

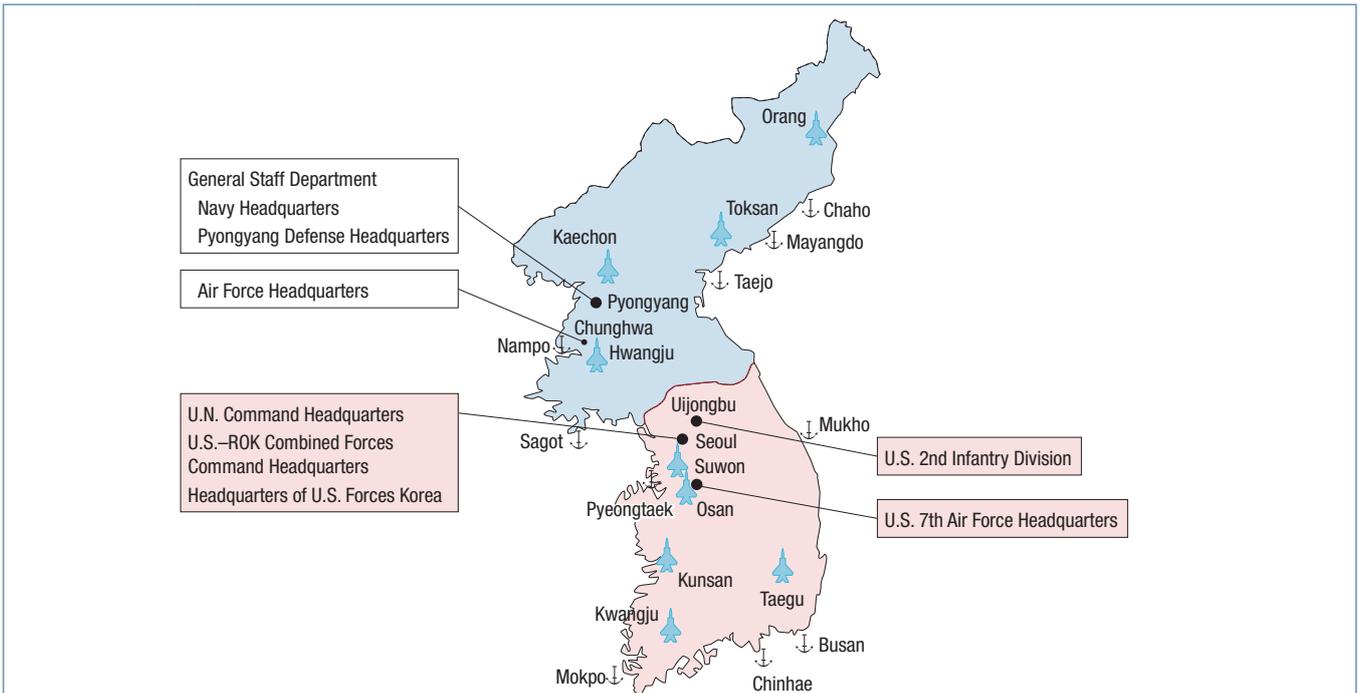
## Section 2 Korean Peninsula

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 1.5 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-2-2-1 (Military Confrontation on the Korean Peninsula)

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



		North Korea	ROK	U.S. Forces in Korea
Total armed forces		Approx. 1.19 million personnel	Approx. 630,000 personnel	Approx. 23,000 personnel
Army	Ground troops	Approx. 1.02 million personnel	Approx. 495,000 personnel	Approx. 15,000 personnel
	Tanks	T-62, T-54/-55, etc. Approx. 3,500	M-48, K-1, T-80 etc. Approx. 2,400	M-1
Navy	Naval vessels	Approx. 780; 104,000 tons	Approx. 240; 213,000 tons	Supporting corps only
	Destroyers		12	
	Frigates	4	10	
	Submarines	20	13	
	Marines		Approx. 29,000 personnel	
Air Force	Combat aircraft	Approx. 560	Approx. 620	Approx. 80
	3rd and 4th generation fighter aircraft	Mig-23 x 56	F-4 x 70	F-16 x 60
		Mig-29 x 18 Su-25 x 34	F-16 x 163 F-15 x 60	
Reference	Population	Approx. 25.1 million	Approx. 50.9 million	
	Term of service	Men: 12 years Women: 7 years	Army: 21 months Navy: 23 months Air Force: 24 months	

Note: Data from "The Military Balance 2017," etc. Data for the troop strength of the United States Forces Korea (USFK) from U.S. DoD information (December 2016).

## 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,<sup>1</sup> 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.<sup>2</sup> In fact, leader Kim Jong-un, Chairman of the Korean Workers’ Party (KWP),<sup>3</sup> who is in a position to control the military, noted the importance of military power in his report on the work of the Central Committee at the Seventh Congress of the KWP in May 2016: “It is necessary to uphold the military-first revolutionary path as the constant strategic path, and strengthen the might of the military power in all of its dimensions.” He also regularly visits military organizations. In this light, it is conceivable that the Chairman will continue to attach importance to and rely on the military forces.

Although North Korea has been facing serious economic difficulties and has depended on the international community for food and other resources, it seems to be maintaining and enhancing its military capabilities and combat readiness by preferentially allocating resources to its military forces. North Korea deploys most of its military forces along the DMZ. According to the official announcement at the Supreme People’s Assembly in April 2017, the proportion of the defense budget in the FY2016 national budget was 15.8%. However, it is believed that this represents only a fraction of the real defense expenditures.

Furthermore, North Korea seems to maintain and reinforce its so-called asymmetric military capabilities by continuing to promote the development of WMDs and ballistic missiles and the enhancement of its operation

capabilities, including conducting five nuclear tests so far and repeatedly launching ballistic missiles, and by maintaining large-scale special operations forces. In addition, North Korea repeatedly uses provocative rhetoric and behavior against relevant countries, including Japan.<sup>4</sup>

Such a military trend in North Korea constitutes a serious and imminent threat to the security not only of Japan but also of the entire region and the international community. Especially since last year, when it willfully conducted two nuclear tests and launched more than 20 ballistic missiles, the development and enhancement of the operating capabilities of nuclear weapons and ballistic missiles by North Korea have reached a new level of threat (see column). On this point, at the G7 Taormina Summit held in Italy in May of this year, the leaders expressed the view that the situation in North Korea is a top priority in the international agenda and has come to pose a new level of threat of a grave nature to international peace and stability. It was also agreed that the G7 stands ready to strengthen measures to urge North Korea to immediately and fully comply with all relevant UN Security Council Resolutions (UNSCRs) and abandon all nuclear and ballistic missile programs. The leaders also strongly called on the international community to redouble its efforts to ensure the thorough implementation of relevant UNSCRs. In this manner, there is a common understanding that the North Korea issue is a global threat that is not confined to Northeast Asia. Needless to say, North Korea’s possession of nuclear weapons cannot be tolerated. 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.

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 Kim Jong-un was named “Chairman of the Korean Workers’ Party” at the Seventh KWP Congress held in May 2016. For consistency purposes, “Chairman of the Korean Workers’ Party” is used for the title of Kim Jong-un in this white paper, including for matters predating Kim Jong-un’s appointment as KWP Chairman.

4 In particular, from March to April 2013, North Korea underscored that it would exercise its right to preemptive nuclear attack against the United States and other countries, and that the strike zone of its ballistic missiles included Japan, naming specific cities. For example, it has 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)” (April 10, 2013, Rodong Sinmun), etc. More recently, the March 10, 2016 Rodong Sinmun stated that “once fire breaks out on the Korean Peninsula, not only the bases in Japan for U.S. invasion but anything in Japan that can be used for war shall turn into ashes in an instant,” and “[Choson], if it now so wishes, has the retaliatory power to not only destroy Japan but also smash Hawaii and the United States.” On March 7, 2017, the Korean Central Broadcasting Station reported that “the Hwasong artillery corps of the KPA Strategic Rocket Forces, which are responsible for striking the Japanese bases of the U.S. imperialist invasion forces in case of an emergency, participated in an exercise (which appears to be a reference to the ballistic missile launch on March 6, 2017).”

