nuclear facilities in Yongbyon, including the nuclear reactor and the reprocessing facility, the disablement of which was agreed upon at the fifth and the sixth round of the Six-Party Talks in February and September 2007, respectively, had been readjusted and had started normal operation.[12] Because the restarting of the reactor could lead to the production and extraction of plutonium by North Korea, those activities are causes of great concern.

As for highly enriched uranium that can also be used for nuclear weapons, in June 2009, North Korea declared the commencement of uranium enrichment. In November 2010, North Korea disclosed its uranium enrichment facility to American nuclear specialists and later announced that it was operating a uranium enrichment plant equipped with thousands of centrifuges. The expansion of this uranium enrichment plant has been suggested in August 2013; in this regard, North Korea could have increased its enrichment capabilities. The series of North Korean behaviors related to uranium enrichment indicate the possibility of the development of nuclear weapons using highly enriched uranium in addition to plutonium.[13]

Regarding these nuclear-related activities, activities that are inconsistent with a "commitment to work toward complete denuclearization of the Korean Peninsula," which North Korea insists it upholds, have been pointed out. For example, U.S. Secretary of State Pompeio testified in the Senate in July 2018 that North Korea was continuing to produce nuclear fuels. In addition, at a meeting of the International Atomic Energy Agency (IAEA) Board of Governors, IAEA Director General Amano pointed out in March 2019 that the IAEA continued to observe signs of North Korea using the enrichment facility at nuclear facilities in Yongbyon.

10 Plutonium is synthetically produced in a nuclear reactor by irradiating uranium with neutrons, and then extracting it from used nuclear fuel at a reprocessing facility. Plutonium is then used as a basic material for the production of nuclear weapons. Meanwhile, in order to use uranium for nuclear weapons, it is necessary to extract uranium 235 (U235), a highly fissile material, from natural uranium. This process is called enrichment. Generally, a large-scale enrichment facility that combines thousands of centrifuges is used to boost the U235 concentration to nuclear weapon levels (over 90%).

11 North Korea announced in October 2003 that it had completed the reprocessing of 8,000 used fuel rods that contain plutonium, and in May 2005 that it had completed extraction of an additional 8,000 used fuel rods. The ROK's Defense White Paper 2018 estimates that North Korea possesses around 50 kg of plutonium, retaining the assessment given in the Defense White Paper 2016.

12 The "Worldwide Threat Assessment" of the U.S. Director of National Intelligence of January 2016 notes, "North Korea has followed through on its announcement by expanding the size of its Yongbyon enrichment facility and restarting the reactor that was previously used for plutonium production." It is said that the reactor was restarted at the end of August 2013. It has been noted that if the reactor is restarted, North Korea would have the capability to produce enough plutonium (approximately 6 kg) to manufacture approximately one nuclear bomb in one year.

13 The ROK Defense White Paper 2018 assesses that North Korea possesses a substantial amount of highly enriched uranium (HEU). It has been noted that a uranium enrichment facility different from the one in Yongbyon exists in Kangson."

With regard to the development of nuclear weapons, North Korea has conducted nuclear tests in October 2006,[14] May 2009,[15] February 2013,[16] January 2016,[17] September 2016,[18] and September 2017.[19] It is highly likely that North Korea has made strides in its nuclear weapons program, collecting the necessary data through these nuclear tests.

It is believed that North Korea seeks to miniaturize nuclear weapons and develop them into warheads that can be mounted on ballistic missiles, as part of its nuclear weapons program. On September 3, 2017, it was announced that Chairman Kim Jong-un had visited North Korea's Nuclear Weapons Institute and had seen a hydrogen bomb capable of being loaded into an ICBM,[20] in addition to which, following North Korea's sixth nuclear test that was forced through on the same day, North Korea announced that it "successfully carried out a test of H-bomb for ICBM." In general, miniaturizing a nuclear weapon small enough to be mounted on a ballistic missile requires a considerably high degree of technological capacity. However, considering, for example, that the United States, the former Soviet Union, the United Kingdom, France, and China succeeded in acquiring such technology by as early as the 1960s, as well as the technological maturity that is estimated to have been reached through North Korea's previous six nuclear tests, it is assessed that North Korea has already miniaturized nuclear weapons to fit ballistic missile warheads.[21]

Furthermore, the yield of the sixth nuclear weapons test in 2017 was estimated to be the largest ever, with a maximum yield of approximately 160 kt. Given the size of the estimated yield, the possibility cannot be discounted that the test was of a hydrogen bomb.[22]

Object claimed to be a hydrogen bomb capable of being loaded into an ICBM [Korean News Service/Jiji]

In any case, related developments need to be monitored carefully. North Korea's nuclear weapons development, considered in conjunction with North Korean efforts to enhance ballistic missile capabilities, including extending the range of ballistic missiles that are the delivery vehicles of WMDs, poses a serious and imminent threat to the security of Japan, and seriously undermines peace and security of the region and international community. Therefore, it can never be tolerated.

b. Background of the Nuclear Program

As regards the objective of North Korea's nuclear development, North Korea is deemed to be developing nuclear weapons as an indispensable deterrent for maintaining the existing regime in light of the following: North Korea's ultimate goal is allegedly the maintenance of the existing

14 On October 27, 2006, as a result of the independently collected information and its analysis as well as Japan's own careful examination of the U.S. and ROK analyses, the Japanese Government arrived at the judgment that the probability of North Korea conducting a nuclear test was extremely high.

15 The Japanese Government believes that North Korea conducted a nuclear test on this day, given that North Korea announced on May 25, 2009, via the Korean Central News Agency, that it had successfully conducted an underground nuclear test, and in light of the Japan Meteorological Agency's detection of seismic waves with a waveform that were unlikely those of a natural earthquake.

16 On February 12, 2013 at around 11:59 am, the Japan Meteorological Agency detected seismic waves with an epicenter located in the vicinity of North Korea, which had waveforms that were unlikely those of a natural earthquake. On the same day, North Korea announced via the Korean Central News Agency that it successfully conducted a nuclear test. On this basis, the Government of Japan verified the facts in coordination with other relevant parties, including the United States and the ROK. Based on a comprehensive consideration of the aforementioned information, the Japanese Government determined that North Korea conducted a nuclear test. North Korea announced that it "succeeded in the third underground nuclear test," "the test was conducted in a safe and perfect way on a high level with the use of a smaller and light A-bomb, unlike the previous ones, yet with great explosive power," "physically demonstrating the good performance of the Democratic People's Republic of Korea (DPRK)'s nuclear deterrence that has become diversified."

17 On January 6, 2016 at around 10:30 am, the Japan Meteorological Agency detected seismic waves with an epicenter located in the vicinity of North Korea, which had waveforms that were unlikely those of a natural earthquake. On the same day, North Korea announced via the Korean Central News Agency that it successfully conducted a hydrogen bomb test. Based on a comprehensive consideration of this and other information, the Japanese Government determined that North Korea conducted a nuclear test.

18 On September 9, 2016 at approximately 9:30 a.m., the Japan Meteorological Agency detected seismic waves with an epicenter located in the vicinity of North Korea, which had waveforms that were unlikely those of a natural earthquake. Based on a comprehensive consideration of all the information including this, the Government believes that North Korea conducted a nuclear test.

19 At around 12:31 p.m. on September 3, 2017, the Japan Meteorological Agency (JMA) detected seismic waves with an epicenter located in the vicinity of North Korea, which had waveforms that were unlikely those of a natural earthquake. Based on comprehensive considerations, including the information from the JMA, the Government determined that the earthquake occurred as a result of a nuclear test by North Korea.

20 On September 3, 2017, in a report on a visit by Chairman Kim Jong-un to North Korea's Nuclear Weapons Institute, the Korean Central News Agency (KCNA) announced that North Korea is able to conduct an "ultra-powerful electromagnetic pulse (EMP) attack over a wide area."

21 Over ten years have already passed since North Korea conducted its first nuclear test in October 2006. Furthermore, North Korea has conducted six nuclear tests to date. This timetable for technology development and the number of tests are reaching levels that are by no means inadequate, even when compared to the processes of developing technologies to miniaturize and lighten nuclear weapons in the United States, former Soviet Union, the United Kingdom, France, and China. The ROK's Defense White Paper 2018 assesses that "North Korea's ability to miniaturize nuclear weapons seems to have reached a considerable level."

22 The ROK's Defense White Paper 2018 noted that the explosive yield of the sixth nuclear test was approximately 50 kt, significantly larger than the yield of the past tests and that this was assessed to be a hydrogen bomb test. North Korea also insisted that its fourth nuclear test, conducted in January 2016, was a hydrogen bomb test. However, given that the yield of that test is estimated at 6 to 7 kt, it is difficult to conceive that this was a hydrogen bomb test as generally defined.

regime;[23] North Korea considers that it needs its own nuclear deterrence to counter the nuclear threat of the United States[24] and is in no position at least in the short-term to overturn its inferiority in conventional forces vis-à-vis the United States and the ROK; North Korea asserts that the Iraqi and Libyan regimes collapsed and that Syria was attacked by U.S. Forces in April 2017 due to their lack of nuclear deterrence;[25] and North Korea has reiterated that nuclear weapons will never be traded away at negotiations.

In fact, North Korea has repeatedly claimed to the international community that it was a "nuclear weapons state."[26] In March 2013, North Korea adopted the "new strategic line" (so-called "Byungjin line") policy of simultaneous economic and nuclear development. At the Seventh KWP Congress and also in the "New Year's Address" of January 2018, it made clear that it would remain steadfast to this policy. At the Plenary Meeting of the Central Committee of the KWP in April 2018, in addition to declaring the "Byungjin line" was successfully carried out, North Korea declared that among other things, it had determined to "concentrate all efforts on building a powerful socialist economy and markedly improving the standard of people's living through the mobilization of all human and material resources of the country."

With regard to the issue of North Korea's development of nuclear weapons, recently, at the first-ever U.S.-North Korea summit meeting held on June 12, 2018, Chairman Kim Jong-un made clear his intention to work towards the complete denuclearization of the Korean Peninsula, and confirmed that negotiations would continue with the United States. Furthermore, in Pyongyang Joint Declaration of September 2018 that was agreed upon at the inter-Korean summit on September 19, 2018, North Korea expressed its intention to permanently close the nuclear facilities in Yongbyon if the United States takes corresponding measures. In addition, in his "New Year's Address" in 2019, Chairman Kim Jong-un expressed his intention to neither make and test nuclear weapons any longer nor use and proliferate them.[27] However, Chairman Kim is presumed to have done so on the premise that North Korea would continue to possess a nuclear arsenal. Moreover, North Korea has repeatedly insisted that it will not agree to unilateral denuclearization. In addition, it has been noted that even after announcing a commitment to full denuclearization of the Korean Peninsula, North Korea has continued nuclear development[28] and that a uranium enrichment facility not disclosed by North Korea exists.

In light of the above, it is now necessary to keep a close watch on what kind of concrete actions it will take towards the dismantlement of all weapons of mass destruction and all ballistic missiles of all ranges in a complete, verifiable and irreversible manner.

(2) Biological and Chemical Weapons

North Korea is an extremely closed regime. In addition, most materials, equipment, and technology used for manufacturing biological and chemical weapons are for both military and civilian uses, which in turn facilitates camouflage. For these reasons, details of the status of North Korea's biological and chemical weapons development and arsenals are unclear. However, with regard to chemical weapons, North Korea is suspected to have several facilities capable of producing chemical agents and already a substantial stockpile of such agents. North Korea is also thought to have some infrastructure for the production of biological weapons.[29] Possession of sarin, VX, mustard and other chemical weapons, and of anthrax, smallpox, pest and other biological agents that could be used as biological weapons have been

23 U.S. DoD's "Military and Security Developments Involving the Democratic People's Republic of Korea," February 2016.

24 For example, a statement issued by the National Defense Commission of the Democratic People's Republic of Korea on March 14, 2014, alleges that the United States threatens and intimidates North Korea with nuclear strikes, and that North Korea has come to possess nuclear deterrence out of necessity in order to protect the autonomy of its nation and people.

25 For example, a comment in the Rodong Sinmun dated December 2, 2013, contends that the situation in Iraq and Libya teaches an acute lesson that countries under the constant threat of U.S. preemptive nuclear attack have no choice but to become a victim of U.S. state terrorism, unless the countries have powerful deterrent capability. In addition, the "Statement by the Spokesperson of the Foreign Ministry of the Democratic People's Republic of Korea" dated April 8, 2017, states with regard to the U.S. attack on Syria two days earlier on April 6 as follows: "Swaggering as a superpower, the US has been picking only on countries without nuclear weapons and the Trump administration is no exception."

26 North Korea announced in 2005 that it manufactured nuclear weapons, and declared itself a "nuclear weapons state" in 2012 in its revised constitution. In April 2013, after conducting its third nuclear test in February, North Korea adopted the Law on Consolidating the Position of Self-Defensive Nuclear Weapons State. During the Seventh KWP Congress held in May 2016, KWP Chairman Kim Jong-un delivered a report on the work of the KWP Central Committee, setting out that North Korea was a "nuclear weapons state," and stating, "We will consistently take hold on the strategic line of simultaneously pushing forward the economic construction and the building of nuclear force and boost self-defensive nuclear force both in quality and quantity."

27 It has been noted that this argument is based on the premise that North Korea will continue to own nuclear weapons for the moment.