## 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).<sup>5</sup>

North Korea's military forces are comprised mainly of ground forces, with a total troop strength of roughly 1.19 million. While North Korea's military forces are believed to have been maintaining and enhancing



### A New Level of Threat

North Korea has repeatedly launched a variety of ballistic missiles to date. In 2016 in particular, it conducted launches at an unprecedented frequency, firing over 20 missiles, which is more than the total number of missiles (16) launched during the 18 years that Kim Jong-il was the Chairman of the National Defense Commission. Moreover, North Korea has continued to repeatedly launch missiles in 2017, including what appears to be a new type of missile. The recent developments related to the ballistic missile launches by North Korea are as follows:

- (1) First, it appears that North Korea seeks to increase the range of its ballistic missiles. In 2016, it launched a long-distance ballistic missile (a variant of Taepodong-2) disguised as a "Satellite" in February, and repeatedly launched a medium-range ballistic missile (Musudan) which reportedly has Guam in its range. If the new type of ballistic missile that is presumed to have been launched on a lofted trajectory on May 14, 2017 had been launched on a nominal trajectory, its range is expected to reach a maximum of approximately 5,000 km at this point in time. Furthermore, the ballistic missile launched on July 4, 2017 is thought to have a maximum range exceeding at least 5,500 km based on factors such as its flight altitude and distance, and is therefore, considered to be an ICBM-class ballistic missile.
- (2) Second, North Korea launched three ballistic missiles (Scud ERs) simultaneously in September 2016, all of which fell into more or less the same place in Japan's EEZ, and launched four ballistic missiles (Scud ERs) simultaneously on March 6, 2017. It is possible that North Korea is aiming to enhance the accuracy and operation capabilities necessary for saturation attacks by the ballistic missiles that are already deployed.
- (3) Third, it appears that North Korea aims to improve its ability to conduct surprise attacks by enhancing the secrecy and instantaneity of the launches in order to make their signs difficult to detect. Using a Transporter-Erector-Launcher (TEL) or submarine, it is possible to conduct launches from anywhere, making it difficult to detect signs of a launch in advance, and North Korea has been repeatedly conducting TEL and submarine-launched ballistic missile (SLBM) launches. In addition, North Korea may be switching to solid-fueled ballistic missiles, as suggested by the repeated launches of SLBMs in 2016 and the launches of a new type of ballistic missile that is presumed to be a modified version of the SLBM for ground launch that was launched on both February 12 and May 21, 2017, which are believed to have used solid fuel. Generally speaking, solid fuel-propelled missiles in comparison to liquid fuel-propelled missiles can be launched instantly, and the signs of their launches are more difficult to detect in advance. In this regard, North Korea is deemed to be aiming to improve its surprise attack capabilities.
- (4) Fourth, there is the possibility that North Korea is attempting to diversify the forms of launches. At the June 22, 2016 Musudan launch and the May 14 and July 4, 2017 launches of the new type of ballistic missile, it has been confirmed that they were launched on so-called lofted trajectories, in which the missiles are launched at higher angles than normal to higher altitudes. Generally, interception is considered to become more difficult when a launch is conducted on a lofted trajectory.

Given that North Korea may also have achieved the miniaturization of nuclear weapons and acquired nuclear warheads, and that it has not wavered from its position of continuing its nuclear weapons program, it is deemed that with time there will be a growing risk of deployment of ballistic missiles mounted with a nuclear warhead, which have Japan in their firing range.

It is the understanding of the Government of Japan that since 2016, North Korea's development of nuclear weapons and ballistic missiles and enhancement of their operational capabilities have reached a new level of threat to the region including Japan and the international community.

<sup>5</sup> The Four Military Guidelines were adopted at the fifth plenary meeting of the fourth KWP Central Committee in 1962.

their capabilities and operational readiness, most of its equipment is outdated.

Meanwhile, North Korea has forces such as large-scale special operations forces 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 1.02 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.<sup>6</sup>

The Navy has about 780 ships with a total displacement of approximately 104,000 t 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 70 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 560 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 forces whose size is estimated at 100,000 personnel.<sup>7</sup> In recent years, North Korea is seen to be placing importance on and strengthening its cyber forces.<sup>8</sup>

## 3 WMD and Ballistic Missiles

While North Korea continues to maintain large-scale 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.

North Korea's development of WMDs and missiles is considered to have made further strides through going ahead with the fifth nuclear test and repeating ballistic missile launches. Coupled with its provocative rhetoric and behavior, such as suggesting a missile attack on Japan, North Korea's development of WMDs and missiles poses a serious and imminent threat to the security of the region including Japan and the international community. Especially since 2016, when it willfully conducted two nuclear tests and launched more than 20 ballistic missiles, the development and enhancement of the operating capabilities of nuclear weapons and ballistic missiles by North Korea has reached a new level of threat. Additionally, such development poses a serious challenge to the entire international community with regard to the non-proliferation of weapons, including WMDs.

6 According to "The Military Balance 2014," North Korea is replacing Soviet-made T-54 and T-55 tanks with the Ch'onma-ho that North Korea independently produced based on the T-62. 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. 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.

7 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 2016 notes, "Special operation forces are currently estimated at approximately 200,000 strong."

8 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 annual report "Military and Security Developments Involving the Democratic People's Republic of Korea" (2015) submitted to Congress by the U.S. DoD also in February 2016 states, "North Korea probably views OCO [offensive cyber operations] as an appealing platform from which to collect intelligence and cause disruption in South Korea and other adversaries including the United States." According to the ROK's Defense White Paper 2016, North Korea has trained approximately 6,800 cyber warfare personnel and carries out various forms of cyber warfare provocations. Regarding North Korean cyber attacks, see Chapter 3, Section 5.

## (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 five nuclear tests including the nuclear test in September 2016, 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,<sup>9</sup> North Korea has suggested its production and extraction on several instances.<sup>10</sup> Moreover, in June 2009, North Korea announced that it would weaponize all of its newly extracted plutonium.<sup>11</sup> In April 2013, North Korea announced its policy to readjust and restart all nuclear facilities in Yongbyon, including the nuclear reactor, the disablement of which was agreed upon at the sixth round of the Six-Party Talks in September 2007. In November 2013, the International Atomic Energy Agency (IAEA) opined that while lack of inspection makes it impossible to determine conclusively, multiple activities were observed from satellite imagery suggesting that the nuclear reactor was restarted.<sup>12</sup> Furthermore, in September 2015, North Korea stated that all nuclear facilities in Yongbyon including the nuclear reactor and the uranium enrichment plant were readjusted and started normal operation. Because the restarting of the reactor could lead to the production and extraction of plutonium by North Korea, such developments are causes

of great concern.

As for highly enriched uranium that can also be used for nuclear weapons, in 2002 the United States announced that North Korea acknowledged the existence of a uranium enrichment program for nuclear weapons. Later in June 2009, North Korea declared the commencement of uranium enrichment. Furthermore, 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.<sup>13</sup>

With regard to the development of nuclear weapons, North Korea has conducted nuclear tests in October 2006,<sup>14</sup> May 2009,<sup>15</sup> February 2013,<sup>16</sup> January 2016<sup>17</sup> and September 2016.<sup>18</sup> 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. Images were released in March 2016 showing KWP Chairman Kim Jong-un meeting with nuclear weapons engineers and others and observing an object that North Korea claims to be a miniaturized

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- <sup>9</sup> 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%).
- <sup>10</sup> 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.
- <sup>11</sup> Then U.S. Forces Korea Commander Walter Sharp testified before the House Armed Services Committee in April 2011 that "we assess North Korea currently holds enough plutonium to make several nuclear weapons." The ROK Defense White Paper 2016 estimates that North Korea has more than 50 kg of plutonium, up from the 40 kg estimate in the ROK Defense White Paper 2014.
- <sup>12</sup> 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 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.
- <sup>13</sup> The "Worldwide Threat Assessment" of the U.S. Director of National Intelligence of January 2012 states, "the North's disclosure (of a uranium enrichment facility) supports the U.S. longstanding assessment that North Korea has pursued uranium-enrichment capability." The ROK Defense White Paper 2016 assesses that North Korea's highly enriched uranium (HEU) program "has reached a significant level."
- <sup>14</sup> 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.
- <sup>15</sup> 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 differed from an ordinary waveform.
- <sup>16</sup> 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 differed from an ordinary waveform and 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 DPRK's nuclear deterrence that has become diversified."
- <sup>17</sup> 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 different from an ordinary waveform and 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.
- <sup>18</sup> 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 not those of a natural earthquake and possibly differed from an ordinary waveform. Based on a comprehensive consideration of all the information including this, the Government believes that North Korea conducted a nuclear test.

nuclear warhead.<sup>19</sup> North Korea also announced with regard to the fifth nuclear test in September of the same year that “a nuclear explosion test to determine the power of our nuclear warheads was successfully conducted.” 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 five nuclear tests, it is possible that North Korea has achieved the miniaturization of nuclear weapons and has developed nuclear warheads.<sup>20</sup>

Although North Korea asserts that the fourth nuclear test conducted in January 2016 was a hydrogen bomb test,<sup>21</sup> it is doubtful that a general hydrogen bomb test was conducted, considering the magnitude of the earthquake.<sup>22</sup>

In any case, taking into account that North Korea has not changed its stance of continuing its nuclear weapons program, it is believed that with the passage of time, there would be a greater risk of North Korea deploying a ballistic missile mounted with a nuclear warhead that includes Japan in its range. In this regard, 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 could become the delivery vehicles of WMDs, poses a serious and imminent threat to the security of the region including Japan and

of the international community, and significantly impairs peace and stability. 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 regime;<sup>23</sup> North Korea considers that it needs its own nuclear deterrence to counter the nuclear threat of the United States<sup>24</sup> 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;<sup>25</sup> and North Korea reiterates 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.”<sup>26</sup> In March 2013, North Korea adopted the “new strategic line” (so-called “Byungjin line”) policy of simultaneous economic and nuclear development, alleging that even if it does not increase defense spending, it would be able to concentrate on its economic development and on improving the people’s livelihood as long as robust nuclear deterrence is achieved by increasing the effectiveness of its war deterrent and defense force. At the Seventh KWP Congress, it revealed that it would remain steadfast to this policy, and is not wavering in its stance of continuing to promote the development of nuclear weapons.

19 According to the Korean Central Broadcasting Station on March 9, 2016, KWP Chairman Kim Jong-un met with engineers and others from the nuclear weapons research team, provided guidance regarding the nuclear weapons program, and stated, “The nuclear warheads have been standardized to be fit for ballistic missiles by miniaturizing them.”

20 Over ten years have already passed since North Korea conducted its first nuclear test in October 2006. Furthermore, North Korea has conducted five 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, United Kingdom, France, and China. The ROK’s Defense White Paper 2016 assesses that “North Korea’s ability to miniaturize nuclear weapons seems to have reached a considerable level.” At a press briefing on January 3, 2017, U.S. White House Press Secretary Josh Earnest stated that “the intelligence community has previously said that the United States has not seen North Korea test or demonstrate the ability to miniaturize a nuclear weapon and put it on an ICBM. I’m not aware that that assessment has changed.”

21 Regarding the nuclear test conducted on January 6, 2016, North Korea announced: “The first H-bomb test was successfully conducted”; and “The DPRK fully proved that the technological specifications of the newly developed H-bomb for the purpose of test were accurate and scientifically verified the power of smaller H-bomb.” Prior to this, on December 10, 2015, the Korean Central Broadcasting Station reported KWP Chairman Kim Jong-un as saying, North Korea has “become a powerful nuclear weapons state that can reverberate the large explosion sound of a hydrogen bomb.”

22 In regard to North Korea’s nuclear test on January 6, 2016, the U.S. Director of National Intelligence’s “Worldwide Threat Assessment” (February 2016) states, “Although we are continuing to evaluate this event, the low yield of the test is not consistent with a successful test of a thermonuclear device.” Furthermore, in January 2016, the ROK National Intelligence Service reportedly briefed the National Assembly that because the power and seismic waves of the fourth nuclear test do not match up to those of the previous three nuclear tests, the test was unlikely a hydrogen bomb test.

23 U.S. DoD’s “Military and Security Developments Involving the Democratic People’s Republic of Korea,” March 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 Simmun* 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: “Swagging 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.”

With regard to the issue of North Korea's development of nuclear weapons, six rounds of the Six-Party Talks have been held since August 2003, aimed at taking peaceful measures to achieve the verifiable denuclearization on the Korean Peninsula. At the sixth round of the Talks in September 2007, the parties reached an agreement, which included completion of the disablement of nuclear facilities in Yongbyon and "a complete and correct declaration of all (North Korea's) nuclear programs" by the end of the year. However, the implementation of the agreement has not been completed, and the Six-Party Talks has been suspended since December 2008.

## (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.<sup>27</sup> Possession of sarin, VX gas, mustard gas and other chemical weapons, and of anthrax, smallpox, pest and other biological agents that could be used as biological weapons have been pointed out.

The possibility cannot be denied that North Korea is able to load biological and/or chemical weapons on warheads.<sup>28</sup>

## (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,<sup>29</sup> in addition to enhancing its military capabilities. The ballistic missiles currently deemed to be possessed and developed by North Korea are the following.<sup>30</sup>

 **See** Fig. I-2-2-2 (Ballistic Missiles North Korea is Deemed to Possess or Be Developing)

Fig. I-2-2-3 (Range of North Korean Ballistic Missiles)

Fig. I-2-2-4 (North Korea's Ballistic Missile Launches)

### 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 **Transporter-Erector-Launcher (TEL)**. It is deemed that Toksa is the first ballistic missile possessed or developed by North Korea which adopts a solid fuel propellant.<sup>31</sup>



### 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.

Category	Range
Short Range Ballistic Missile (SRBM)	Under approx. 1,000 km or less
Medium Range Ballistic Missile (MRBM)	Approx. 1,000 km – Under approx. 3,000 km
Intermediate Range Ballistic Missile (IRBM)	Approx. 3,000 km – Under approx. 5,500 km
Intercontinental 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).

<sup>27</sup> For example, the ROK Defense White Paper 2016 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 t 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 pest. Moreover, the U.S. DoD's "Military and Security Developments Involving the Democratic People's Republic of Korea" of February 2016 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.

<sup>28</sup> 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.

<sup>29</sup> 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.

<sup>30</sup> According to "IHS Jane's Sentinel Security Assessment China and Northeast Asia" (accessed in May 2017) 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.

<sup>31</sup> In March 2007, then U.S. Forces Korea Commander Burwell B. Bell testified before the House Armed Services Committee that, "North Korea is developing a new solid propellant short-range ballistic missile. Recently, in March 2006, North Korea successfully test-fired the missile. Once operational, the missile can be deployed more flexibly and rapidly than the existing system and North Korea will be able to launch the missile in a much shorter preparation period."