28 For example, the National Threat Assessment, released by the U.S. Director of National Intelligence in January 2019, pointed out as follows: "We continue to observe activity inconsistent with full denuclearization." In addition, the final report of the UN Security Council's Panel of Experts assisting the North Korea Sanctions Committee, released in March 2019, pointed out that nuclear facilities in Yongbyon were continuing to operate.

29 For example, the ROK Defense White Paper 2018 points out that, following the commencement of production in the 1980s, it is estimated that North Korea has a stock of 2,500-5,000 tons of various chemical weapons stored. It also notes that North Korea likely has the capability to produce a variety of biological weapons including anthrax, smallpox, and pests. Moreover, the U.S. DoD's "Military and Security Developments Involving the Democratic People's Republic of Korea" of May 2018 points out that, "North Korea probably could employ CW [chemical weapons] agents by modifying a variety of conventional munitions, including artillery and ballistic missiles." North Korea ratified the Biological Weapons Convention in 1987 but has not acceded to the Chemical Weapons Convention.

pointed out.[30]

The possibility cannot be denied that North Korea is able to load biological and/or chemical weapons on warheads.

(3) Ballistic Missiles

As is the case with WMDs, many of the details of North Korea's ballistic missiles are unknown, partly owing to the country's extremely closed regime. It appears, however, that North Korea gives high priority to the development of ballistic missiles out of political and diplomatic considerations and from the viewpoint of earning foreign currency,[31] in addition to enhancing its military capabilities. The ballistic missiles currently deemed to be possessed and developed by North Korea are the following.[32]

See Fig. I-2-3-2 (Ballistic Missiles developed/Possessed by North Korea)
Fig. 1-2-3-3 (Range of North Korea's Ballistic Missiles (image))
Fig. I-2-3-4 (Ballistic Missile Launches by North Korea to Date)

a. Types of Ballistic Missiles Possessed or Developed by North Korea

(a) Toksa

Toksa is a short-range ballistic missile with a range estimated to be approximately 120 km. It is mounted on a TEL. It is deemed that Toksa is the first ballistic missile possessed or developed by North Korea which adopts a solid fuel propellant.[33]

(b) Scud

The Scud is a liquid fuel propellant single-stage ballistic missile and is transported and operated on a TEL.

Scud B and Scud C, a variant of Scud B with extended range, are short-range ballistic missiles with ranges estimated to be about 300 km and 500 km, respectively. It is believed that North Korea has manufactured and deployed them, and has exported them to the Middle East and other countries.

The Scud ER (Extended Range) is a ballistic missile that has an extended range due to the extension of the Scud's body as well as the reduction in weight of the warhead, among other factors. The range of a Scud ER is estimated to reach approximately 1,000 km, and it appears that a part of Japan falls within this range.

In addition, North Korea is developing a ballistic missile that appears to be an improvement of the Scud missile. This ballistic missile was launched on May 29, 2017, and is presumed to have flown approximately 400 km and fallen into Japan's exclusive economic zone (EEZ). A day after the launch, North Korea announced that it had successfully conducted a test launch of a newly developed ballistic rocket incorporating a precision navigation guidance system. In addition, while the images released by North Korea show that the ballistic missile was launched from a continuous track TEL and had what appears to be small wings[34] on its

KEY WORD

Transporter-Erector-Launcher (TEL)

The signs of a launch from a fixed launcher are easy for the adversary to detect and are vulnerable to attack by the adversary. TEL was developed mainly by the former Soviet Union among others in order to make the detection of launch signs more difficult and increase survivability. According to the U.S. DoD's "Military and Security Developments Involving the Democratic People's Republic of Korea" of May 2018, North Korea possesses a maximum of 100 TELs for Scuds, 50 TELs for Nodongs, and 50 TELs for IRBMs (Musudans).

The type of TEL differs according to the length and weight of the ballistic missile. The Scud, Nodong and Musudan are mounted on a four-, five-, and six-axle wheel drive TEL respectively. The new type of intercontinental-range ballistic missile launched on July 4 and 28, and the KN-08/14 are mounted on an eight-axle wheel-drive TEL, and the intercontinental-range ballistic missile believed to be a new type that was launched on November 29 appears to have been mounted and transferred on a nine-axle wheel-drive TEL. The ballistic missile modified from the SLBM launched on February 12 and May 21, and the ballistic missile modified from the Scud missile launched on May 29 of the same year appear to have been launched from a continuous track TEL. Generally, a continuous track TEL is adapted to operating on uneven ground but is not adapted to long distance transportation compared to the wheel-drive TEL.

As for a TEL-mounted missile launch, it is deemed difficult to detect individual specific signs in advance concerning the detailed location and timing of the launch. This is because it is operated by being mounted and transported on a TEL, and furthermore, military-related underground facilities are thought to exist nationwide.

Along with activities related to the development of ballistic missiles, developments related to the building of TELs require close watch as they concern the operational capabilities of ballistic missiles by North Korea.

30 In principle, the ballistic missile defense system is also used to handle ballistic missiles carrying biological or chemical weapons. With regard to the damage on the ground in the case where a ballistic missile carrying a biological or chemical weapon is destroyed by a Patriot missile PAC-3, etc., there is no single answer to the question since the damage varies according to the various conditions such as the type, performance, intercepted altitude and speed of the ballistic missile, and the weather. However, in general terms, the biological or chemical weapon will likely be neutralized by the heat, etc. at the time of the destruction of the ballistic missile, and even if it retains its potency it will disperse during the freefall stage. Thus, it is believed that the ballistic missile will be unable to demonstrate its prescribed effectiveness.

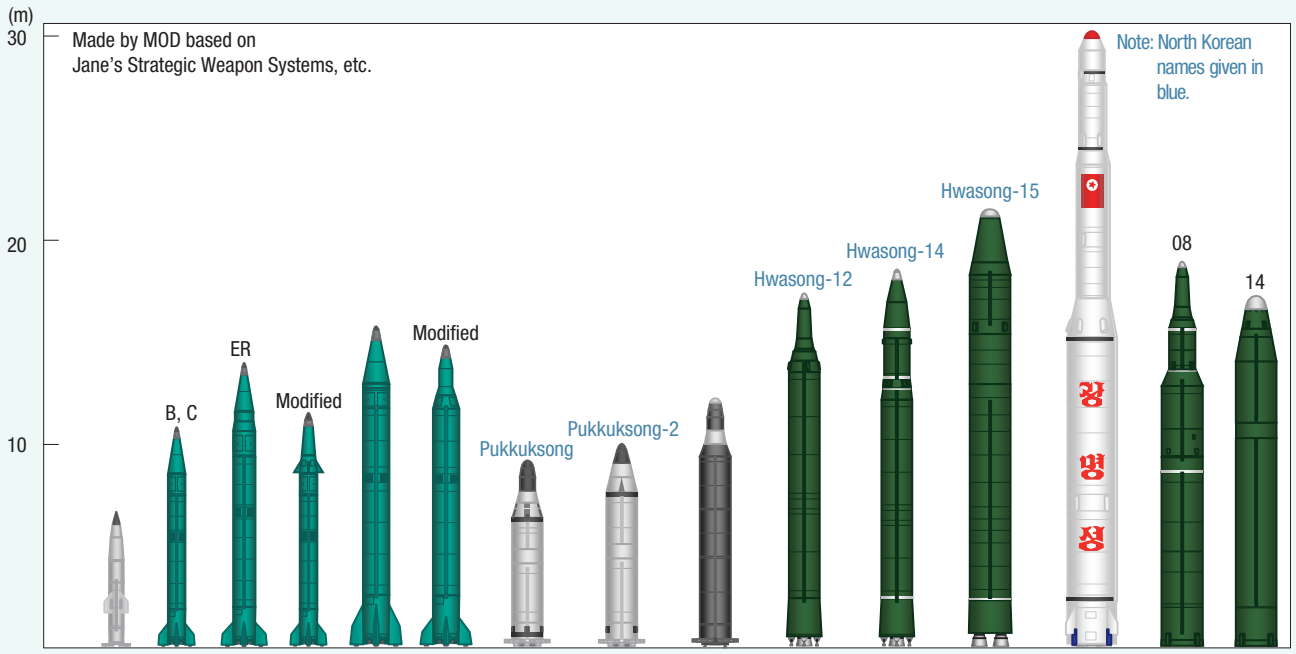
31 North Korea admitted that it is exporting ballistic missiles to earn foreign currency. (Comment by the Korean Central News Agency on June 16, 1998, and statement made by a North Korean Foreign Ministry spokesperson on December 13, 2002) At the same time, it is pointed out that North Korea's ballistic missile exports have been set back by increasing pressure from the international community.

32 According to "Jane's Sentinel Security Assessment China and Northeast Asia" (accessed in May 2018) North Korea possesses 700 to 1,000 ballistic missiles in total, 45% of which are presumed to be Scud-class, 45% Nodong-class, and the remaining 10% other intermediate- and long-range ballistic missiles.

33 A small vehicle-mounted missile that was displayed in a military parade in February 2018 is said to be a new type of short-range ballistic missile propelled by solid fuel.

34 It is generally said that small wings on the warhead have the functions of stabilizing aerodynamics, navigating during flight, and enhancing precision.

Fig. I-2-3-2 Ballistic Missiles developed/Possessed by North Korea

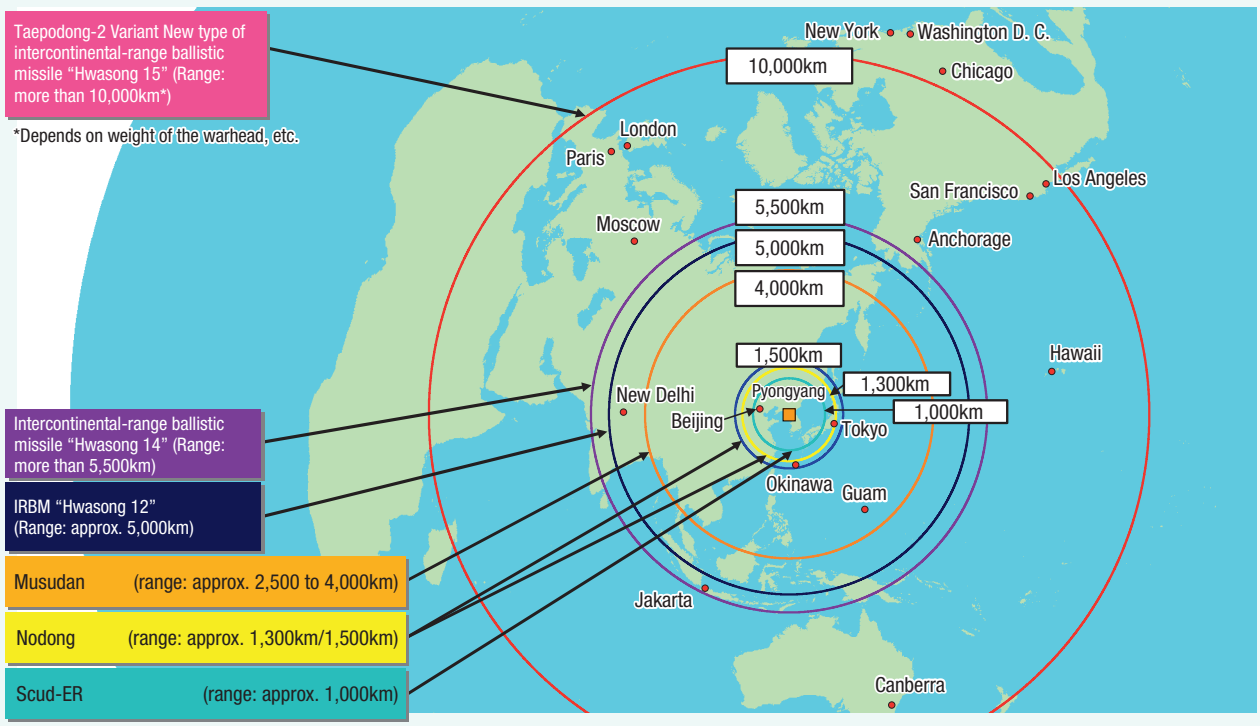


	Toksa	Scud B, C, ER, Modified	Nodong Modified	SLBM	SLBM modified for ground launch	Musudan	IRBM-class	ICBM-class	New type, ICBM-class	Taepodong-2 variant	KN-08/KN-14
Range	approx. 120 km	Approx. 300 km/ Approx. 500 km/ Approx. 1,000km/ Under analysis	Approx. 1,300 km/ Approx. 1,500 km	1,000 km or more	1,000 km or more	Approx. 2,500-4,000 km	Approx. 5,000 km	5,500 km or more	10,000 km or more*	10,000 km or more	5,500 km or more (ICBM reportedly)
Fuel	Solid	Liquid	Liquid	Solid	Solid	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid
Operation platform	TEL	TEL	TEL	submarine	TEL	TEL	TEL	TEL	TEL	launch site	TEL

Note: Regarding short-range ballistic missiles launched by North Korea on May 4, May 9, July 25, August 6, and August 24, 2019, analyses are now being conducted.

* Based on warhead weight, etc.

Fig. I-2-3-3 Range of North Korea's Ballistic Missiles (image)



Note 1: The figure above shows a rough image of the distance each missile can reach from Pyongyang for the sake of convenience.
Note 2: Quotation marks indicate the names used by North Korea.