Fig. I-2-2-2 Ballistic Missiles North Korea Possesses and/or Is Developing

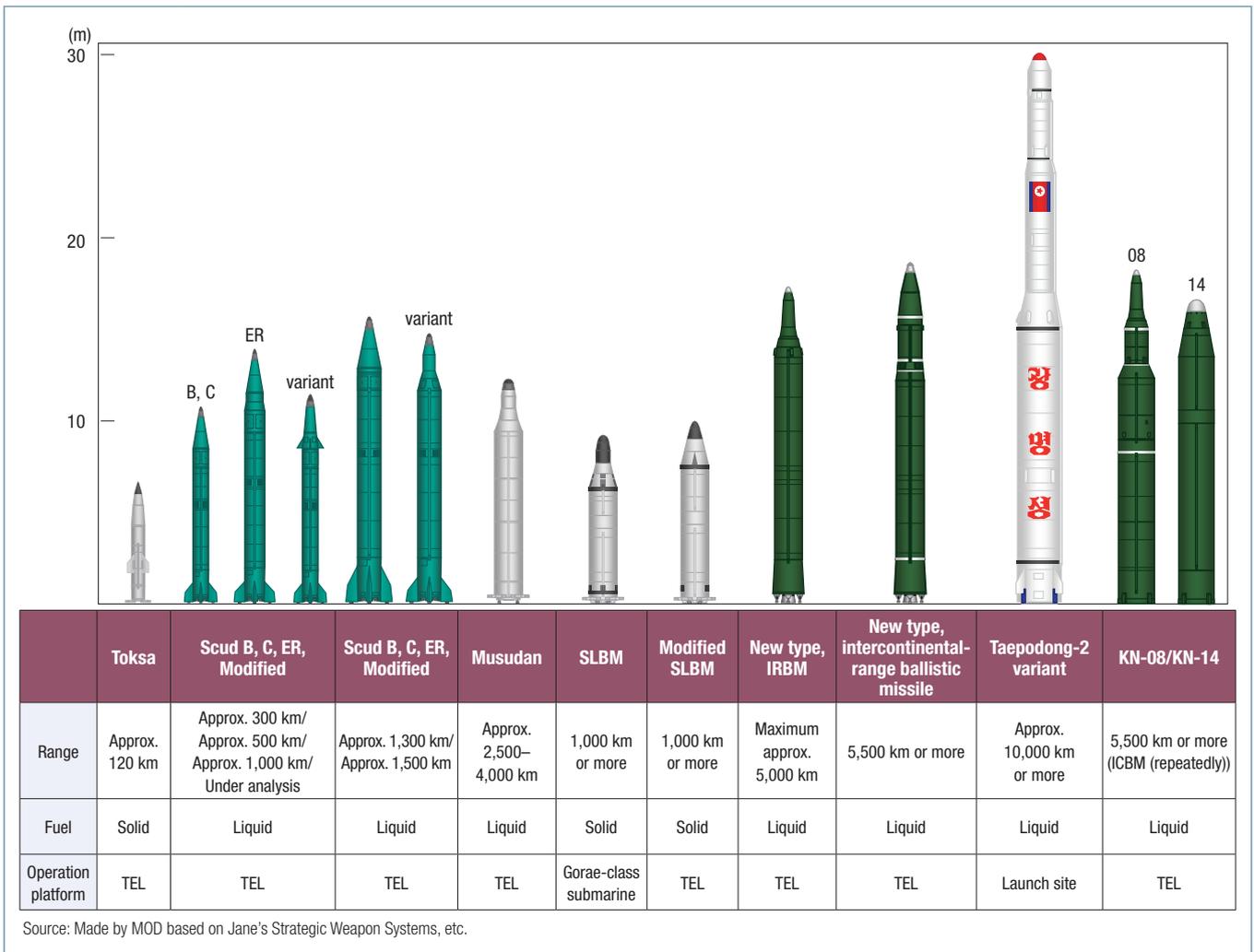


Fig. I-2-2-3 Range of North Korean Ballistic Missiles

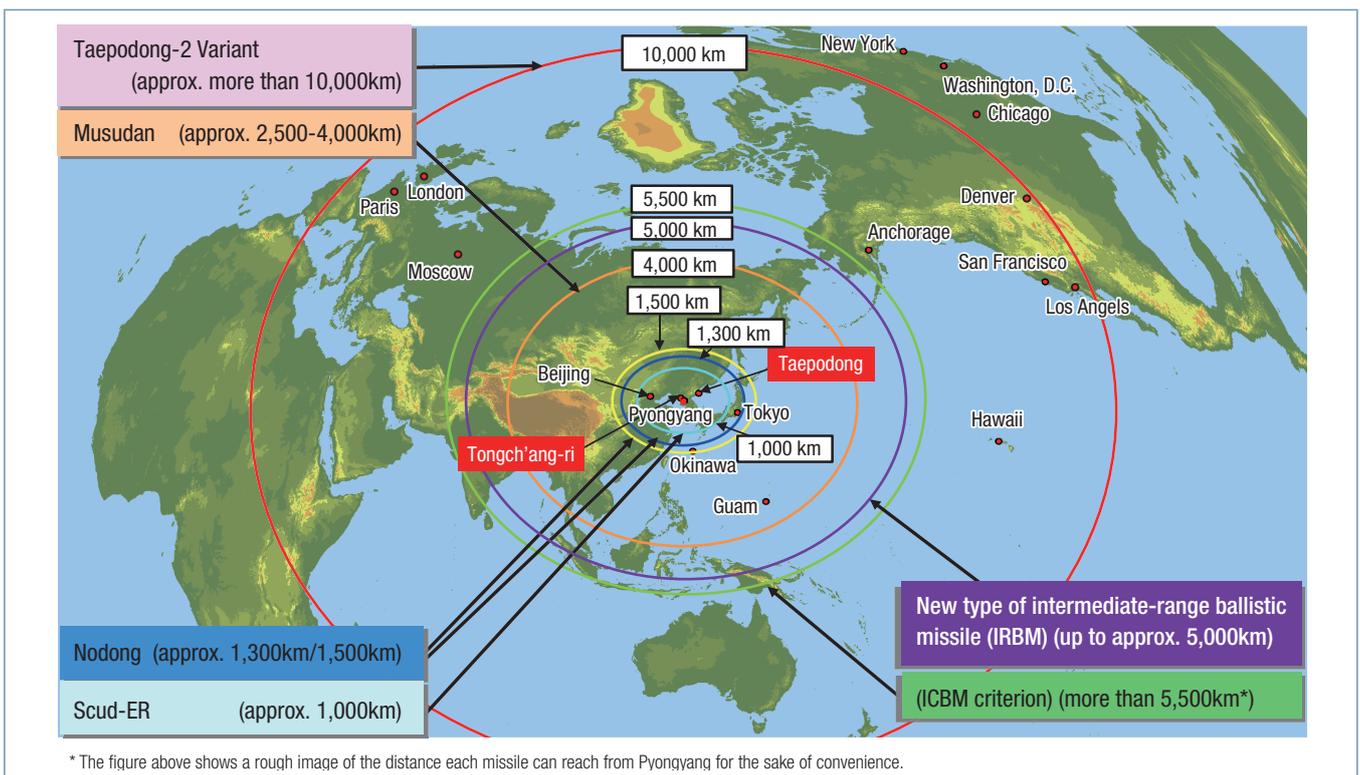


Fig. I-2-2-4 Ballistic Missile Launches by North Korea to Date

2015 and earlier

Date	Presumed type of missile	Number of launches	Location	Flight distance
1993/5/29	Nodong (possible)	Unknown	Unknown	Approx. 500 km
1998/8/31	Taepodong-1	1	Taepodong Area	Approx. 1,600 km
2006/7/5	Scud and Nodong	6	Kittaeryöng Area	Approx. 400 km
2006/7/5	Taepodong-2	1	Taepodong Area	Unknown, presumed to have failed
2009/4/5	Taepodong-2 or variant	1	Taepodong Area	3,000 km or more
2009/7/4	Scud or Nodong	7	Kittaeryöng Area	Maximum approx. 450 km
2012/4/13	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)
2014/3/3	Scud	2	Near Wonsan	Approx. 500 km
2014/3/26	Nodong	2	Near Sukchon	Approx. 650 km
2014/6/29	Scud	2	Near Wonsan	Approx. 500 km
2014/7/9	Scud	2	Approx. 100 km south of Pyongyang	Approx. 500 km
2014/7/13	Scud	2	Near Kaesong	Approx. 500 km
2014/7/26	Scud	1	Approx. 100 km west of Haeju	Approx. 500 km
2015/3/2	Scud	2	Near Nampo	Approx. 500 km

2016

Date	Presumed type of missile	Number of launches	Location	Flight distance
2016/2/7	Taepodong-2 variant	1	Tongch'ang-ri	Approx. 2,500 km (second stage landfall)
2016/3/10	Scud	2	Near Nampo	Approx. 500 km
2016/3/18	Nodong	1	Near Sukchon	Approx. 800 km
2016/4/15	Musudan (indicated)	1	East coast area	Unknown, presumed to have failed
2016/4/23	SLBM	1	Off the coast of Sinpo	Approx. 30 km (ROK Joint Chiefs of Staff)
2016/4/28	Musudan	2	Wonsan	Unknown, presumed to have failed
2016/5/31	Musudan (possible)	1	Wonsan	Unknown, presumed to have failed
2016/6/22	Musudan	2	Wonsan	First: Approx. 100 km (maximum); Second: Approx. 400 km
2016/7/9	SLBM	1	Off the coast of Sinpo	A few kilometers (ROK media reports)
2016/7/19	Scud and Nodong	3	Near Hwangju	First: Approx. 400 km; Third: Approx. 500 km
2016/8/3	Nodong	2	Near Unnyul	Approx. 1,000 km (the first exploded right after launch)
2016/8/24	SLBM	1	Off the coast of Sinpo	Approx. 500 km
2016/9/5	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
2017/2/12	New type of ground-launched ballistic missile modified from SLBM	1	Near Kusong	Approx. 500 km
2017/3/6	Scud ER	4	Near Tongch'ang-ri	Approx. 1,000 km
2017/3/22	Under analysis	1	Near Wonsan	Exploded within seconds of launch, presumed to have failed
2017/4/5	Under analysis	1	Near Sinpo	Approx. 60 km
2017/4/16	Under analysis	1	Near Sinpo	Exploded right after launch, presumed to have failed
2017/4/29	Under analysis	1	Near Pukchang	Fell inland approx. 50 km away, presumed to have failed
2017/5/14	New type of IRBM-class ballistic missile	1	Near Kusong	Approx. 800 km
2017/5/21	New type of ground-launched ballistic missile modified from SLBM	1	Near Pukchang	Approx. 500 km
2017/5/29	New type of ballistic missile modified from Scud missile	1	Near Wonsan	Approx. 400 km
2017/7/4	New type of intercontinental-range ballistic missile	1	Near Kusong	Approx. 900 km

**(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,<sup>32</sup> and it appears that a part of Japan falls within this range.

**(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. Thus, it is necessary to continue to pay attention to related developments.

**(d) Musudan**

The Musudan is a new type of intermediate-range ballistic missile (IRBM) currently being developed by North Korea. 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 its firing range.<sup>33</sup> 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.

In April 2016, North Korea is thought to have made its first attempt to launch a ballistic missile presumed to be the Musudan but it ended in failure. However, in June

### **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 February 2016, North Korea possesses a maximum of 100 TELs for Toksa and Scuds combined, 50 TELs for Nodongs, and 50 TELs for IRBMs (presumably refer to Musudans).

The type of TEL differs according to the length and weight of the missile. The Scud, Nodong, Musudan, and KN-08/14 are mounted on a four-, five-, six-, and eight-axle wheel-drive TEL, respectively. The ballistic missile launched on February 12 and May 21, 2017 appears 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 operation capacities of ballistic missiles by North Korea.

<sup>32</sup> "Military and Security Developments Involving the Democratic People's Republic of Korea" submitted by DoD to Congress in February 2016.

<sup>33</sup> In a statement for the Senate Armed Services Committee in March 2009, General Sharp, then Commander of U.S. Forces Korea, testified, "North Korea is now fielding a new intermediate range ballistic missile capable of striking Okinawa, Guam, and Alaska." The ROK's Defense White Paper 2016 notes that, "In 2007, it [North Korea] fielded the Musudan missile (range of over 3,000 km). Following these deployments, North Korea has gained direct strike capabilities against South Korea, Japan, Guam, and other surrounding countries."

2016, an IRBM presumed to be the Musudan that was launched from the vicinity of Wonsan in the eastern coast of North Korea reached an altitude exceeding 1,000 km (maximum height was 1,413.6 km according to North Korea's announcement) and flew approximately 400 km before falling into the Sea of Japan. With regard to the situation of this launch, it is believed that the missile was launched on a "lofted trajectory," meaning it was launched at a steep angle to reach a higher altitude than a nominal trajectory, while flying a shorter distance.<sup>34</sup> If this same ballistic missile presumed to be the Musudan were launched on a nominal trajectory, it is estimated that its range would correspond to a range between approximately 2,500 and 4,000 km, the previously suggested range of a Musudan. In this light, it is considered that, through its launch in June, North Korea demonstrated that its missile had functions of an IRBM to some level. While the failures of North Korea's several Musudan launches<sup>35</sup> since April 2016 have suggested that there could be fundamental flaws with the engine and missile body, it cannot be ruled out that North Korea has striven to solve the problems through the failures and made some technical gains. On the other hand, on October 15 and 20 North Korea launched a ballistic missile that is presumed to be the Musudan, which appears to have failed, and therefore, there may still be obstacles remaining towards the operationalization of the Musudan.

#### (e) 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. 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.<sup>36</sup> 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.<sup>37</sup>

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.<sup>38</sup>

It is also thought that North Korea's SLBM launches are conducted from a Gorae-class submarine (displacement 1,500 t). North Korea is believed to have one such submarine. It is also pointed out that North Korea seeks to develop a larger submarine to launch SLBMs.<sup>39</sup>

<sup>34</sup> On June 23, 2016, North Korea announced on the Korean Central Broadcasting Station that the test launch had been conducted on a high-angle launch system. It is not necessarily clear why North Korea launched the missile on a lofted trajectory. However, based on Korean Central Broadcasting Station's report on the same day that "The test-fire was successfully conducted without giving any slightest effect to the security of surrounding countries," it is possible that North Korea aimed to minimize the anticipated backlash and criticism from the international community, including neighboring countries and the United States, should its missile overfly the territories of other countries including Japan. In general, it is considered that ballistic missiles launched on a lofted trajectory make interception more difficult.

<sup>35</sup> On April 28, 2016, North Korea launched a ballistic missile presumed to be the Musudan in the early morning and late afternoon, respectively, but the launches ended in failure. Additionally, in the early morning of May 31, 2016, North Korea launched an IRBM that could be a Musudan, but it ended in failure. Furthermore, on April 15, 2016, North Korea launched a ballistic missile that ended in failure. It is suggested that this missile was also a Musudan.

<sup>36</sup> 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 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.

<sup>37</sup> 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.

<sup>38</sup> According to the Korean Central Broadcasting Station on August 25, 2015, 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."

<sup>39</sup> Source: Jane's Fighting Ships 2016-2017

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.

#### (f) New Types of Ballistic Missiles

In 2017, North Korea has launched four types of what appear to be new ballistic missiles that are different from the above.

The first is a new type of ballistic missile that appears to be a modified version of the SLBM for ground launch. This ballistic missile was launched on both February 12 and May 21, 2017, and is estimated to have flown approximately 500 km on both occasions, on somewhat higher trajectories than nominal.<sup>40</sup> If it were launched on a nominal trajectory, the firing range is expected 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 KWP Chairman Kim Jong-un had authorized its “operational deployment.” Moreover, the launch itself 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 the day after the launch, characteristics that it shares in common with the

SLBM. Based on factors including these announcements and the flight distance of the February 12 and May 21, 2017 launches, it is presumed that the ballistic missiles launched on those dates were a new type of ballistic missile that had been modified from an SLBM as a ground-launched type. Given that the firing range of this ballistic missile is estimated to exceed 1,000 km and that North Korea has made references to its deployment for operational deployment, there is a possibility that North Korea will newly deploy a new type of missile using solid fuel that includes Japan within its firing range.

The second is a new type of intermediate-range ballistic missile (IRBM). This ballistic missile was launched on May 14, 2017 and is presumed to have reached a height of over 2,000 km (the highest altitude reached was 2,111.5 km according to the North Korean announcement) and flew a distance of approximately 800 km for about 30 minutes.<sup>41</sup> 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 expected to be close to approximately 5,000 km as of this present time. A day after the launch, North Korea announced that it had successfully conducted the test launch of a newly developed ground-to-ground medium-to-long range strategic ballistic rocket. In addition, it can be confirmed from the images released by North Korea a day after the launch that the shape of the warhead of the launched ballistic missile is different from that of the Scud, Nodong or Musudan, and that although it was mounted on a wheel-drive TEL, it was launched from a simplified launch pad in the image of the actual launch. Furthermore, the straight-line exhausts characteristic of a liquid fuel propelled engine can be confirmed from the images released by North Korea, suggesting that the ballistic missile uses liquid fuel. In view of factors including these announcements by North Korea and the flight distance of the May 14 launch, it is presumed that a new type of IRBM using liquid fuel had been launched. Given that this ballistic missile appears to have displayed a certain level of function as an IRBM based on the flight distance, etc., together with the February 2016 launch of the variant of the long-range ballistic missile Taepodong-2 and the repeated launches of the medium-range ballistic missile

<sup>40</sup> A day after the February 12 launch, North Korea announced that it had conducted the launch by the high-angle launch method in consideration of the safety of nearby countries.

<sup>41</sup> A day after the May 14, 2017 launch, North Korea announced that it conducted it using the maximum angle launch system in consideration of the safety of neighboring countries.

Musudan, there is renewed concern over the increasing ranges of North Korea's ballistic missiles.

The third is a new type of ballistic missile that appears to be an improvement of the Scud missile. This ballistic missile was launched on May 29, 2017, and is presumed 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<sup>42</sup> on its 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. In addition, it can be confirmed that the missile has straight-line exhausts characteristic of a liquid fuel-propelled engine similar to existing Scud missiles. Given factors including these announcements by North Korea and the flight distance of the May 29, 2017 launch, it is presumed that the missile that was launched was a new type of ballistic

missile modified from the Scud missile. It is unclear how the newly developed ballistic rocket incorporating a precision navigation guidance system will perform. However, since North Korea announced that KWP Chairman Kim Jong-un instructed the development of a ballistic missile that can strike adversary ships and other individual targets with precision, the intent appears to be to enhance the accuracy of ballistic missile attacks.

According to images released by North Korea, these three types of ballistic missiles are similar in shape, etc to the ballistic missiles unveiled for the first time at the review of troops on April 15, 2017.

The fourth is a new type of intercontinental-range ballistic missile. 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. From this flight pattern, it is presumed that the ballistic missile was launched on a lofted trajectory and is believed to have a maximum range of at least more than 5,500 km. On the day of the launch, North Korea made an "important announcement"<sup>43</sup> and announced that it had successfully

<sup>42</sup> It is generally said that small wings on the warhead have the functions of stabilizing aerodynamics, navigating during flight, and enhancing precision.

<sup>43</sup> 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."

conducted a test launch of a new type of intercontinental ballistic missile. In addition, a day after the launch, North Korea announced that it had conducted a demonstration test of warhead reentry technology, from which it can be deemed that it is aiming at the operationalization of long-range ballistic missiles.

(g) Taepodong-1 and 2

Taepodong-1 and Taepodong-2 are long-range ballistic missiles launched from fixed launch pads. 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. Taepodong-1 may have been a transitory product for the development of Taepodong-2.

Taepodong-2 is believed to be a missile which uses 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 t. 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.<sup>44</sup> 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.

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 such as Musudan, KN-08 and SLBM and diversification of attack measure.

North Korea continues to claim that it will keep conducting "satellite launches" and will develop and launch more capable satellite launch vehicles. It is highly possible that North Korea will further develop its long-range ballistic missiles by repeating similar launches under the name of "satellite" launches, in order to carry out further technical tests to operationalize its long-range ballistic missiles. It has been suggested that North Korea is carrying out modification for upsizing its launch tower in Tongch'ang-ri district.<sup>45</sup> While the missile launched in February 2016 was similar in size to the Taepodong-2 variant launched in December 2012, North Korea may launch larger long-range ballistic missiles in the future. Furthermore, as launches from fixed launch pads are vulnerable to external attacks, North Korea may seek

<sup>44</sup> In June 2016, what appears to be a part of the fairing of the Taepodong-2 variant launched in February 2016, based on its appearance and other features, washed ashore and was discovered in the coast of Tottori Prefecture. The MOD has received it from Shimane Prefecture and was analyzing the details as of the end of June 2017.

<sup>45</sup> 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 m, enabling launches of rockets up to 50 m in height, larger than the Taepodong-2 variant (total height approx. 30 m) which was used in December 2012.

resiliency and survivability through building underground or silo launch facilities and launching from TELs.

(h) KN-08

The details of the new missile “KN-08” which was showcased at the military parade in April 2012 and July 2013 are unknown. However, the missile is believed to be an ICBM.<sup>46</sup> 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.<sup>47</sup> The U.S. DoD reportedly calls the new missile, considered a variant of the “KN-08,” the “KN-14.” Whereas the Taepodong-2 is launched from a fixed launch pad, 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.

#### b. Trends in Recent Ballistic Missile Launches

North Korea has repeatedly launched various types of ballistic missiles. Particularly in 2016, it conducted an unprecedented 20-plus launches, and continues to repeatedly conduct launches in 2017 including launches of what appear to be new types of missiles.

As for trends in North Korea’s ballistic missile launches, firstly, it appears that the country seeks to increase the firing range of ballistic missiles.<sup>48</sup> In February 2016, it launched a long-range ballistic missile (a Taepodong variant) which was disguised as a “satellite,” and in the same year repeatedly launched the IRBM Musudan considered to have Guam in its range. As for the new type of ballistic missile that is presumed to have been launched on a lofted trajectory on May 14, 2017, had it been launched on a nominal trajectory, it is expected to reach a maximum firing range of approximately 5,000 km as of this present time. As for the ballistic missile launched on July 4, 2017, it is deemed to be an intercontinental range ballistic missile<sup>49</sup>

since its maximum range appears to surpass at least 5,500 km in view of its altitude, flight distance, etc. 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”<sup>50</sup> and announced that it had demonstrated atmospheric re-entry technology for warheads on the July 4 launch.<sup>51</sup> It also announced that it conducted a static firing test of a new type of engine,<sup>52</sup> displaying an intention to seek to secure and enhance technology aimed at the operationalization of new medium- and long-range ballistic missiles. This has become a serious concern for relevant countries including Japan.

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

<sup>46</sup> 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.”

<sup>47</sup> 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.

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

<sup>49</sup> 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. In North Korea, a New Year’s Address by President Kim Il-sung had been given every year on January 1 up to 1994. Since the death of the president, from 1995 to 2012, a New Year’s Joint Editorial by the KWP bulletin Rodong Sinmun, the Korean People’s Army bulletin Joson Inmingun, and the Kimilsungist Youth League bulletin Youth Vanguard had been published in its place.

<sup>50</sup> 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.

<sup>51</sup> 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 July 4, 2017 launch.

<sup>52</sup> 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.