Fig. I-2-3-4 Ballistic Missile Launches by North Korea to Date

2015 and earlier

Date	Presumed type of missile	Number of launches	Location	Flight distance
1993.05.29	Nodong (possible)	Unknown	Unknown	Approx. 500 km
1998.08.31	Taepodong-1	1	Taepodong Area	Approx. 1,600 km
2006.07.05	Scud and Nodong	6	Kittaeryong Area	Approx. 400 km
2006.07.05	Taepodong-2	1	Taepodong Area	Unknown, presumed to have failed
2009.04.05	Taepodong-2 or variant	1	Taepodong Area	3,000 km or more
2009.07.04	Scud and Nodong	7	Kittaeryong Area	Maximum approx. 450 km
2012.04.13	Taepodong-2 or variant	1	Tongch'ang-ri Area	Unknown, presumed to have failed
2012.12.12	Taepodong-2 variant	1	Tongch'ang-ri Area	Approx. 2,600 km (second stage landfall)
2014.03.03	Scud	2	Near Wonsan	Approx. 500 km
2014.03.26	Nodong	2	Near Sukchon	Approx. 650 km
2014.06.29	Scud	2	Near Wonsan	Approx. 500 km
2014.07.09	Scud	2	Approx. 100 km south of Pyongyang	Approx. 500 km
2014.07.13	Scud	2	Near Kaesong	Approx. 500 km
2014.07.26	Scud	1	Approx. 100 km west of Haeju	Approx. 500 km
2015.03.02	Scud	2	Near Nampo	Approx. 500 km

2016

Date	Presumed type of missile	Number of launches	Location	Flight distance
2016.02.07	Taepodong-2 variant	1	Tongch'ang-ri Area	Approx. 2,500 km (second stage landfall)
2016.03.10	Scud	2	Near Nampo	Approx. 500 km
2016.03.18	Nodong	1	Near Sukchon	Approx. 800 km
2016.04.15	Musudan (indicated)	1	East coast area	Unknown, presumed to have failed
2016.04.23	SLBM "Pukkuksong"	1	Off the coast of Sinpo	Approx. 30 km (ROK Joint Chiefs of Staff)
2016.04.28	Musudan	2	Near Wonsan	Unknown, presumed to have failed
2016.05.31	Musudan (possible)	1	Near Wonsan	Unknown, presumed to have failed
2016.06.22	Musudan	2	Near Wonsan	First: Approx. 100 km (maximum); Second: Approx. 400 km
2016.07.09	SLBM "Pukkuksong"	1	Off the coast of Sinpo	A few kilometers (ROK media reports)
2016.07.19	Scud and Nodong	3	Near Hwangju	First: Approx. 400 km; Third: Approx. 500 km
2016.08.03	Nodong	2	Near Unnyul	Approx. 1,000 km (the first exploded right after launch)
2016.08.24	SLBM "Pukkuksong"	1	Near Sinpo	Approx. 500 km
2016.09.05	Scud ER	3	Near Hwangju	Approx. 1,000 km
2016.10.15	Musudan	1	Near Kusong	Unknown, presumed to have failed
2016.10.20	Musudan	1	Near Kusong	Unknown, presumed to have failed

2017

Date	Presumed type of missile	Number of launches	Location	Flight distance
2017.02.12	Ground-launched ballistic missile modified from SLBM "Pukkuksong-2"	1	Near Kusong	Approx. 500 km
2017.03.06	Scud ER	4	Tongch'ang-ri Area	Approx. 1,000 km
2017.03.22	Under analysis	1	Near Wonsan	Exploded within seconds of launch, presumed to have failed
2017.04.05	Under analysis	1	Near Sinpo	Approx. 60 km
2017.04.16	Under analysis	1	Near Sinpo	Exploded right after launch, presumed to have failed
2017.04.29	Under analysis	1	Near Pukchang	Fell inland approx. 50 km away, presumed to have failed
2017.05.14	IRBM-class "Hwasong-12"	1	Near Kusong	Approx. 800 km
2017.05.21	Ground-launched ballistic missile modified from SLBM "Pukkuksong-2"	1	Near Pukchang	Approx. 500 km
2017.05.29	Ballistic missile modified from Scud missile	1	Near Wonsan	Approx. 400 km
2017.07.04	ICBM-class "Hwasong-14"	1	Near Kusong	Approx. 900 km
2017.07.28	ICBM-class "Hwasong-14"	1	Near Mupyong-ri	Approx. 1,000 km
2017.08.29	IRBM-class "Hwasong-12"	1	Near Sunan	Approximately 2,700 km
2017.09.15	IRBM-class "Hwasong-12"	1	Near Sunan	Approximately 3,700 km
2017.11.29	New-type, ICBM-class "Hwasong-15"	1	Near Pyongsong	Approx. 1,000 km

2019

Date	Presumed type of missile	Number of launches	Location	Flight distance
2019.05.04	Short range ballistic missile	2	Hodo Peninsula	Approx. max. 250 km
2019.05.09	Short range ballistic missile	2	Near Kusong	1st: approx. 400 km, 2nd: approx. 250 km
2019.07.25	Short range ballistic missile	2	Hodo Peninsula	Approx. 600 km
2019.08.06	Short range ballistic missile	2	Near Kwail	Approx. 450 km
2019.08.24	Short range ballistic missile	2	Near Sondok	Approx. 350 to 400 km

* Quotation marks indicate the names used by North Korea.

Image publicly released by North Korea when it launched four Scud ERs (presumed) (March 2017) [Korean News Service/Jiji]

Image publicly released by North Korea when it launched a ballistic missile modified from the Scud missile (presumed) (May 2017) [AFP/Jiji]

warhead, i.e., characteristics different from those of existing Scud missiles, the shape other than the warhead and length are similar to existing Scud missiles. Another similarity is that it can be confirmed that the missile has straight-line exhausts characteristic of a liquid fuel-propelled engine. It has also been noted that this ballistic missile is equipped with a MaRV.[35] Given that North Korea announced that Chairman Kim Jong-un had ordered the development of ballistic missiles capable of precision attacks on enemy ships and other individual targets, the intent appears to be to enhance the accuracy of ballistic missile attacks.

(c) Nodong

The Nodong is a liquid fuel propelled single-stage ballistic missile and is transported and operated on a TEL. It is assessed to have a range of about 1,300 km, reaching almost all of Japan.

Although the details of Nodong's performance have not been confirmed, Nodong may not have the accuracy to carry out precise strikes on specific target installations, as this ballistic missile is likely based on Scud technology. However, it has been suggested that North Korea is working to increase the Nodong's accuracy. In this regard, it had been suggested that there is a type of Nodong aimed at enhancing accuracy by improving the shape of the warhead (whose range is deemed to reach approximately 1,500 km through the weight reduction of the warhead). Against this backdrop, the launch of this type of ballistic missile was confirmed for the first time in the images published by North Korea a day after the launch of one Scud and two Nodong missiles on July 19, 2016.

(d) Submarine-Launched Ballistic Missile (SLBM)

It has been suggested that North Korea is developing an SLBM and a new submarine which is designed to carry the SLBM (referred to by North Korea as "Pukguksong"). Since it announced in May 2015 through its media that it conducted a successful test launch of an SLBM, it has made public SLBM launches on four occasions.[36] Judging from the images and footage that it has made public so far, North Korea may have succeeded in operating the "cold launch system," in which the missile is ignited after it is ejected into the air. Moreover, in the launches in April and August 2016, it appears, based on observations such as the shape of the flame coming out of the missile and the color of the smoke, that the militarily superior solid fuel propellant system was adopted.[37]

A ballistic missile presumed to be an SLBM has been confirmed in flight in the direction of Japan, launched from the vicinity of Sinpo, on the east coast of North Korea, on August 24, 2016. The SLBM flew approximately 500 km. Considering that this was its first SLBM to fly approximately 500 km, the possibility cannot be denied that North Korea had striven to solve the problems through the preceding launches and achieved certain technological progress. Furthermore, it is predicted that the ballistic missile presumed to be the SLBM that was launched at this time flew on a somewhat higher than nominal trajectory. If it were launched on a nominal trajectory the firing range is expected to surpass 1,000 km.[38]

It is assessed that North Korea's SLBMs are launched from a Gorae-class submarine (displacement 1,500 tons).

35 For example, according to "Jane's Sentinel Security Assessment China and Northeast Asia" (accessed in May 2018), the launch on May 29, 2017, was presumed to have been the first launch of a short-range ballistic missile based on a Scud missile, equipped with a MaRV, suggesting that North Korea has made advances in its precision guidance systems.

36 On May 9, 2015, North Korea announced that it had succeeded in a test launch of an SLBM. On January 8, 2016, it released footage of an SLBM test launch that appears to be different from the one unveiled in May 2015. On April 24 and August 25, 2016, it again announced that it had succeeded in SLBM test launches. Moreover, the Ministry of Defense (MOD) predicts that North Korea also launched one ballistic missile presumed to be an SLBM on July 9, 2016, although North Korea has not made an announcement about the launches.

37 It has been pointed out that North Korea's SLBM is an improved version of the former Soviet Union's liquid fuel propelled SLBM "SS-N-6," similar to the Musudan.

38 According to the Korean Central Broadcasting Station on August 25, 2016, North Korea announced that this test launch "was successfully conducted without any negative effects on the safety of nearby countries" based on the "high-angle launch system," which presumably means a "lofted trajectory."

Image publicly released by North Korea when it launched a ballistic missile modified from the SLBM (presumed) (February 2017) [AFP/Jiji]

North Korea has one such submarine. It is also pointed out that North Korea seeks to develop a larger submarine to launch SLBMs.[39]

It is deemed that through developing the SLBM and a new submarine to carry it, North Korea intends to diversify its ballistic missile attack capabilities and improve survivability.

(e) Ballistic Missile Modified from the SLBM

North Korea launched a ballistic missile on both February 12 and May 21, 2017, both of which appeared to be a modified version of the SLBM for ground launch (referred to by North Korea as "Pukguksong-2"). This ballistic missile is estimated to have flown approximately 500 km on both occasions, on somewhat higher trajectories than normal. If it were launched on a nominal trajectory, the firing range is assessed to surpass 1,000 km. A day after the launch on February 12, North Korea named the ballistic missile that was launched "Pukguksong-2" and announced that it was developed as a ground-to-ground ballistic missile based on the results of the August 2016 SLBM launch. It also announced a day after the launch on May 21, 2017 that it had again successfully conducted the test launch of the Pukguksong-2 and that Chairman Kim Jong-un had authorized its "operational deployment." Moreover, the launch by a "cold launch system," in which the missile is ignited after it is ejected into the air from a continuous track TEL, and the characteristic radial exhausts of solid fuel propellant engines, can be confirmed from each of the images that North Korea released. It has the characteristics of appearing to be using "cold launch system" and solid fuel propellant engines in common with the SLBM. Given that North Korea has made references to its deployment for operational deployment, there is a possibility that North Korea will newly deploy a solid fuel propellant engine that includes Japan within its firing range.

(f) Intermediate-Range Ballistic Missile (IRBM)

To date North Korea has launched three liquid fuel-propelled IRBMs (referred to by North Korea as "Hwasong-12"). This ballistic missile was launched on May 14, 2017 and is presumed to have reached a height of over 2,000 km and flew a distance of approximately 800 km for about 30 minutes. Based on this flight pattern, it is presumed that the ballistic missile was launched on a lofted trajectory. Had it been launched on a nominal trajectory, the maximum firing range is assessed to be close to approximately 5,000 km. In addition, the straight-line exhausts characteristic of a liquid fuel propelled engine can be confirmed from the images released by North Korea a day after the launch, suggesting that the ballistic missile uses liquid fuel. On August 29 and September 15, 2017, single missiles of this class were launched and flew over Japan's territory in the vicinity of the Oshima Peninsula and Cape Erimo. The ballistic missile launched on August 29 flew at an altitude of approximately 550 km over Japanese territory, and is presumed to have flown a total distance of 2,700 km. The ballistic missile launched on September 15 is presumed to have flown over Japanese territory at an altitude of between 700 and 800 km, flying for a total distance of approximately 3,700 km. These launches were the first cases of North Korea launching what it calls ballistic missiles that flew over Japan's territory.

In view of their flight paths, these missiles appear to demonstrate a certain level of function as an IRBM. Also, the fact that missiles that overflew Japan were launched in succession in a short time period would suggest that North Korea is steadily improving its ballistic missile capabilities. Furthermore, although at the time of launches in May and August 2017 the missiles were confirmed to have been launched after being separated from the wheel-drive TEL, at the time of the September launch the missile was confirmed to have been launched while still attached to the wheel-drive TEL. Considering this point, together with North Korea's claims at the time of the launch that it was for the purposes of "confirming practical operational procedures" and "realize the potential of the 'Hwasong-12'" there is a possibility that North Korea is improving its practical operational capabilities.

In 2016 North Korea conducted repeated launches of an IRBM that is presumed to be the Musudan,[40] but although the missile launched in June flew for a certain distance on a lofted trajectory, the fact that there were two successive launch failures in October would suggest that there may still

39 Source: Jane's Fighting Ships 2018-2019

40 With a range of between 2,500 and 4,000 km, it has been suggested that all parts of Japan and Guam may fall within the Musudan's firing range. Similar to its Scud and Nodong counterparts, it is liquid fuel-propelled and is loaded onto a TEL to transport and operate. It has been noted that Musudan is a revamped version of the Russian SLBM SS-N-6 that North Korea acquired in the early 1990s.