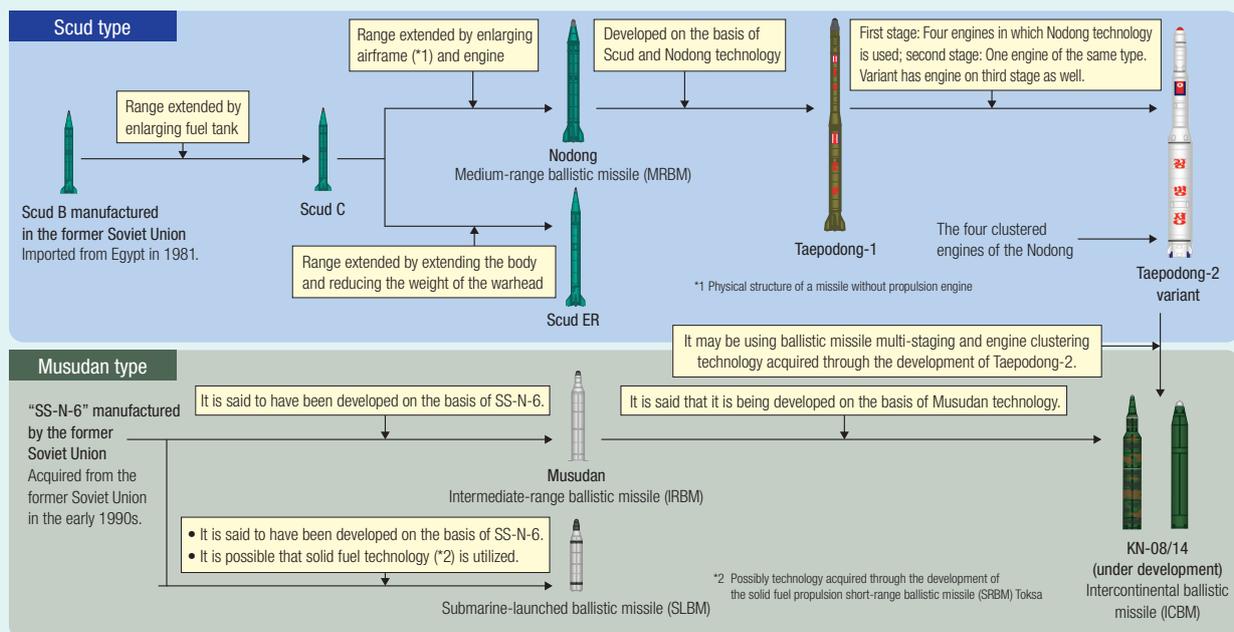
## History of North Korea's Ballistic Missile Development

It is deemed that North Korea began developing ballistic missiles in the 1970s, and currently possesses and is developing several types of ballistic missiles. They are considered to have been developed along two lines, those based on the Scud B manufactured in the former Soviet Union (Scud type) and those based on the submarine-launched ballistic missile SS-N-6 likewise manufactured by the former Soviet Union (Musudan type).

In 1981, North Korea is believed to have imported from Egypt the Scud B, a short-range solid fuel propulsion ballistic missile manufactured in the former Soviet Union with a firing range of approximately 300 km. The Scud C, Scud ER (Extended Range), Nodong, Taepodong-1, and Taepodong-2 and its variant are thought to have been developed on the basis of the Scud B. It is considered that North Korea was able to manufacture Scud B copies by the mid-1980s. From the mid-1980s onwards, North Korea created the Scud C, whose range was extended to approximately 500 km by enlarging the Scud B's fuel tank, and deployed it together with the Scud B. In addition, it appears that the Scud ER, whose range was extended to approximately 1,000 km by extending the Scud C's body and reducing the warhead weight, has also been deployed. The Nodong is a medium-range ballistic missile (MRBM) whose range is believed to reach approximately 1,300 km, created by enlarging the Scud airframe and engine, and is thought to have been already deployed. Taepodong-1 and Taepodong-2 and its variant are long-range ballistic missiles launched from fixed platforms, and are deemed to have been developed based on Scud and Nodong technology. It is presumed that the Taepodong-2 uses four engines using Nodong technology on the first stage and one such engine on the second stage. (The Taepodong-2 variant has three stages. The third stage also has an engine.)

The other ballistic missile that became the basis of North Korea's ballistic missile development is the SS-N-6, a liquid fuel propulsion submarine-launched ballistic missile (SLBM) manufactured by the former Soviet Union with a range of approximately 2,500-3,000 km, which it acquired from the Soviet Union in the early 1990s. It is believed to be the basis of the development of the intermediate-range ballistic missile (IRBM) Musudan and an SLBM.

The details of the progress of the development are unclear, but it has been pointed out that North Korea is developing the intercontinental ballistic missile (ICBM) KN-08/14 based on Musudan technology. North Korea may be using this missile for the development of the KN-08/14 ballistic missile multi-staging and engine clustering technology for extending the range acquired by developing the Taepodong-2. Furthermore, there is the possibility that the SLBM and the new type of ground-launched ballistic missile launched on February 12 and May 21, 2017 that appears to be based on an SLBM are using solid fuel technology acquired by developing the Toksa, a solid fuel propulsion short-range ballistic missile (SRBM).





## Ballistic Missiles Displayed at the Review of Troops

On April 15, 2017, the 105th anniversary of the birthday of the late President Kim Il-sung (Day of the Sun), North Korea conducted a review of troops (military parade) participated by KWP Chairman Kim Jong-un. At the review of troops, in addition to the medium-range ballistic missile (IRBM) Musudan (1), which had been launched for the first time in 2016, ballistic missiles that were newly displayed in 2017 were: a submarine-launched ballistic missile (SLBM) (2); a new type of ground-launched ballistic missile launched on February 12 and May 21, 2017 that appears to be based on an SLBM (3); a new type of IRBM-class ballistic missile launched on May 14, 2017 (4); and a new type of ballistic missile launched on May 29, 2017 that appears to be based on the Scud missile (5). Two other types presumed to be unconfirmed ballistic missiles were also on display.

As for the two types presumed to be unconfirmed ballistic missiles, one on display was mounted on a trailer-type vehicle (6) and is said to be an intercontinental ballistic missile (ICBM). However, it appears unclear whether a missile was encased in the canister. The second type on display was carried on a TEL similar to an eight-axle wheel-drive TEL for KN-08/14 (7). While the estimated length of the canister suggests that it could have been an ICBM, it appears unclear whether a missile was encased in the canister. It is possible that North Korea is developing a TEL-mounted ICBM different from the KN-08/14 that North Korea has already been said to possess.

It is necessary to continue to closely follow the various weapons that were displayed at this review of troops with serious concern.

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, of which three 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 KWP 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 on May 29, 2017 is a “ballistic missile that incorporates a precision navigation guidance system.” It is unclear how the ballistic missile will perform. However, based on the announcement that KWP Chairman Kim Jong-un has instructed the development of a ballistic missile that can conduct a precision attack on adversary vessels and other individual targets, 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 from submarines. In addition, the SLBMs repeatedly launched in 2016 and the new type of ballistic missile presumed to be modified from the SLBM as a ground-launched type and launched on February 12 and May 21, 2017 appear to use solid fuel. It is thus possible that North Korea is proceeding with the development of solid-fueled ballistic missiles. 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 and July 4, 2017 launches of the new type of 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 and realize longer-range ballistic missile capability and simultaneously achieve

the miniaturization of nuclear weapons and acquisition of nuclear warheads, etc., North Korea may come to have a one-sided understanding that it 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.

Coupled with its nuclear issue, North Korea’s ballistic missile issue has become more realistic and imminent for the Asia-Pacific region, including Japan, and for the international community from the perspective of both the improvement of the capability and transfer and proliferation, and thus such developments are profoundly worrisome.

## 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. Meanwhile, KWP Chairman Kim Jong-un underscores the importance of military strength and makes frequent visits to military organizations. In this light, the Chairman is anticipated to continue to attach importance to military strength.

Following the change in regime, KWP 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.<sup>53</sup> In 2014, the North Korean media stopped reporting the activities of Kim Kyong-hui, Secretary of the KWP and Kim Jong-un's aunt. 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.<sup>54</sup> These developments suggest that a generational change in the leadership may be taking place among the Kim dynasty.

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.

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.<sup>55</sup> 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.<sup>56</sup> However, with senior officials unable to dispute the decisions of KWP 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.<sup>57</sup> 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, countries including Japan and the United States have strengthened their sanctions. Along with these measures, if China, North Korea's largest trading partner, and other relevant countries rigorously implement the sanctions of the related UN Security Council resolutions in response to the implementation of nuclear tests and missile launches by North Korea, an even more severe economic situation could beset North Korea.

To tackle a host of economic difficulties, North Korea

<sup>53</sup> 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. The ROK National Intelligence Service reportedly briefed the National Assembly that the Minister was executed in late April 2015. 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. Additionally, since February 21, 2016, the North Korean media has introduced Ri Myong-su, previous Minister of People's Security, as Chief of General Staff Department instead of Ri Yong-gil. Ri Yong-gil was announced as an alternate member of the KWP Politburo at the KWP Congress in May 2016.

<sup>54</sup> 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. The media has also shown her supporting KWP Chairman Kim Jong-un on the podium during the celebration parade following the KWP Congress.

<sup>55</sup> 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, 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. All five members of the KWP Politburo Standing Committee are not 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.

<sup>56</sup> After the Supreme People's Assembly session in June 2016, state 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.

<sup>57</sup> In June 2017, the Food and Agriculture Organization of the United Nations (FAO) designated North Korea as a country requiring external assistance for food.

has made attempts at limited improvement measures and some changes to its economic management systems,<sup>58</sup> and promotes the establishment of economic development zones<sup>59</sup> and the enlargement of the discretion of plants and other entities over production and sales plans.<sup>60</sup> At the Seventh KWP Congress held in May 2016, the report on the work of the KWP Central Committee referred to the delays in the economic sector and identified the country's economic revitalization and raising the people's standard of living as the most important tasks. These all suggest North Korea is placing importance on the rebuilding of the 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.

## 5 Relations with Other Countries

### (1) Relations with the United States

North Korea has reacted sharply to the U.S.-ROK combined exercise, alleging that such activities were a manifestation of the U.S. "hostile policy" towards North Korea. In this regard, North Korea has repeatedly voiced strong criticisms against the United States and conducted military provocations such as ballistic missile launches. When the U.S.-ROK combined exercise was carried out from March to April 2017, North Korea reiterated its hardline arguments against the United States and repeatedly launched ballistic missiles.<sup>61</sup>

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 increased its presence in this region by such means as deploying a carrier strike group in April 2017 that had been scheduled to leave Singapore and call port in Australia to the Western Pacific. In addition, in the Joint Statement by Secretary of State Rex Tillerson, Secretary of Defense James Mattis, and Director of National

Intelligence Dan Coats released on April 26, 2017, it was declared that the U.S. policy towards North Korea aims to pressure North Korea into dismantling its nuclear, ballistic missile, and proliferation programs by tightening economic sanctions and pursuing diplomatic measures with its allies and regional partners. The United States has been enhancing its alliance relationships with Japan and the ROK and urging China more strongly to take relevant actions.

In response, North Korea has reiterated its claim from before that it needs its own nuclear deterrence in order to counter the nuclear threat from the United States and has repeatedly launched ballistic missiles, maintaining its posture of continuing its activities for nuclear and missile development.

### (2) Relations with the Republic of Korea

When North Korea conducted a nuclear test in January 2016 and went ahead with the launch of a ballistic missile disguised as a "Satellite" in February 2016, the ROK took measures such as resuming loudspeaker broadcasts targeting North Korea, deciding to begin formal talks between the ROK and the United States regarding the deployment of Terminal High Altitude Area Defense (THAAD) to U.S. Forces Korea,<sup>62</sup> and deciding to completely suspend operations at the Kaesong Industrial Complex. In response, North Korea declared the Kaesong Industrial Complex a military control zone, and announced that it would expel all ROK nationals from the zone and freeze their assets. When a U.S.-ROK combined exercise was carried out from March to April 2016, North Korea repeated provocative rhetoric and behavior, noting that the first target of attack would be the ROK Blue House, resulting in heightened tensions between the ROK and North Korea. Since the Seventh KWP Congress in May 2016, North Korea has proposed to the ROK to hold dialogue between their military authorities. However, the ROK has maintained that it would not agree to dialogue unless North Korea demonstrates its

<sup>58</sup> For example, North Korea conducted a so-called currency revaluation (decreasing the denomination of its currency) at the end of 2009. The currency revaluation is said to have led to economic disorder, such as price escalation due to shortfall of supply, which in turn increased social unrest.

<sup>59</sup> 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. In November 2013, the establishment of 1 special economic zone and 13 economic development zones was announced. In January 2015, it was reported that development plans for 13 economic development zones were established.

<sup>60</sup> 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 m<sup>2</sup>) of land would be allocated per person, with 40% of the agricultural products going to the state and 60% going to individuals.

<sup>61</sup> 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 combined exercise.

<sup>62</sup> 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.

intention to denuclearize with actions. Subsequently, in light of the September 2016 nuclear test and the repeated ballistic missile launches, the ROK announced its own new measures against North Korea in December 2016 in coordination with Japan and the United States.

Regarding its North Korea policy, the Moon Jae-in administration inaugurated in May 2017 has expressed its position on being open to dialogue but responding resolutely to provocations. The impact of the new administration's new policy towards North Korea on inter-Korean relations, where tension is rising, requires close attention.

### (3) Relations with China

The China-North Korea Treaty on Friendship, Cooperation and Mutual Assistance, which was concluded in 1961, is still in force.<sup>63</sup> In addition, China is currently North Korea's biggest trade partner. In 2015, 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),<sup>64</sup> suggesting North Korea's dependence on China.

With regard to the situation in North Korea and its nuclear issue, China has expressed support for the denuclearization on the Korean Peninsula and early resumption of the Six-Party Talks. In addition, when North Korea conducted a nuclear test in January 2016 and launched a ballistic missile disguised as a "Satellite" in February 2016, China expressed concerns towards excessive sanctions, stating that a destabilization on the Korean Peninsula must be avoided. Nevertheless, it endorsed UN Security Council Resolution 2270, which included a significant strengthening of sanctions against North Korea, including a ban in principle on exports or provision of aircraft fuel to North Korea and a ban in principle on coal and iron ore imports from North Korea. Moreover, China also endorsed UN Security Council Resolution 2321, adopted in November 2016 in light of North Korea's nuclear test in September, which bolsters the contents of related preceding resolutions, further tightening restrictions on the flow of people, material and funds to North Korea, in particular, establishing a limit on coal exports, which are a source of funds for North Korea.<sup>65</sup>

China is a vital political and economic partner for

North Korea and maintains a degree of influence on the country. North Korea does not necessarily adopt actions which are in line with the position of China over nuclear and ballistic missile issues. Furthermore, China has opposed the implementation of excessive sanctions on North Korea that could lead to destabilizing the Korean Peninsula. Given such circumstances, North Korea-China relations and China's influence on North Korea require continued attention.

### (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. After the nuclear test conducted by North Korea in February 2013, Russia issued a statement that condemned the test but opposed sanctions that could have implications on normal trade and economic relations with North Korea. When North Korea conducted a nuclear test in January 2016 and launched a ballistic missile disguised as a "Satellite" in February 2016, Russia condemned North Korea for violating UN Security Council resolutions, while maintaining a cautious stance towards rigorous sanctions, saying that an economic collapse in North Korea should be avoided, but ultimately agreed to UN Security Council Resolution 2270 in March 2016. As for UN Security Council Resolution 2321, adopted in November 2016 following North Korea's nuclear test in September, Russia advocated that while harsh measures had been adopted due to North Korean actions, the situation on the Korean Peninsula should not be used to enhance military presence in the region.

### (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<sup>66</sup> 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 April 2013, North Korea's attempt to export gas masks and other items to Syria was intercepted by Turkish authorities. In July of the same

<sup>63</sup> 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.

<sup>64</sup> According to an announcement by the Korea Trade-Investment Promotion Agency (KOTRA).

<sup>65</sup> In February 2017, China announced the provisional suspension of coal imports from North Korea for the remainder of the year.

<sup>66</sup> For example, the United Kingdom and Germany established diplomatic relations with North Korea in 2000 and 2001, respectively.

year, the North Korean vessel Chong Chon Gang sailing from Cuba to North Korea was seized by Panamanian authorities near the Panama Canal. As a result, contents of cargo that violated UN Security Council resolutions were confiscated, including MiG-21 fighters and a surface-to-air missile system.

In recent years, North Korea is deemed to be strengthening its relations with African countries, with North Korean senior officials paying visits to African countries.<sup>67</sup> 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.<sup>68</sup> The possibility that North Korea's illegal activities would provide a funding source for nuclear and ballistic missile development is a cause for concern.

In February 2017, a North Korean man was murdered in Malaysia and the Malaysian Government later confirmed that the man was Kim Jong-nam. The Malaysian police also announced that VX gas, whose production and use are banned by the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention), was detected from his body.

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

### 1 General Situation

In May 2017, the Moon Jae-in administration was inaugurated in the ROK. With regard to its North Korea policy, the administration has expressed its position on being open to dialogue but responding resolutely to provocations. The impact of the new administration's new policy towards North Korea on inter-Korean relations, where tension is rising, requires 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 a vital role in deterring the outbreak of large-scale armed conflicts 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.” However, the ROK presently uses the expression, “the North Korean regime and its armed forces...will remain as our enemies.”<sup>69</sup>

The ROK has continued to undertake reforms of its national defense.<sup>70</sup> In 2005, the ROK Ministry of National Defense announced the Defense Reform Basic Plan (2006-2020) including reduction of the number of troops, as part of the plan to transition from a “quantitative military structure centered on troop strength” to a “qualitative military structure centered on information and knowledge.” In 2009, in light of the changes in the situation such as the missile launches and nuclear tests by North Korea, it announced the Defense Reform Basic Plan (2009-2020), which explicitly referred to matters such as scaling down the reduction of the number of troops and the possibility of preemptive attacks on North Korea's nuclear and missile facilities. In August 2012, in light of the sinking of the ROK patrol boat and the bombardment of Yeonpyeong in 2010, the

<sup>67</sup> 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.

<sup>68</sup> The final report of the UN Security Council's Panel of Experts assisting the North Korea Sanctions Committee released in March 2017 makes references to the export of military communication equipment to Eritrea, the export of man-portable air-defense missile systems to Mozambique, and police and military cooperation in Uganda, among others.

<sup>69</sup> The ROK's Defense White Paper 2016 describes North Korea as follows: “[T]he constant military threats and provocations from North Korea are the primary security threats the ROK faces today. In particular, North Korea's weapons of mass destruction (WMD) including nuclear weapons and missiles, cyber-attacks and terrorism pose major threats to our national security. As long as these threats persist, the North Korean regime and its military will remain an enemy insofar as they are the agents carrying out these threats.”

<sup>70</sup> 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.