Image publicly released by North Korea when it launched an IRBM (presumed) (September 15, 2017) [Korean News Service/Jiji]

be obstacles remaining towards the operationalization of the Musudan and that North Korea may be concentrating on the development and operationalization of the "Hwasong-12" as an IRBM instead.

(g) Intercontinental-Range Ballistic Missile (ICBM)

(Launched on July 4 and 28, 2017)

To date North Korea has launched two intercontinental-range ballistic missiles (ICBM) (referred to by North Korea as "Hwasong-14"). One such ballistic missile was launched on July 4, 2017, reaching a height well over 2,500 km, and is estimated to have flown approximately 40 minutes. It flew approximately 900 km and is estimated to have fallen into Japan's EEZ. Another missile that was launched on July 28 reached a height of well over 3,500 km, and is estimated to have flown approximately 45 minutes, covering a distance of approximately 1,000 km before falling into Japan's EEZ. From this flight pattern it is presumed that the two ballistic missiles were launched on a lofted trajectory. If they were to have been launched on a normal trajectory it is estimated that they would have a maximum range of at least 5,500 km. On July 4, the day of the launch, North Korea made an "important announcement,"[41] announcing that it had successfully conducted a test launch of a new type of ICBM. Furthermore, on the day following the July 28 launch, North Korea announced that the "nuclear bomb detonation device" had functioned normally, emphasizing that the safety of the warhead in an atmospheric reentry environment had been made maintained. This suggests that North Korea is aiming to operationalize long-range ballistic missiles.

Based on images released by North Korea, the ballistic missiles launched on July 4 and 28 have the following in common with the IRBM launched on May 14: (1) the engine system consists of one main engine and four auxiliary engines; (2) the shape of the lower part of the propulsion system is conical; and (3) the straight-line flame of liquid-propulsion systems can be confirmed.

Based on these facts and the respective ranges that can be estimated for the missiles, the possibility can be deduced that the ICBM that were launched on July 4 and 28 were developed on the basis of the new-type IRBM that had been launched on May 14.

Also based on images published by North Korea, it can be confirmed that the ballistic missiles that were launched on July 4 and 28 had been mounted on the wheeled eight-axle TEL similar to KN-08/14 (see (j) below). However, it can be confirmed from the images at the time of the launches that they were launched from simplified launch pads, not TELs. Furthermore, the images suggest that the missile was of two-stage construction.

(h) New Type of Intercontinental-Range Ballistic Missile

(Launched on November 29, 2017)

On November 29, 2017, North Korea launched a single missile that is presumed to have been a new type of intercontinental-range ballistic missile (referred to by North Korea as "Hwasong-15") different to the missiles described in (g) above. The missile reached a height of well over 4,000 km, and is estimated to have flown approximately 53 minutes, covering a distance of approximately 1,000 km before falling into Japan's EEZ. From this flight pattern it is presumed that the missile was launched on a lofted trajectory. On the day of the launch, North Korea made an "government statement," declaring that it had successfully conducted a test launch of the "Hwasong-15," a newly developed type of ICBM with the capability to strike all areas of the U.S. mainland, and asserting that it had now completed development of its state nuclear force.

The following points would suggest that this missile is a new type of intercontinental-range ballistic missile, different from the two ICBM launched in July 2017: (1) its flight distance and altitude; (2) the fact that North Korea announced the successful test launch of a new type of ICBM, the "Hwasong-15;" (3) the fact that the missile was deployed on a previously unseen nine-axle wheel-drive TEL; and (4) that the nose of the warhead was more rounded than previous missiles. In addition, according to images released by North Korea, the missile was of a two-stage design, and it can be confirmed that it was removed from the TEL prior to launch and that its straight-line exhausts are characteristic of a liquid fuel propelled engine.

Furthermore, based on the flight altitude, distance flown and released images, it can be assumed that this missile could have a range in excess of 10,000 km, depending on the weight

41 In addition to this announcement, the announcement that North Korea had succeeded in its first hydrogen bomb test (January 6, 2016) and the announcement that it had succeeded in the launch of the earth observation satellite Kwangmyongsong-4 (February 7, 2016) have been issued as "important announcements."

Image publicly released by North Korea when it launched an ICBM (presumed) (July 2017) [AFP/Jiji]

Image publicly released by North Korea when it launched an ICBM presumed to be a new type (November 2017) [AFP/Jiji]

of the warhead deployed, etc., thus renewing concerns over the increasing ranges of North Korea's ballistic missiles.

In addition, although the wheel-drive TELs possessed by North Korea are thought to be modified versions of Russian and Chinese TELs, it is noteworthy that North Korea has claimed to have developed its own TEL.

(i) Taepodong-2

Taepodong-2 are long-range ballistic missiles launched from fixed launch pads.[42] Taepodong-2 is believed to use in its first stage, four engines, each of which is developed based on the technologies of Nodong, and the same type of engine in its second stage. Its range is estimated to be approximately 6,000 km for the two-stage type, while the range of its three-stage variant can be more than approximately 10,000 km assuming that the weight of the warhead is not over approximately 1 ton. Taepodong-2 missiles and its variants have been launched a total of five times so far.

Most recently, in February 2016, North Korea conducted a launch of a missile disguised as a "satellite" from the Tongch'ang-ri district in the northwest coastline of North Korea using a Taepodong-2 variant, a type similar to that of the previous ballistic missile launch in December 2012, after notifying international organizations.[43] It is assessed that North Korea's long-range ballistic missiles' technological reliability had been advanced by this launch because it is estimated that (1) it successfully launched two similar types of ballistic missiles in a row; (2) the missile flew in almost the same way as the last launch; and (3) it put an object into orbit around the Earth.[44]

Accordingly, it is believed that these test launches of long-range ballistic missiles can contribute to the development of shorter-range missiles in such ways as increasing the range and payload capability and improving the circular error probability (CEP). Also, related technology such as the separation technology of multi-stage propelling devices and the technology of posture control and thrust modulation of long-range ballistic missiles can be applied to other middle-range and long-range ballistic missiles that North Korea is newly developing. Therefore, the launch may lead not only to the improvement of other types of its ballistic missiles including Nodong but also to the advancement of North Korea's entire ballistic missile program including the development of new ballistic missiles and diversification of attack measure.[45]

In Pyongyang Joint Declaration of September 2018 that was agreed upon at the inter-Korean summit in September 2018, North Korea announced that it will permanently dismantle the missile engine test site and launch platform in the Dongchang-ri district under the observation of experts from relevant countries. Regarding these facilities, it has been pointed out that some parts of the satellite launch platform has been rebuilt after the dismantlement.

(j) KN-08/KN-14

The details of the new missile "KN-08" which was

42 There is also Taepodong-1, which may have been a transitory product for the development of Taepodong-2. Taepodong-1 is assumed to be a two-stage, liquid fuel propellant ballistic missile with a Nodong used as its first stage and a Scud as its second stage. It is estimated to have a range of at least approximately 1,500 km. Taepodong-1 was launched from the Taepodong district on North Korea's northeastern coastline in 1998, and it is presumed that part of it flew over Japan and fell in to the Sanriku offshore waters.

43 The objects which were found to have washed ashore at a seashore in Tottori Prefecture in June 2016 were determined by the MOD to be parts of the fairing at the top end of the Taepodong-2 variant missile launched in February 2016. The fairing is partially different from the ones that are usually used by rocket developer countries such as the United States and European countries. Although the fairing is considered to possess the strength and heat resistance necessary for atmospheric entry, it was confirmed that weight reduction had not been thoroughly pursued.

44 Articles dated October 1 and July 29, 2014 published on the website (38 North) of the U.S.-Korea Institute at Johns Hopkins University in the United States point out that analyses of satellite images of the Tongch'ang-ri district show that the launch tower was raised to 55 meters, enabling launches of rockets up to 50 meters in height, larger than the Taepodong-2 variant (total height approx. 30 m) which was used in December 2012.

45 Furthermore, as launches from fixed launch pads are vulnerable to external attacks, North Korea may seek resiliency and survivability through building underground or silo launch facilities and launching from TELs.

showcased at the military parade in April 2012 and July 2013 are unknown. However, the missile is believed to be an ICBM.[46] At the military parade in October 2015, a new missile thought to be the "KN-08" was showcased with a different-shaped warhead from the previous version.[47] The new missile, considered a variant of the "KN-08," is called the "KN-14." The "KN-08" and "KN-14" are carried by a TEL, making it difficult to detect signs of their launch in advance, and is likely intended to increase survivability.

(k) Short-Range Ballistic Missiles, etc. Launched in 2019

North Korea launched short-range ballistic missiles presumed to be new types and others toward the Sea of Japan nine times in total during May, July and August 2019.

(1) Short-range ballistic missiles launched on May 4 and 9, July 25, and August 6, 2019

North Korea launched short-range ballistic missiles (North Korea referred them as "new type of tactical guided weapon") on May 4 and 9, July 25, and August 6. They are all presumed to have the same system, and are of a new and different type from existing missiles such as Nodong and Scud. On each day above, two missiles were launched, and flew approximately 200 to 600 km. Judging from the images released by North Korea, it can be confirmed that the missiles were launched from the wheel-drive or continuous track TEL. The characteristic radial exhausts of solid fuel propellant engines can also be confirmed from each image. In addition, the launched missiles have a shape similar to that of Russian short-range ballistic missile "Iskander," which can fly at a lower altitude than conventional ballistic missiles and on an irregular trajectory.

(2) Short-range ballistic missiles launched on August 24, 2019

North Korea launched two short-range ballistic missiles (North Korea referred them as "super-large multiple rockets launcher") on August 24, 2019. These missiles are of a new and different type from the above (1), and are presumed to fly approximately 350 to 400 km. Judging from the image released by North Korea, it can be confirmed that the missiles were launched from the wheel-drive TEL. The characteristic radial exhausts of solid fuel propellant engines can also be confirmed from the image.

(3) Projectiles launched on August 10 and 16, 2019

North Korea launched some projectiles on August 10 and 16, 2019. As their characteristics are different from the missiles launched so far, including their shape, the possibility that they might be a new type of short-range ballistic missiles different from the above (1) and (2) needs to be taken into account.

In addition, North Korea seems to have launched some kind of projectile on July 31 and August 2, 2019. In light of repeated launches, it is deemed that North Korea is promoting the sophistication of relevant technology and improvement of capabilities related to ballistic missiles, so it is necessary to continue to carefully monitor trends.

b. Major Trends in Ballistic Missile Launches

North Korea has repeatedly launched various types of ballistic missiles. In particular, since 2016 it has conducted as many as 50 ballistic missile launches, including launches of what appear to be new types of missiles.

As for trends in North Korea's ballistic missile launches, the following characteristics have been observed. Firstly, it appears that the country seeks to increase the firing range of ballistic missiles.[48] In February 2016, it launched a long-range ballistic missile (a Taepodong-2 variant) which was disguised as a "satellite," and in the same year repeatedly launched the Musudan, considered to have Guam in its range. As for the IRBM that was launched in 2017, it is expected to reach a maximum firing range of approximately 5,000 km. Furthermore, in July, ICBM were launched, followed by another intercontinental-range ballistic missile launch in November, which is considered to have been a new type of missile that could have a range in excess of 10,000 km, depending on the weight of the warhead deployed,etc.[49] Although it is considered necessary for the operationalization of long-range ballistic missiles to further verify technology for protecting the re-entry vehicle from the ultrahigh temperature that is generated during the atmospheric re-entry of the warhead part, North Korea announced in March 2016 that it had successfully conducted a "mock ballistic missile atmospheric re-entry environment test"[50] and announced that it had demonstrated atmospheric reentry technology for warheads at the time of the launch in July 2017. In addition, with announcements such as the one in November 2017 on the day of the launch of what is believed to have been an

46 The "Worldwide Threat Assessment" of the U.S. Director of National Intelligence of February 2015 notes that, "[North Korea] has publicly displayed its KN-08 road-mobile ICBM twice. We assess that North Korea has already taken initial steps towards fielding this system, although the system has not been flight-tested."

47 Jane's Defence Weekly dated October 13, 2015 notes that the "KN-08" showcased at the military parade on October 10, 2015 had a larger third stage than the earlier version, and therefore, could have an extended range. It also suggests that low quality ablative materials cannot withstand high temperatures during re-entry, and thus, a blunter shape warhead may have been developed to reduce speed to protect the warhead.

48 North Korea is thought to have started developing longer-range ballistic missiles by the 1990s, including Nodong.

49 KWP Chairman Kim Jong-un's January 2017 "New Year's Address" announced that the test launch of an ICBM had entered the final stage of preparation.