Defense Reform Basic Plan (2012-2030) was released,<sup>71</sup> 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,<sup>72</sup> 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.

### 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 213,000 tons; and the air forces (Air Force and Navy combined) consist of approximately 620 combat aircraft.

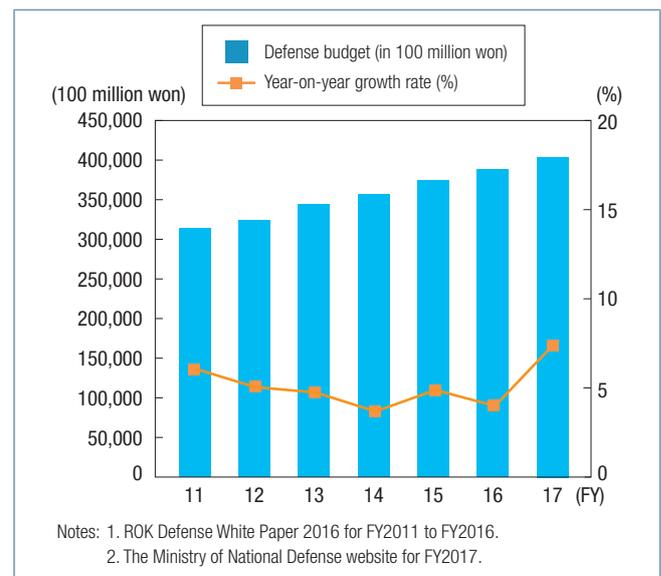
The ROK has been modernizing its military forces—not only its Army but also its Navy and Air Force—in order to establish an omnidirectional defense posture to deal with future potential threats, not least threats from North Korea. The Navy has been introducing submarines, large transport ships, and domestically 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 October 2012, the ROK Government announced

a revision of its missile guidelines stipulating the range of ballistic missiles it possesses; the revision includes the extension of their maximum range from 300 km to 800 km to enhance the deterrence against military provocation by North Korea. In addition, to address North Korean nuclear and missile threats, the ROK intends to expand the missile capabilities of the ROK Forces,<sup>73</sup> establish a system known as “Kill Chain” to conduct swift preemptive strikes using missiles and other assets,<sup>74</sup> and develop an indigenous missile defense system (Korea Air and Missile Defense [KAMD]).<sup>75</sup> In addition, in September 2016, in response to the implementation of the fifth nuclear test by North Korea, the ROK Ministry of National Defense announced that it would expand the existing “Kill Chain” and KAMD by adding the Korea Massive Punishment & Retaliation (KMPR) concept<sup>76</sup> and changing to a Korean-type three-axis system.

In recent years, the ROK has actively promoted equipment export, which reached approximately US\$3.5

Fig. 1-2-5 Changes in the ROK's Defense Budget



<sup>71</sup> 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.

<sup>72</sup> 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.

<sup>73</sup> In April 2012, the ROK Ministry of National Defense announced that the country has developed and already fielded missiles that include cruise missiles able to strike throughout North Korea. In February 2013, the ministry indicated that it would accelerate the development of 800 km-range ballistic missiles, possession of which was made possible by the revision of the missile guidelines in October 2012, and announced that it has fielded cruise missiles to be launched from vessels or submarines and capable of attacking the entire area of North Korea. Also in October, during an event commemorating the 65th anniversary of the founding of the armed forces, the ROK Forces displayed to the public for the first time the “Hyeonmu 2” ballistic missile, which is said to have a 300 km range, and the “Hyeonmu 3” surface-to-surface cruise missile, which is said to have a 1,000 km range. The ROK conducted successful test launches of a new ballistic missile with a range of 500 km in April 2014 and a new ballistic missile with a range of 800 km in June 2017.

<sup>74</sup> 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. It is noted that the system is comprised of ISR capabilities (reconnaissance drone and satellite), striking capabilities (F-35 fighter, air-to-surface missile, and new ballistic missile, etc.), and intercept capabilities (current PAC-2, as well as PAC-3 and indigenously built anti-air missile).

<sup>75</sup> 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.

<sup>76</sup> 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.”

billion on a contract value basis in 2015. Since 2006, the amount has increased by nearly 14-fold in nine years. It is reported that export items have diversified to include communication electronics, aircraft, and naval vessels.<sup>77</sup>

Defense spending in FY2017 (regular budget) increased by about 3.6% from the previous fiscal year to nearly KRW 40.3337 trillion, marking the 18th consecutive year of increases since 2000.

 See Fig. I-2-2-5 (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,<sup>78</sup> 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.<sup>79</sup> 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.<sup>80</sup> Additionally, after North Korea went ahead with its nuclear test in January 2016, the United States and the ROK began formal talks regarding deployment of THAAD to U.S. Forces Korea in February 2016 and officially decided in July to deploy them. Part of the system arrived in the ROK in March 2017, and its deployment to the designated site for operations commenced by the end of April. In addition, it was reported that in the U.S.-ROK combined exercise held from March to April 2017, around 300,000 ROK Forces personnel and around 13,000 U.S. Forces personnel participated, and a record number of troops

and equipment were mobilized including a carrier strike group for the second straight year.

At the same time, the two countries have worked to deal with such issues as the transition of OPCON to the ROK<sup>81</sup> and the realignment of U.S. Forces Korea. Despite these efforts, however, the two countries are pressed to revise their plans. 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 the ROK Forces meet conditions such as enhanced capabilities. This new approach does not present a specific deadline for the transition. However, since the central challenges to enhancing the capabilities of the ROK Forces are deemed to be the Kill Chain, KAMD, and KMPR three-axis system and these systems have the early 2020s as the target completion date, attention will be focused on their impact on the OPCON transition period.

<sup>77</sup> As for recent examples, in 2012, the ROK concluded an agreement to export three Type 209 submarines to Indonesia as well as an agreement to export four of the new Military Afloat Reach and Sustainability (MARS) vessels to the United Kingdom. In 2014, the ROK concluded an agreement to export 12 FA-50 light attack aircraft to the Philippines.

<sup>78</sup> 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.

<sup>79</sup> 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.

<sup>80</sup> 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.

<sup>81</sup> 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. In 2007, the two countries decided to dissolve the U.S.-ROK Combined Forces Command in April 2012 and to transition OPCON to the ROK. However, in June 2010, they agreed to postpone the transition timing to December 1, 2015 due to reasons, including North Korea's increased military threat.

With regard to the realignment of the U.S. Forces Korea,<sup>82</sup> 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. However, the relocation to the Pyeontaek area had been delayed due to logistical reasons, including increases in relocation costs. The decision to postpone the transition of OPCON that was made at the 46th SCM has in turn necessitated some U.S. Forces personnel to remain at Yongsan Garrison. In addition, the two countries decided that the counter-fires forces of the 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. These decisions have given rise to new factors that force the two countries to partially revise the plans. Accordingly, while the plans themselves would be maintained, their completion date was revised to "strive for completion in a timely manner." In May 2016, the ROK Ministry of National Defense announced that "The relocation to Pyeontaek of most of the units including the U.S. Forces Korea command is scheduled to be completed by 2017." These challenges are perceived to have significant impact on the U.S.-ROK defense postures on the Korean Peninsula. In this regard, relevant developments need to be followed closely.

## 5 Relations with Other Countries

### (1) Relations with China

China and the ROK have made continuous efforts to strengthen their relations. Recently, in February 2015, the Minister of National Defense of China visited the ROK for the first time in nine years, and in September 2015, then President Park Geun-hye visited China and attended the military parade that was part of the "commemorative event for the 70th anniversary of the victory of the Chinese people's war of resistance against Japanese aggression." In this regard, a trend in deepening the bilateral relations was observed among government leaders and senior officials.

Meanwhile, outstanding issues have emerged between China and the ROK. The "East China Sea Air Defense Identification Zone" (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, Jeodo (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. In addition, following North Korea's nuclear test in January 2016 and launch of a ballistic missile in February 2016, the deployment of THAAD by U.S. Forces Korea was officially decided in July 2016. Part of the system arrived in the ROK in March 2017, and its deployment to the designated site for operations commenced by the end of April. China has protested that the deployment of THAAD to the ROK would undermine China's strategic security interests.

### (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. At the ROK-Russia Summit in September 2008, they agreed to upgrade the bilateral relations to a "strategic cooperative partnership." 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.

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.

### (3) Overseas Activities

Since its dispatch of an engineering unit to Somalia in 1993, the ROK has participated in a number of UN peacekeeping operations (PKO). In December 2009, the ROK unveiled plans to substantially expand the number of personnel sent overseas on PKO missions from the current level.<sup>83</sup> In July 2010, the ROK created the "International Peace Support Force," a special unit

<sup>82</sup> 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.

<sup>83</sup> The ROK intends to further improve the legal and institutional foundations for the ROK Forces to expand their participation in PKO activities. In December 2009, an act concerning participation in UN PKO was enacted.

for overseas dispatch. Since March 2013, the ROK has dispatched troops composed primarily of engineering units to the United Nations Mission in the Republic of South Sudan (UNMISS).

Furthermore, the ROK has dispatched naval vessels to off the coast of Somalia and in the Gulf of Aden where they have been engaged in the protection of ROK-

registered ships and maritime security operations (MSO) of the Combined Maritime Forces (CMF). Since January 2011, the ROK has dispatched a ROK special forces unit for the purpose of supporting the training of the United Arab Emirates (UAE) special forces units, joint exercises, and protecting ROK nationals in emergency situations.