50 According to images released by North Korea, the aim of the test appears to be to conduct a test that simulates the high temperature that occurs during the atmospheric re-entry of the warhead by firing the engine of the ballistic missile at the test object installed on a fixed platform. Generally, it is difficult to recreate the circumstances of the atmospheric re-entry of the warhead by the emission from the engine alone. It is necessary to conduct technology verification by flight tests to conduct an accurate demonstration including the impact of the airflow, etc.

intercontinental-range ballistic missile, claiming that it had re-verified warhead reliability in a reentry environment,[51] North Korea is displaying an intention to seek to secure and enhance technology aimed at the operationalization of long-range ballistic missiles.[52]

Secondly, North Korea may be aiming to enhance the accuracy and operation capabilities necessary for saturation attacks with regard to ballistic missiles already deployed. As for the Scud and Nodong, which are already deployed, launches had been confirmed when Kim Jong-il was the Chairman of the National Defense Commission. Since 2014, they have been launched eastward from unprecedented locations in western North Korea, cutting across the Korean Peninsula, in the early morning and late hours of the night using TELs, often in multiple numbers. This indicates that North Korea is capable of launching Scuds and Nodongs from any place and at any time, from which it is deemed that it has increased confidence in the performance and reliability of its ballistic missiles.

As for Scuds and Nodongs, since 2016, there have been launches where it is presumed that warheads fell in Japan's EEZ, posing a major threat to Japan's security. The ballistic missile launched on August 3, 2016, that appears to be a Nodong flew approximately 1,000 km, with its warhead predicted to have fallen into the Japanese EEZ for the first time. The three ballistic missiles launched on September 5 of the same year, apparently Scud ERs, were launched simultaneously and are all estimated to have fallen in more or less the same place in Japan's EEZ after flying approximately 1,000 km. Moreover, the four ballistic missiles, apparently Scud ERs, launched on March 6, 2017, were launched simultaneously, three of which are predicted to have fallen within Japan's EEZ and the other near the EEZ, after flying approximately 1,000 km.

It is possible that through these launches, North Korea's intentions are not only research and development of ballistic missiles but also the enhancement of their operational capabilities. Since Chairman Kim Jong-un has repeatedly instructed the military troops to reject formality and conduct practical training, it can be considered that these instructions underpin the launches of ballistic missiles that have already been deployed.

North Korea also has claimed that a new type of ballistic missile which appears to have been modified from the Scud missile launched in May 2017 is a "ballistic missile that incorporates a precision navigation guidance system," and it has also been noted that this missile is equipped with a maneuverable re-entry vehicle (MaRV). It is deemed that North Korea is aiming to enhance the accuracy of attack by upgrading ballistic missiles that have already been deployed.

Thirdly, North Korea appears to be seeking to improve its ability to conduct surprise attacks by enhancing secrecy and instantaneity to make it difficult to detect signs of a launch. Using a TEL or submarine, a ballistic missile can be launched from any point, making it difficult to detect signs of a launch in advance. North Korea has repeatedly launched ballistic missiles from TELs and SLBMs. In addition, the SLBMs repeatedly launched in 2016 and the ballistic missile presumed to be modified from the SLBM as a ground-launched type and launched in February and May 2017 appear to use solid fuel. It is thus possible that North Korea is proceeding with the development of solid-fueled ballistic missiles.[53] Generally solid fuel-propelled ballistic missiles are pre-loaded with solid fuel, and therefore, they can be launched instantly and the signs of their launch are more difficult to detect. Furthermore, they can be reloaded more quickly, and they are relatively easier to store and handle in comparison to liquid fuel-propelled missiles. In this respect, they are considered to be superior militarily. From these factors, North Korea is deemed to be aiming to enhance its surprise attack capabilities.

Fourthly, North Korea may be attempting to diversify the forms of launches. It has been confirmed that at the June 22, 2016, Musudan launch and the May 14, July 4, July 28, and November 29, 2017, launches of the ballistic missile, so-called lofted trajectories, in which missiles are launched at higher angles than nominal to high altitudes, were utilized. Generally, when a launch is made on a lofted trajectory, interception is considered to be more difficult.

Should North Korea make further progress in the development of ballistic missiles, including the verification of reentry technologies, it may come to have a one-sided understanding that it has secured strategic deterrence against the United States. Should North Korea have such a false sense of confidence and recognition regarding its deterrence, this could lead to increases and the escalation of military provocations by North Korea in the region and could create situations that are deeply worrying also for Japan.

51 Further analysis is necessary to determine whether North Korea was able to demonstrate the warhead protection technology during atmospheric re-entry necessary for the operationalization of long-range ballistic missiles by the November 29, 2017, launch. In any case, by repeatedly launching ballistic missiles, North Korea is believed to be accumulating relevant technology.

52 North Korea announced the implementation of the ground test for a "new type of large-output generator (engine) for ICBMs" in April 2016, the implementation of the ground test for a new type of large-output generator (engine) for satellite-launch rocket launchers in September 2016, and the ground test for a new type of "large-output engine" in March 2017.

53 In addition, in images released together with reports by North Korean media about the visit of Chairman Kim Jong-un to the Chemical Material Institute of the Academy of Defense Science on August 23,. 2017, a panel could be seen featuring the name "Pukguksong-3," which, in view of the name "Pukguksong," has led some people to speculate that North Korea is developing a new type of solid fuel-propelled ballistic missile.

c. Future Outlook for Ballistic Missile Development

In his "New Year's Address" in January 2018, Chairman Kim Jong-un declared the historic accomplishment of perfecting the national nuclear forces, and called for "mass-production of nuclear warheads and ballistic missiles, the power and reliability of which have already been proved to the full, to give a spur to the efforts for deploying them for action." North Korea's development of long-range ballistic missiles has also been covered in other publications, including the 2018 Nuclear Posture Review (NPR) of the United States announced in February 2018, in which it was noted that "North Korea may now be only months away from the capability to strike the United States with nuclear-armed ballistic missiles." The Missile Defense Review (MDR), released in January 2019, noted that North Korea already possesses the capability to threaten the U.S. homeland with missile attack.

At the Plenary Meeting of the Central Committee of the KWP in April 2018, Chairman Kim Jong-un announced the suspension of ICBM test launches. Then, at the U.S.-North Korea summit meeting in June, he clearly expressed the intention to work towards denuclearization. On the other hand, as North Korea has done nothing more than announce the suspension of test-firing of intercontinental ballistic missiles, it has been noted that its nuclear and ballistic missile plans remain intact.[54]

Given these points, it will be necessary to continue to carefully monitor trends in North Korea's ballistic missile development program.

4 Domestic Affairs

(1) Developments Related to the Kim Jong-un Regime

After the demise of Chairman of the National Defense Commission Kim Jong-il in 2011, Kim Jong-un became the de facto head of the military, party, and the state by assuming the position of Supreme Commander of the KPA, First Secretary of the KWP, and First Chairman of the National Defense Commission by April 2012. The framework of the Kim Jong-un regime was laid out in a short period of time. Since the transition to the new regime, there has been a number of announcements of party-related meetings and decisions, and in May 2016, the Seventh KWP Congress was held for the first time since the last Congress in October 1980, 36 years earlier. These developments suggest that the state is run under the leadership of the party. At the Plenary Meeting of the Central Committee of the KWP in April 2018, Chairman Kim Jong-un expressed his intention to fully concentrate efforts on economic construction. In addition, at the Supreme People's Assembly in April 2019, Chairman Kim expressed his intention to continue to concentrate on economic development. For example, he emphasized the importance of economic independence and stated that North Korea will "solidify the material foundations of socialism by concentrating all national resources on economic construction".

Following the change in regime, Chairman Kim Jong-un has conducted frequent personnel reshuffles, including reshuffles of the top three military posts of the Director of the General Political Bureau, the Chief of the General Staff, and the Minister of the People's Armed Forces. In turn, individuals whom Chairman Kim Jong-un selected were assigned to the key party, military, and cabinet posts. In addition, in December 2013, Jang Song-thaek, Vice-Chairman of the National Defense Commission and Chairman Kim Jong-un's uncle, was executed for "plotting to overthrow the state." It is believed that through such measures, the Chairman endeavors to strengthen and consolidate a monolithic leadership system.[55] Meanwhile, the North Korean media began to report the activities of Chairman Kim Jong-un's younger sister, Kim Yo-jong, as a senior member of the KWP.[56] She also attended meetings such as inter-Korean summit meetings.

At the KWP Congress held in May 2016, Kim Jong-un was named to the new post of KWP Chairman. In his report on the work of the KWP Central Committee, the Chairman set out that North Korea was a "nuclear weapons state," and said the country would consistently uphold the "Byungjin line" policy of economic development and the building of nuclear force as well as further boost its self-defensive nuclear force both in quality and quantity. In this manner, the Chairman demonstrated, both to those in and outside of the country, North Korea's readiness to continue with its nuclear and missile development. Prior to the Congress, North Korea conducted provocations at unprecedented frequency and content, including the launch of ballistic missiles.

54 Regarding North Korean ballistic missiles, the final report of the UN Security Council's Panel of Experts assisting the North Korea Sanctions Committee, released in March 2019, pointed out that North Korea has a consistent tendency to disperse its assembly, storage and test locations.

55 Following the execution of Jang Song-thaek, Vice-Chairman of the National Defense Commission, the North Korean media repeatedly calls for the strengthening of the "monolithic leadership system" and "single-minded unity." For example, an editorial in the Rodong Sinmun dated January 10, 2014, urged the people to stay cautious even of trivial phenomena and elements which erode North Korea's single-minded unity. In May 2015, it was suggested that Hyon Yong-chol, Minister of the People's Armed Forces, may have been executed on charges of treason. In July 2015, the North Korean media introduced Pak Yong-sik, previous Deputy Director of the General Political Bureau of the Korean People's Army, with the title, Minister of the People's Armed Forces.

56 According to the Korean Central Broadcasting Station, Kim Yo-jong was elected a member of the KWP Central Committee at the KWP Congress held in May 2016. At the Second Plenum of the Seventh KWP Congress in October 2017, Kim Yo-jong was elected as an alternate member of the Political Bureau of the Central Committee.

The holding of the KWP Congress may be an indication that North Korea has shifted into high gear by establishing the state-run governance system centered on the party and led by KWP Chairman Kim Jong-un, in terms of its organization, personnel, among other dimensions, both in name and in substance.[57] At the Supreme People's Assembly session convened in June 2016, it was decided that the National Defense Commission would be turned into the State Affairs Commission, and KWP Chairman Kim Jong-un was named Chairman of the State Affairs Commission, the new "highest position" of the "state" replacing First Chairman of the National Defense Commission. These changes are also likely to be manifestations of the governance system moving into full swing.[58] Furthermore, Chairman Kim pointed out that the role of the party organization should be decisively enhanced in order to implement the "new strategic line," which fully concentrates efforts on economic construction. This indicates that the importance of the party in politics continues to grow. However, with senior officials unable to dispute the decisions of Chairman Kim Jong-un due to an atrophy effect created by the frequent executions, demotions, and dismissals of senior officials, it is believed that there is growing uncertainty, including over the possibility of North Korea turning to military provocations without making adequate diplomatic considerations. In addition, it has been suggested that there is declining social control caused by widening wealth disparities and information inflow from other countries. In this regard, attention will be paid to the stability of the regime.

(2) Economic Conditions

In the economic domain, North Korea has been facing chronic stagnation and energy and food shortages in recent years due to the vulnerability of its socialist planned economy and diminishing economic cooperation with the former Soviet Union and East European countries following the end of the Cold War. Especially for food, it is deemed that North Korea is still forced to rely on food assistance from overseas.[59] Following North Korea's various provocations including the nuclear test in January 2016 and launch of a ballistic missile disguised as a "satellite" in February 2016, the ROK decided to completely suspend operations at the Kaesong Industrial Complex, which makes up over 99% of inter-Korean trade. Furthermore, the strengthening of sanctions by countries including Japan and the United States, and the sanctions of the related UN Security Council resolutions in response to the implementation of nuclear tests and missile launches can be assumed to have had a certain effect, when considered together with the severe economic situation of North Korea. Accordingly, if China, North Korea's largest trading partner, and other relevant countries continue to rigorously implement sanctions an even more severe economic situation could beset North Korea.

To tackle a host of economic difficulties, North Korea has made attempts at limited improvement measures and some changes to its economic management systems,[60] and promotes the establishment of economic development zones[61] and the enlargement of the discretion of plants and other entities over production and sales plans.[62] Furthermore, at the Plenary Meeting of the Central Committee of the KWP in April 2018, in addition to declaring the "Byungjin line" was successfully carried out, North Korea declared that among other things, it had determined to "concentrate all efforts on building a powerful socialist economy and markedly improving the standard of people's living through the mobilization of all human and material resources of the country." These all suggest that North Korea is placing importance on rebuilding its economy. Nonetheless, North Korea is unlikely to carry out any structural reforms that could lead to the destabilization of its current ruling system, and thus, various challenges confront the fundamental improvement of its current economic situation.

North Korea is presumed to be evading the UN Security Council sanctions by conducting ship-to-ship transfers in the

57 Elections for members and alternate members of the KWP central leadership agencies (e.g., KWP Central Committee and KWP Politburo) were held during the KWP Congress. Pak Pong-ju, Premier, and Choe Ryong-hae, KWP Secretary (the title was changed from KWP Secretary to Vice Chairman of the KWP Central Committee at the KWP Congress), were newly elected as KWP Politburo Standing Committee members to form a five-member Standing Committee including: Kim Jong-un, KWP Chairman; Kim Yong-nam, President of the Presidium of the Supreme People's Assembly; and Hwang Pyong-so, Director of the General Political Bureau. None of the five members of the KWP Politburo Standing Committee are genuine military personnel. Furthermore, the ranks of military personnel have fallen within the KWP Politburo, and Premier Pak Pong-ju has been added as a member of the KWP Central Military Commission. It is pointed out that these aspects show that a KWP-led governance system is shifting into high gear.

58 After the Supreme People's Assembly session in June 2016, the media introduced the "Minister of the People's Armed Forces," who is considered equivalent to the minister of defense, as the "Minister (Secretary) of the People's Armed Forces," raising the possibility that the Ministry of the People's Armed Forces has been reorganized into the Ministry (Department) of the People's Armed Forces.

59 In a report released in December 2018, the Food and Agriculture Organization of the United Nations (FAO) classified North Korea as a country requiring external assistance for food and cited a shortage of agricultural machinery and fertilizer as a factor preventing North Korea from resolving its food shortage.

60 For example, North Korea conducted a currency revaluation (decreasing the denomination of its currency) at the end of 2009. The currency revaluation led to economic disorder, such as price escalation due to shortfall of supply, which in turn increased social unrest.

61 During the plenary meeting of the KWP Central Committee on March 31, 2013, KWP Chairman Kim Jong-un instructed the establishment of economic development zones in each province. Pursuant to these instructions, the Economic Development Zone Law was enacted in May of that year. To date, 21 economic development zones have been established.

62 While the details of the policy are not necessarily clear, it is understood that in the industrial sector, entities would be able to independently make production decisions and conduct sales outside the scope of the national plan, as well as determine employee remuneration and benefits based on the situation of the entities. In the agriculture sector, an autonomous business system would be introduced at the household level. It has been said that 1,000 pyeong (1 pyeong = approx. 3.3 m2) of land would be allocated per person, with 40% of the agricultural products going to the state and 60% going to individuals.

high seas, which are forbidden under the terms of the UN Security Council resolutions.[63] The final report of the UN Security Council's Panel of Experts assisting the North Korea Sanctions Committee, released in March 2019, pointed out that illegal ship-to-ship transfers of oil products and coal by North Korea were increasing rapidly.

See Fig. I-2-3-5 (Sanctions based on UN Security Council Resolutions against North Korea)

5 Relations with Other Countries

(1) Relations with the United States

The U.S. Trump administration announced that it would deal with North Korea's nuclear and missile issue based on the concept of "all options are on the table" and adopted the policy of exerting pressure on North Korea to abandon plans to develop and proliferate nuclear weapons and missiles by strengthening economic sanctions and diplomatic measures. In response, North Korea repeated its previous assertions that developing its own nuclear deterrent capability was necessary in order to respond to the nuclear threat posed by the United States, and continued to engage in provocative rhetoric and behavior,[64] coupled with military provocations such as ballistic missile launches.[65]

In June 2018, the historic first-ever U.S.-North Korea summit meeting was held and both sides confirmed that they would join their efforts to build a lasting and stable peace regime on the Korean Peninsula. Chairman Kim Jong-un made clear his intention to work towards the complete denuclearization of the Korean Peninsula, and confirmed that negotiations would continue with the United States. Later, in July 2018, Secretary of State Pompeio visited North Korea and held a working-level meeting. Secretary Pompeio visited North Korea again in October of the same year, held a meeting with Chairman Kim, and discussed a second U.S.-North Korea summit meeting. In addition, Chairman Kim invited inspectors to visit a nuclear test ground that North Korea blew up in public in May 2018. Thus, the U.S.-North Korea negotiations continued. Moreover, in order to support the U.S.-North Korea diplomatic process, the United States took such measures as cancelling regular U.S.-ROK joint military exercises, including the Freedom Guardian exercise, which was scheduled for August 2018, and the Vigilant Ace exercise, which is usually held in November-December. On the other hand, North Korea has repeatedly insisted that it cannot accept the United States' demand for unilateral denuclearization and that the U.S. side should also take "corresponding measures." North Korea is also calling for the relaxation of the sanctions based on the Security Council resolutions.

The second U.S.-North Korea summit meeting in February 2019 ended without any agreement being reached between the two countries. At the Supreme People's Assembly in April 2019, Chairman Kim Jong-un indicated his stance of continuing dialogue with the United States for a while. For example, he stated that he was ready to hold a third U.S.-North Korea summit meeting on the condition that the United States find out "with a proper attitude a methodology that can be shared with us" and that North Korea would wait for a courageous decision from the U.S. till the end of this year.

In addition, when President Trump visited the ROK in June 2019, he met the leader of North Korea at Panmunjom, and they agreed to proceed with dialogue at the working level. However, no concrete progress has yet been observed in the North Korea's dismantlement of weapons of mass destruction and missiles.

(2) Relations with the Republic of Korea

The administration of President Moon Jae-in inaugurated in May 2017 has expressed its position on North Korea that, while putting emphasis on inter-Korean relations through dialogue, it also indicated a stance of responding resolutely through sanctions and pressure to provocations by North Korea. In fact, in December 2017, the Moon administration announced a new set of ROK sanctions against North Korea. North Korea also continued to engage in repeated provocative rhetoric and behavior against the ROK, including a statement in October that if war were to break out on the Korean Peninsula, the entire ROK would be reduced to ashes. These events caused inter-Korean tensions to rise.

On the other hand, in his "New Year's Address" in January 2018, Chairman Kim Jong-un indicated North Korea's desire to participate in the 2018 PyeongChang Winter Olympic Games and demonstrated a willingness to improve inter-Korean relations. Following this, preparations were made for North Korea to participate in the Winter Olympic Games. During the Games, Kim Yo-jong visited the ROK, which

63 Between the beginning of 2018 and the end of June 2019, MSDF patrol aircraft have observed 20 cases in which a North Korean-flagged tanker and a foreign-flagged vessel were anchored side-by-side in the high seas. As a result of comprehensive judgment by the government, there are strong suspicions that the observed vessels were engaging in illegal ship-to-ship transfers. For details of these cases and information about Japan's response, see Part III, Chapter 1, Section 2.

64 For example, on August 8, 2017, a spokesperson for the KPA Strategic Rocket Forces announced that North Korea was carefully examining the operational plan for making an enveloping fire in the areas around Guam with its "medium- to long-range strategic ballistic rocket Hwasong-12." In addition, in a statement by the Chairman of the State Affairs Commission on September 22, Chairman Kim Jong-un noted that he was "giving serious consideration to exercising the highest level of hardline countermeasures in history."

65 On this point, Rodong Sinmun dated March 24, 2017 states that "our Strategic Forces have also routinized ballistic rocket launch exercises" in response to the U.S.-ROK joint exercise.

Fig. I-2-3-5 Sanctions based on UN Security Council Resolutions against North Korea

Main content

Items	Sanction content	Related resolution
Crude oil	Restriction of annual supply to 4 million barrels or 525,000 tons	No. 2397 (December 2017)
Petroleum refi ned products	Restriction of annual supply to 500,000 barrels	No. 2397 (December 2017)
Coal	Total ban on imports from North Korea	No. 2371 (August 2017)
Ship offloading	Banned	No. 2375 (September 2017)

Summary of recent UN Security Council resolutions on sanctions against North Korea

Date	Resolution	Catalyst event	Main content
2006.7.16	No. 1695	Seven ballistic missile launches (2006/7/5)	Request transfer prohibition on related goods and funds for nuclear and missile plans
2006.10.15	No. 1718	First nuclear test (2006/10/9)	Prohibition on export and import of weapons of mass destruction related goods and large weapons
2009.6.13	No. 1874	Taepodong 2 launch (2009/4/5), second nuclear test (2009/5/25)	Adoption of financial regulations
2013.1.23	No. 2087	Taepodong 2 launch (2012/12/12)	Addition of six organizations and four individuals to sanctions
2013.3.8	No. 2094	Third nuclear test (2013/2/12)	Tougher financial regulations and obligation to conduct inspections of goods on ships suspected of transporting banned goods within one's own territorial waters
2016.3.3	No. 2270	Fourth nuclear test (2016/1/6), Taepodong 2 launch (2016/2/7)	Ban on air fuel exports and supply and ban on coal and iron ore exports by North Korea (excluding those for personal livelihood or unrelated to North Korea's nuclear and missile plans)
2016.11.30	No. 2321	Fifth nuclear test (2016/9/9)	Establishment of an upper limit on coal exports to North Korea (roughly $400 million/7.5 million tons a year)
2017.6.3	No. 2356	Ballistic missile launches since 2016/9/9	Addition of four organizations and 14 individuals to sanctions
2017.8.6	No. 2371	Intercontinental-range ballistic missile launch (2017/7/4 and 7/28)	Total ban on coal imports, total ban on iron and iron ore imports, and establishment of an upper limit on the total number of work permits for North Korean workers for the first time
2017.9.12	No. 2375	Sixth nuclear test (2017/9/3)	Addition of oil to supply restrictions for the first time, addition of textile products to the import ban, and ban on work permits for overseas workers
2017.12.23	No. 2397	New type of intercontinental-range ballistic missile launch (2017/11/29)	Further supply restrictions in the oil area, expansion of the scope of bans on trade (exports/imports) with North Korea bans, and return of North Korean workers to North Korea

was followed by a meeting in March between a delegation headed by a special envoy from the ROK and Chairman Kim Jong-un,[66] which served to facilitate preparations for the inter-Korean summit meeting. The inter-Korean summit meeting was held in April, resulting in the issuance of the Panmunjom Declaration, which confirmed among other matters that the two countries agreed to completely cease all hostile acts against each other in every domain, and confirmed the common goal of realizing, through complete denuclearization, a nuclear-free Korean Peninsula. In addition, in another inter-Korean summit meeting held in May, Chairman Kim Jong-un reiterated his desire for the complete denuclearization of the Korean Peninsula. Furthermore, at the inter-Korean summit meeting in September, Pyongyang Joint Declaration of September 2018, which referred to an ending of military hostilities, was issued. In addition, the "Agreement on the Implementation of the Historic Panmunjom Declaration in the Military Domain," which prescribed concrete measures to ease inter-Korean military tensions, was signed. In 2018, North and South Korea conducted activities related to the implementation of the measures[67] based on these documents. The Panmunjom Declaration also notes that the two countries will aim to declare an end to the Korean War,[68] and the Pyongyang Joint Declaration of September 2018 notes that Chairman Kim Jong-un will visit Seoul soon. Future developments in inter-Korean relations will be closely watched.

66 According to an announcement by the ROK, in the meeting North Korea agreed to hold an inter-Korean summit meeting at the end of April and establish a hotline between the two leaders. In addition, it was reported by the ROK that North Korea had indicated that it would have no reason to keep nuclear weapons if the military threat to the North was eliminated and its security guaranteed, that it was prepared to engage in dialogue with the United States towards denuclearization and with a view to normalizing relations, and that while dialogue is ongoing it would not resume provocations such as nuclear or missile tests. North Korea was also reported as expressing understanding for the regular U.S.-ROK joint military exercises.

67 According to an announcement by the ROK government, in October 2018, the demilitarization of the Joint Security Area in Panmunjom was completed based on the Agreement on the Implementation of the Historic Panmunjom Declaration in the Military Domain. Since November 1, 2018, such measures as the suspension of various military exercises (by both countries) around the DMZ and the establishment of a no-fly zone in airspace over the DMZ have been implemented. In addition, consultations are ongoing with respect to the activity of the Inter-Korean Military Committee, which will hold consultations on large-scale military exercises and arms buildup.

68 The Korean War began in June 1950 and in July 1953 an armistice agreement was concluded. In the Panmunjom Declaration, the two countries announced that they would engage in consultations with a view to declaring an end to the War by the end of this year, which is the 65th anniversary of the Armistice, and turning the armistice into a peace treaty.

(3) Relations with China

The China-North Korea Treaty on Friendship, Cooperation and Mutual Assistance, which was concluded in 1961, is still in force.[69] In addition, China is currently North Korea's biggest trade partner. In 2017, trade volume between China and North Korea was very large, accounting for approximately 90% of North Korea's total trade (excluding trade between North Korea and the ROK),[70] suggesting North Korea's dependence on China.

With regard to the situation in North Korea and its nuclear issue, China has expressed support for denuclearization on the Korean Peninsula, for peace and stability on the Korean Peninsula, and solving problems through dialogue and consultations. While it has endorsed the series of UN Security Council Resolutions, which strengthen sanctions on North Korea.[71] It has also stated that sanctions alone will be unable to achieve a fundamental solution to the nuclear issue and that a solution should be found through dialogue and consultations. In this respect, China has expressed support for the U.S.-North Korea dialogue, including U.S.-North Korea summit meetings. China, as well as North Korea and Russia, insists that denuclearization of the Korean Peninsula should be gradual and simultaneous, with relevant countries taking corresponding measures.

China is a vital political and economic partner for North Korea and maintains a degree of influence on the country. Although it has been noted that China-North Korea relations had deteriorated because North Korea did not necessarily take actions that were in accordance with China's position. For example, North Korea repeatedly conducted nuclear and ballistic missile tests despite opposition from the international community including China. However, in March 2018 the first-ever China-North Korea summit meeting under the leadership of Chairman Kim Jong-un was held,[72] in which the two leaders agreed to further develop bilateral relations and also for President Xi Jinping to make a visit to North Korea. Chairman Kim Jong-un made another visit to China in May and June and held meetings with President Xi, in which they reportedly exchanged opinions on the denuclearization of the Korean Peninsula and the outcomes of the U.S.-North Korea summit meeting. Moreover, in January 2019, Chairman Kim visited China again and held a meeting with President Xi, in which they reportedly exchanged opinions on such issues as the policy for the denuclearization of the Korean Peninsula. In addition, President Xi visited North Korea in June 2019 for the first time since he was appointed President, and held a meeting with Chairman Kim Jong-un. They reportedly had discussion on the development of the relationship between two countries and denuclearization of the Korean Peninsula.

(4) Relations with Russia

Concerning North Korea's nuclear issue, Russia, along with China, has expressed support for the denuclearization on the Korean Peninsula and early resumption of the Six-Party Talks. Following the sixth nuclear test conducted by North Korea in September 2017, Russia condemned North Korea's nuclear test for violating UN Security Council Resolutions, but also stated that measures that would escalate tensions should be avoided. Nonetheless, Russia approved UN Security Council Resolution 2375, which was adopted in September 2017. Furthermore, although Russia endorsed UN Security Council Resolution 2397, adopted in December 2017, it emphasized that pressure on North Korea should make way for dialogue and negotiations.

Following the U.S.-North Korea summit meeting in June 2018, Russia has continued to demonstrate an active stance in supporting political and diplomatic processes in the vicinity of the Korean Peninsula and has called on relevant countries to give consideration to consultations in a multilateral format.

As for recent activities, in April 2019, Chairman Kim Jong-un visited Vladivostok and held a meeting with President Putin to exchange opinions on the development of the bilateral relationship and the Korean Peninsula situation. In addition, President Putin is said to have accepted Chairman Kim's invitation to visit North Korea.

(5) Relations with Other Countries

Since 1999, North Korea has made efforts to establish relations with a series of West European countries and others, including the establishment of diplomatic relations with European countries[73] and participation in the ARF ministerial meetings. Meanwhile, it has been reported that North Korea has cooperative relationships with countries such as Iran, Syria, Pakistan, Myanmar, and Cuba in military affairs including arms trade and military technology transfer.

In recent years, North Korea is deemed to be strengthening

69 It includes a provision that if either of the signatories (China and North Korea) is attacked and enters into a state of war, the other would make every effort to immediately provide military and other assistance.

70 According to an announcement by the Korea Trade-Investment Promotion Agency (KOTRA).

71 On January 5, 2018, the Ministry of Commerce of China announced that based on UN Security Council Resolution 2397, China would implement measures from January 6, including restrictions on export of crude oil to North Korea and restrictions on export of refined petroleum products.

72 According to a statement released by China, in the China-North Korea summit meeting Chairman Kim Jong-un stated that the issue of denuclearization of the Korean Peninsula could be realized if the ROK and the United States would take phased measures in step with North Korea in order to realize peace and reconciliation. This visit to China was the first overseas visit made by Chairman Kim Jong-un since assuming the leadership of North Korea.

73 For example, the United Kingdom and Germany established diplomatic relations with North Korea in 2000 and 2001, respectively.

its relations with African countries, with North Korean senior officials paying visits to African countries.[74] The underlying purposes for enhancing relations with these countries include the usual objective of deepening political and economic cooperation. In addition, it appears that North Korea hopes to acquire foreign currency by expanding its arms trade and military cooperation with African countries – activities which are becoming increasingly difficult due to sanctions based on UN Security Council resolutions and political turmoil in the Middle East. It is actually the case that transactions that violate the terms of UN Security Council Resolutions have been observed,[75] and the possibility that North Korea's illegal activities could provide a funding source for nuclear and ballistic missile development is a cause for concern.

Following the adoption of the series of UN Security Council Resolutions in 2017, various countries in Europe, Africa, the Middle East, South Asia, and Southeast Asia are reviewing their diplomatic and economic relations with North Korea.[76] On the other hand, recently, North Korea has been strengthening diplomatic relationships with other countries. For example, Foreign Minister Ri Yong-ho visited Vietnam, Syria, China and Mongolia in November-December 2018, and Kim Yong-nam, President of the Presidium of the Supreme People's Assembly, visited Cuba, Venezuela and Mexico in November-December.

2 The Republic of Korea and the U.S. Forces Korea

1 General Situation

With regard to its North Korea policy, the Moon Jae-in administration, which was inaugurated in May 2017, is placing emphasis on improving the inter-Korean relationship and easing tensions based on the Panmunjom Declaration, issued at the inter-Korean summit meeting in April 2018 and Pyongyang Joint Declaration of September 2018, issued at the inter-Korean summit meeting in September in the same year. How the North Korea policy of the Moon administration will impact inter-Korean relations will continue to require close attention.

The U.S. Forces, mainly the Army, have been stationed in the ROK since the ceasefire of the Korean War. The ROK has established very close security arrangements with the United States primarily based on the U.S.-ROK Mutual Defense Treaty. The U.S. Forces Korea have been playing an important role in securing peace and stability of the region such as playing a vital role in deterring the outbreak of large-scale armed conflict on the Korean Peninsula.

2 Defense Policies and Defense Reform of the ROK

The ROK has a defensive weakness, namely, its capital Seoul, which has a population of approximately 10 million, is situated close to the DMZ. The ROK has set the National Defense Objective as follows: "to protect the country from external military threats and invasions, to support peaceful unification, and to contribute to regional stability and world peace." As one of the "external military threats," the ROK, in its Defense White Paper, used to designate North Korea as the "main enemy" or state that "the North Korean regime and its armed forces…will remain as our enemies.[77] In the ROK Defense White Paper 2018, published in January 2019, while continuing to describe North Korea's WMDs as a threat to the peace and stability of the Korean Peninsula, the designation of the country as an enemy was eliminated. Instead, the white paper states as follows: "The Republic of Korea's armed forces regard any forces that threaten and encroach upon our sovereignty, territory, people and assets as our enemies."[78] In addition, the white paper emphasizes the importance of omni-directional response to security threats.

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74 For example, in May 2016, President of the Presidium of the Supreme People's Assembly Kim Yong-nam attended the inauguration ceremony of the President of Equatorial Guinea. He held talks with the President, as well as with the leaders of the Republic of Chad, the Gabonese Republic, the Central African Republic, the Republic of Congo, the Republic of Guinea, and the Republic of Mali who were attending the inauguration ceremony.

75 The final report of the UN Security Council's Panel of Experts assisting the North Korea Sanctions Committee released in March 2019 points out that North Korea has attempted to supply small arms and other military equipment to Houthi rebels in Yemen as well as to Libya and the Sudan through intermediaries.

76 For example, in September 2017, Spain recalled its ambassador to North Korea, and Italy followed suit in October. In September the Philippines announced that it would cease trading with North Korea. Furthermore, in November Sudan announced that it had ceased all transactions with North Korea and in October Uganda announced that it had expelled all persons related to the North Korean military or weapons-related companies.

77 The Defense White Paper described North Korea as an enemy under some ROK governments in the past and did not do so under others. However, the wording "North Korean regime and its armed forces…will remain as our enemies" had been retained since the ROK Defense White Paper 2010, released in December 2010 under the administration of President Lee Myung-bak.

78 Regarding North Korea, the ROK's Defense White Paper 2018 notes as follows: "Although South and North Korea have alternately engaged in military conflict and in reconciliation and cooperation, they have created a new security environment favorable for full denuclearization of the Korean Peninsula and the maintenance of permanent peace, as three inter-Korean summit meetings and the first U.S.-North Korea summit meeting have been realized in 2018. [Omitted] However, North Korea's weapons of mass destruction are posing a threat to the peace and stability of the Korean Peninsula. Our armed forced will provide military support for efforts for full denuclearization of the Korean Peninsula and the maintenance of permanent peace and will thoroughly prepare for all situations."

The ROK has continued to undertake reforms of its national defense.[79] In recent years, in August 2012, in light of the sinking of the ROK patrol boat and the bombardment of Yeonpyeong in 2010, the Defense Reform Basic Plan (2012-2030) was released by the Ministry of National Defense of the ROK,[80] which included enhancing deterrence capabilities against North Korea and making the military even more efficient. In March 2014, the Defense Reform Basic Plan (2014-2030) was unveiled,[81] which included in its scope the long-term development of defense capabilities in order to respond to potential threats after the unification of the Korean Peninsula while securing response capabilities against the threat from North Korea. In February 2017, it announced the Defense Reform Basic Plan (2014- 2030) (rev.1), which, while maintaining the objectives and underlying tone of Defense Reform Basic Plan (2014-2030), emphasizes having readiness capability for simultaneous local provocations and all-out war, while giving top priority to bolstering the organization and military power for responding to nuclear, missile and other asymmetrical threats from North Korea. In July 2018, the ROK released the "Defense Reform 2.0," which has set the following three main goals: making omni-directional response to security threats, enhancing military power based on advanced science and technology and developing armed forces appropriate for a developed country. This plan calls for continued promotion of efforts to secure combat capabilities necessary for responding to the threat from North Korea and also includes the reduction of the troops and the mandatory military service period.[82]

3 Military Posture of the ROK

The ROK's military capacity is as follows. The ground forces consist of 22 army divisions and 2 marine divisions, totaling 520,000 personnel; the naval forces consist of 240 vessels with a total displacement of approximately 217,000 tons; and the air forces (Air Force and Navy combined) consist of approximately 640 combat aircraft.

The ROK has been modernizing its military forces— not only its Army but also its Navy and Air Force—in order to establish an omnidirectional defense posture to deal with future potential threats, not least threats from North Korea. The Navy has been introducing submarines, large transport ships, and domestically built destroyers. The Air Force is currently promoting a program for the installation of the F-35A as a next-generation fighter with stealth property.

In November 2017, the ROK Government announced a revision of its missile guidelines, which stipulate the range of ballistic missiles it possesses; the revision included the elimination of warhead weight limit restrictions on ballistic missiles, in order to enhance the deterrence against military provocation by North Korea.[83] Furthermore, to address North Korean nuclear and missile threats, in addition to expanding the missile capabilities of the ROK Forces,[84] the ROK is engaging in efforts to build a Korean-type three-axis system, comprised of the following elements: a system known as "Kill Chain" to conduct swift preemptive strikes using missiles and other assets,[85] the indigenous missile defense system (Korea Air and Missile Defense [KAMD]),[86] and the Korea Massive

79 Under the Act concerning National Defense Reform passed in 2006, the Defense Reform Basic Plan must analyze and evaluate changes in the situation and the results of the promotion of national defense reform and be revised and supplemented, even after its establishment.

80 The ROK Ministry of National Defense states that in order to convert the ROK Forces into an "order-made military structure" that matches the operational environment on the Korean Peninsula, it will significantly expand response capabilities in the Northwestern Islands area, reorganize the senior command structure in preparation for the transfer of wartime operational command, gradually proceed with the reduction and reorganization of the troops, and significantly expand response capabilities against missiles and cyberwarfare, etc. In order to build a "high-efficiency developed country-type national defense operation structure," it will also promote efficiency, reorganize the human resources control structure, enhance the welfare of the military, and improve the military service environment of the troops.

81 The ROK Ministry of National Defense plans to introduce an additional three Aegis-class cruisers, develop next-generation destroyers and submarines, and introduce medium- and high-altitude reconnaissance drones and multipurpose satellites in order to secure response capabilities against existing and potential threats.

82 The troops are planned to be reduced from the current level of 618,000 personnel to 500,000 personnel. The mandatory military service period is planned to be reduced from 21 months to 18 months for the Army and the Marine Corps, from 23 months to 20 months for the Navy, and from 24 months to 22 months for the Air Force. In the past, the Defense Reform Basic Plan repeatedly made a reference to the reduction of the troops.

83 The missile guidelines were established to restrict the range and warhead weight of ballistic missiles possessed by the ROK and were agreed by the governments of the United States and the ROK in 1979. They were subsequently revised in 2001 and 2012. In the previous guidelines, which were last revised in 2012, provisions included, for example, that ballistic missiles with a maximum range of 800 km should have a maximum warhead weight of 500 kg.

84 Regarding ballistic missiles, the Hyeonmu 2a, with an estimated range of 300 km, Hyeonmu 2b, with an estimated rage of 500 km, and the Hyeonmu 2c, with an estimated range of 800 km, are considered to be in operational deployment, for example. In addition, the ROK is considered to be developing a new ballistic missile following the abolition of the limits on the weight of warheads due to the revision of the missile guidelines in 2017. Regarding cruise missiles, surface-to-surface cruise missiles, such as the Hyeonmu 3a, with an estimated range of 500 km, the Hyeonmu 3b, with an estimated range of 1,000 km, and the Hyeonmu 3c, with an estimated range of 1,500 km, are considered to be in operational deployment, for example.
In September 2018, the ROK held a launching ceremony for the Dosan Ahn Changho, a 3,000-ton class new submarine. It has been reported that this submarine will be installed with submarine-launched ballistic missiles in the future

85 The ROK Ministry of National Defense explains that the system is capable of detecting and identifying signs of missile launch, determining attack, and actual attacking instantaneously. In the ROK's Defense White Paper 2016, it is explained that in order to construct the "Kill Chain," in addition to enhancing monitoring and surveillance capabilities through the use of high-altitude reconnaissance unmanned aerial vehicles and military reconnaissance satellites, the ROK is enhancing strike capacity by securing extra surface-to-surface missiles, long-range air-to-surface missiles, and Joint Attack Direct Munitions (JADM).

86 The ROK Ministry of National Defense has denied participation in the U.S. missile defense system, and has underscored that the ROK was creating its own indigenous systems. The reported reasons include differences in threat perceptions between the United States and the ROK, concern over Chinese backlash, and cost effectiveness.

Punishment & Retaliation (KMPR) concept.[87] At present, the three-axis system has been reconfigured into a "strategic strike system," which integrates the Kill Chain and KMPR, and a "Korean missile defense system." The focus of defense has also changed from response to the threat of North Korean missiles to omni-directional response to security threats.

In recent years, the ROK has actively promoted equipment export, which reached approximately US$3.2 billion on a contract value basis in 2017. Since 2006, the amount has increased by nearly 13-fold in 11 years. It is reported that export items have diversified to include communication electronics, aircraft, and naval vessels.[88]

Defense spending in FY2018 (regular budget) increased by about 8.2% from the previous fiscal year to nearly KRW 46.6971 trillion, marking the 20th consecutive year of increases since 2000. According to the Defense Reform 2.0, the ROK will increase the defense budget 7.5% on an annual average.

See Fig. I-2-3-6 (Changes in the ROK's Defense Budget)

4 U.S.-ROK Alliance and U.S. Forces Korea

The United States and the ROK have taken various steps to deepen the U.S.-ROK Alliance in recent years.

While regularly confirming the strengthening of the U.S.-ROK Alliance at the summit level, as specific undertakings, the two countries signed the U.S.-ROK Counter-Provocation Plan for dealing with North Korea's provocations in March 2013,[89] and approved the Tailored Deterrence Strategy, designed to enhance deterrence against North Korean nuclear and other WMD threats, at the 45th Security Consultative Meeting (SCM) in October of the same year.[90] At the 46th SCM in October 2014, the two countries agreed on "Concepts and Principles of ROK-U.S. Alliance Comprehensive Counter-missile Operations (4D Operational Concept)" to tackle North Korean ballistic missile threats. At the 47th SCM in November 2015, the implementation guidance on the 4D Operational Concept was approved.[91] Additionally, after North Korea went ahead with its nuclear test in January 2016, the United States and the ROK officially decided to deploy THAAD[92] to U.S. Forces Korea in July 2016, concluding the temporary deployment of it in September. In addition, in a U.S.-ROK summit meeting also held in September, the enhanced deployment of U.S. strategic assets in and around the ROK on a rotational basis was agreed. Furthermore, it was reported that in the regular U.S.-ROK joint military exercise conducted in April 2018, around 300,000 ROK Forces personnel and around 23,700 U.S. Forces personnel participated, as well as amphibious assault ships and F-35B fighters. In June the two countries announced that the U.S.-ROK joint military exercise "Freedom Guardian" planned for August had been suspended, along with two U.S.-ROK Marine Exchange Program training exercises scheduled to occur within the next three months. In October, they announced the cancellation of the Vigilante Ace, a regular air force exercise conducted in November-December in usual years, in order to provide every possible opportunity to continue the U.S.-North Korea diplomatic process. Furthermore, in March 2019, they announced the "conclusion" of the Key Resolve and Foal Eagle exercise, which has been conducted in March-April in usual years, and the implementation of Alliance (Dong Maeng), a combined command exercise.[93]

At the same time, the two countries have worked to deal with such issues as the transition of operational control

87 The ROK Ministry of National Defense website states that "KMPR, the third axis, is a Korean-type massive retaliation concept, a system in which counterattacks are conducted by directly aiming at the North Korean leadership including its war command headquarters, in the case where North Korea threatens with its nuclear weapons," and "missile and other strike forces capable of delivering simultaneous and massive precision strikes and elite professional special operation forces, etc. will be operated for this purpose." In December 2017 it was reported that a 1,000 personnel "special duties brigade" had been newly formed, which would be tasked with the duty of eliminating the North Korean leadership, and was expected to form a major element in the KMPR concept.

88 Since the 1970s, the ROK has devoted efforts to the development of the defense industry, and since the 2000s, it has expanded exports of defense equipment. The Moon Jae-in administration is placing emphasis on the enhancement of the defense industry as a new driving force of economic growth and as a means of job creation. As for exports in recent years, in 2014, the ROK concluded a contract to export 12 FA-50 light attack aircraft to the Philippines. Among other contracts concluded in recent years are a contract in 2016 to export a frigate to the Philippines, a contract in 2016 to export a supply vessel to New Zealand, contracts in 2017 to export the K-9 self-propelled artillery to Finland, Norway and India, and a contract in 2018 to export trainer aircraft to Indonesia.

89 The ROK Joint Chiefs of Staff has announced that the plan contains consultative procedures as well as robust and thorough response methodologies for the United States and the ROK to take joint responses in the event of a North Korean provocation. However, the details of the plan have not been made public.

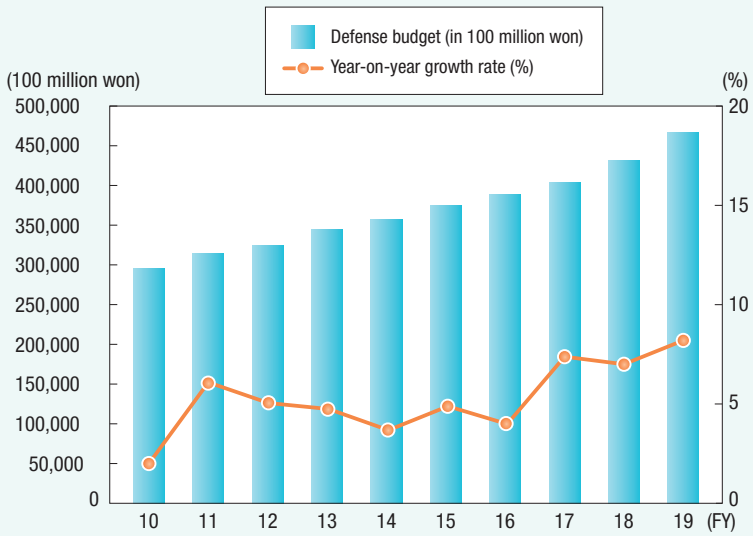
90 According to the Joint Communiqué of the 45th ROK-U.S. SCM, this strategy establishes a strategic framework for tailoring deterrence against key North Korean threat scenarios across armistice and wartime, and strengthens the partnership between the United States and the ROK to maximize their deterrent effects. However, the details have not been made public.

91 According to the Joint Communiqué of the 46th SCM, the "Concepts and Principles" are designed to detect, defend, disrupt, and destroy missile threats including nuclear and biochemical warheads. However, the details have not been made public. Furthermore, according to the "Strategic Digest 2015" of the U.S. Forces in the ROK, the "Concepts and Principles" apply from peacetime to war, and will guide operational decision-making, planning, exercises, capability development, and acquisitions.

92 A ballistic missile defense system designed to intercept short- and intermediate-range ballistic missiles in their terminal phase from the ground. It captures and intercepts targets at high altitudes outside of the atmosphere or in the upper atmosphere. See Part III, Chapter 1, Section 2 regarding the ballistic missile defense system.

93 Although a combined command exercise was also implemented in August 2019, it is reported that the name "Alliance" would not be used.

Fig. I-2-3-6 Changes in the ROK's Defense Budget



Notes : ROK Defense White Paper 2016 for FY2009 to FY2016.
The Ministry of National Defense website for FY2017 to FY2019

(OPCON) to the ROK[94] and the realignment of U.S. Forces Korea. For the transition of OPCON to the ROK, the roadmap for the transfer "Strategic Alliance 2015" was established in October 2010. Aiming to complete the transition by December 1, 2015, the two countries have reviewed the approach of transitioning from the existing combined defense arrangement of the U.S. and ROK Forces, to a new joint defense arrangement led by the ROK Forces and supported by the U.S. Forces. Nevertheless, based on the increasing seriousness of North Korea's nuclear and missile threats, the two sides decided at the 46th SCM to re-postpone the transition of OPCON, and to adopt a conditions-based approach, i.e., implementing the transition when conditions such as the ROK Forces' enhanced capabilities are met. The ROK plans to develop core military competencies for deterrence against and response to the threats from nuclear weapons and missiles, which are required for the transition of OPCON, by 2023. At the 50th SCM in October 2018, it was decided that following the transition of OPCON, an ROK military officer will serve as commander of the U.S.-ROK Combined Forces, replacing the current arrangement of a U.S. military officer serving as the commander. It was also decided that regarding the ROK Forces' operational capabilities, their IOC will be assessed in 2019. In August 2019, an IOC assessment was carried out during a combined command exercise for the transition of OPCON.[95]

With regard to the realignment of the U.S. Forces Korea,[96] an agreement had been reached in 2003 on the relocation of the U.S. Forces' Yongsan Garrison located in the center of Seoul to the Pyeontaek area, south of Seoul, and on the relocation of the U.S. Forces stationed north of the Han River to the south of the river. Subsequently, however, the agreement has been partially revised, due to various factors, including: the relocation to the Pyeontaek area being delayed due to logistical reasons such as increases in relocation costs; in relation to the postponement of the transition of OPCON, it has been necessary for some U.S. Forces personnel to remain at Yongsan Garrison; and it was decided that the counter-fires forces of U.S. Forces Korea would remain in their location north of the Han River to counter the threat of North Korea's long-range rocket artillery. In July 2017 the U.S. Eighth Army headquarters relocated to the Pyeontaek area, and in June 2018 the headquarters of U.S. Forces Korea and United Nations Command also relocated to the same area. The realignment of U.S. Forces Korea could have a significant impact on U.S. and ROK defense postures on the Korean Peninsula, and as such it will be necessary to follow future developments closely.

94 The United States and the ROK have had the U.S.-ROK Combined Forces Command since 1978 in order to operate the U.S.-ROK combined defense system to deter wars on the Korean Peninsula and to perform effective combined operations in the case of a contingency. Under the U.S.-ROK combined defense system, OPCON over the ROK Forces is to be exercised by the Chairman of the Korea Joint Chiefs of Staff in peacetime and by the Commander of the U.S. Forces Korea, who concurrently serves as the Commander of the Combined Forces Command, in a contingency.

95 An opening statement made by Minister of National Defense Jeong Kyeongdoo at the U.S.-ROK Defense Ministerial Meeting held on August 9, 2019

96 The United States intends to consolidate and relocate the bases of the U.S. Forces Korea which are scattered across the ROK, in order to ensure stable stationing conditions for U.S. Forces Korea and a balanced development of ROK land. The agreement between the United States and the ROK include: (1) an agreement to conduct the relocation to south of the Han River in two stages (June 2003); and (2) the withdrawal of 12,500 of the nearly 37,500 personnel out of the ROK (October 2004). The United States has thus been transforming its posture in accordance with these agreements. However, at the U.S.-ROK Summit Meeting in April 2008, the two countries agreed to maintain the current 28,500 as the appropriate troop level. Since then, the two countries have continued to affirm that maintaining this troop level would be appropriate.

5 Relations with Other Countries

(1) Relations with China

China and the ROK have made continuous efforts to strengthen their relations. Meanwhile, outstanding issues have emerged between China and the ROK. The "ADIZ" issued by China in November 2013 overlapped in some areas with the ROK's ADIZ. Furthermore, it included the airspace above the sea areas surrounding the reef, Ieodo (Chinese name: Suyan Rock), regarding which China and the ROK have conflicting claims to the jurisdictional authority over the exclusive economic zone. Against this backdrop, the ROK Government announced the expansion of its own ADIZ in December 2013 and enforced it from the same month. The ROK is protesting that Chinese aircraft are repeatingly intruding into the ROK's ADIZ.[97]

China has protested that the deployment of THAAD to U.S. Forces Korea would undermine China's strategic security interests. On this point, in October 2017 the governments of China and the ROK announced that they had agreed to utilize military channels to reach a mutual understanding relating to China's concerns about THAAD. In December 2017 President Moon Jae-in made his first visit to China since his inauguration and the two leaders agreed to establish a hotline and continue to maintain close communication, as well as vitalizing high-level strategic dialogue. The ROK Defense White Paper 2018 also makes clear that the ROK will strengthen strategic communication with China.

(2) Relations with Russia

Military exchanges have been under way between the ROK and Russia in recent years, including exchanges among high-ranking military officials. The two countries have also agreed on cooperation in the areas of military technology, defense industry, and military supplies. In March 2012, the two countries held the first ROK-Russia defense strategic dialogue and agreed to regularize the dialogue. In November 2013, President Vladimir Putin visited the ROK, and a joint statement was issued in which the two sides agreed to strengthen dialogue in the areas of politics and security.

In June 2018, President Moon Jae-in visited Russia as a state guest, becoming the first ROK president to do so in 19 years. In August 2018, defense strategic dialogue was held, and it was agreed that the dialogue will be upgraded to the vice minister level and that a hotline will be established between the two countries' air forces.

On the other hand, Russia opposes the deployment of THAAD by U.S. Forces Korea for the reason that it is part of the U.S. missile defense network and harms the strategic stability of the region.

97 For example, in November 2018, the ROK Ministry of National Defense announced that it had lodged a protest with China over several cases of intrusion by Chinese aircraft into the ROK's Air Defense Identification Zone several times without prior notice since the beginning of the year and had strongly called on China to take measures to prevent similar incidents.