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

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

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

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

<table>
<thead>
<tr>
<th></th>
<th>North Korea</th>
<th>ROK</th>
<th>U.S. Forces in Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total armed forces</td>
<td>Approx. 1.28 million personnel</td>
<td>Approx. 625,000 personnel</td>
<td>Approx. 24,000 personnel</td>
</tr>
<tr>
<td>Army</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground troops</td>
<td>Approx. 1.1 million personnel</td>
<td>Approx. 490,000 personnel</td>
<td>Approx. 15,000 personnel</td>
</tr>
<tr>
<td>Tanks</td>
<td>T-62, T-54/-55, etc. Approx. 3,500</td>
<td>M-48, K-1, T-80 etc. Approx. 2,510</td>
<td>M-1</td>
</tr>
<tr>
<td>Navy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naval vessels</td>
<td>Approx. 780; 111,000 tons</td>
<td>Approx. 240; 215,000 tons</td>
<td>Supporting corps only</td>
</tr>
<tr>
<td>Destroyers</td>
<td>4</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Frigates</td>
<td>20</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Submarines</td>
<td></td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Marines</td>
<td>Approx. 29,000 personnel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Force</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combat aircraft</td>
<td>Approx. 550</td>
<td>Approx. 640</td>
<td></td>
</tr>
<tr>
<td>3rd and 4th generation fighter aircraft</td>
<td>Mig-23 x 56</td>
<td>F-4 x 60</td>
<td>F-16 x 60</td>
</tr>
<tr>
<td></td>
<td>Mig-29 x 18</td>
<td>F-16 x 163</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Su-25 x 34</td>
<td>F-15 x 60</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>Approx. 25.25 million</td>
<td>Approx. 51.18 million</td>
<td></td>
</tr>
<tr>
<td>Term of service</td>
<td>Men: 12 years</td>
<td>Army: 21 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Women: 7 years</td>
<td>Navy: 23 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Air Force: 24 months</td>
<td></td>
</tr>
</tbody>
</table>

Note: Data from “The Military Balance 2018,” etc. Data for the troop strength of the United States Forces Korea (USFK) from U.S. DoD information (December 2017).
North Korea has been advocating the building of a strong socialist state in all areas—ideology, politics, military affairs, and economy, 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 North Korean People’s Army (KPA) acting as the central and main force. In fact, leader Kim Jong-un, Chairman of the State Affairs Commission, who is in a position to control the military, noted the importance of military power: “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 2018, the proportion of the defense budget in the FY2017 national budget was 15.9%. 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 six nuclear tests so far and repeatedly launching as many as 40 ballistic missiles since 2016, and by maintaining and strengthening large-scale special operations forces. In addition, North Korea repeatedly uses provocative rhetoric and behavior against relevant countries, including Japan.

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

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

### KEY WORD

**Ballistic missiles**

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-Range Ballistic Missile (SRBM)</td>
<td>Under approx. 1,000 km or less</td>
</tr>
<tr>
<td>Medium-Range Ballistic Missile (MRBM)</td>
<td>Approx. 1,000 km – Under approx. 3,000 km</td>
</tr>
<tr>
<td>Intermediate-Range Ballistic Missile (IRBM)</td>
<td>Approx. 3,000 km – Under approx. 5,500 km</td>
</tr>
<tr>
<td>Intercontinental Ballistic Missile (ICBM)</td>
<td>Approx. 5,500 km or more</td>
</tr>
</tbody>
</table>

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).
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.

Commentary

View of North Korea’s nuclear weapons and missiles

North Korea has conducted three nuclear tests and launched 40 ballistic missiles since 2016. During 2017, it carried out a nuclear test with an estimated yield roughly 10 times the scale of the Hiroshima-type atomic bomb, launched a new intercontinental-range ballistic missile into Japan’s EEZ, and launched two ballistic missiles that flew over Japan. These military developments by North Korea pose an unprecedentedly serious and imminent threat to Japan’s security and undermine peace and security of the region and the international community.

Kim Jong-un, Chairman of the State Affairs Commission, expressed interest in North-South dialogue in his New Year’s address given on January 1, 2018. This was followed by a summit meeting between the Republic of Korea and North Korea in April 2018 at which Chairman Kim Jong-un expressed his intention to work toward denuclearization. Furthermore, at the United States-North Korea summit meeting held in June 2018, North Korea has made clear its intention to work toward the complete denuclearization of the Korean Peninsula, and confirmed that negotiations would continue with the United States. It is significant that Chairman Kim Jong-un has made another clear promise in a written document to work toward the complete denuclearization of the Korean Peninsula.

It is important to carefully assess specific actions by North Korea to dismantle nuclear and missile capabilities.

At the same time, taking into consideration the fact that North Korea possesses and deploys several hundred Nodong missiles capable of reaching almost every part of Japan as well as advancements in the development and operational capabilities of nuclear weapons and missiles through repeated nuclear tests and ballistic missile launches to date, etc., there is no change in our basic recognition concerning the threat of North Korea’s nuclear weapons and missiles.

The Ministry of Defense and Self Defense Forces continue to do their utmost in gathering intelligence, monitoring the situation, and implementing other activities to be ready for any circumstances, while also collaborating closely with the United States and Republic of Korea, in order to carry out the responsibility of protecting the lives and peaceful existence of the Japanese population.
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). North Korea’s military forces are comprised mainly of ground forces, with a total troop strength of roughly 1.28 million. While North Korea’s military forces are believed to have been maintaining and enhancing their capabilities and operational readiness, most of its equipment is outdated. Meanwhile, North Korea has forces such as largescale special operations force that can conduct various operations ranging from intelligence gathering and sabotage, to guerrilla warfare. Moreover, North Korea seems to have many underground military-related installations across its territory.

(2) Military Capabilities

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

The Navy has about 780 ships with a total displacement of approximately 111,000 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 550 combat aircraft, most of which are out-of-date models made in China or the former Soviet Union. However, some fourth-generation aircraft such as MiG-29 fighters and Su-25 attack aircraft are also included. North Korea has a large number of outdated An-2 transport aircraft as well, which are believed to be used for transportation of special operations forces. In addition, North Korea has so-called asymmetric military capabilities, namely, special operations force whose size is estimated at 100,000 personnel. In recent years, North Korea is seen to be placing importance on and strengthening its cyber forces.

3 WMD and Ballistic Missiles

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

North Korea’s development of WMDs and missiles is considered to have made further strides through going ahead with the sixth nuclear test and repeating ballistic missile launches. Coupled with its provocative rhetoric

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6 The Four Military Guidelines were adopted at the fifth plenary meeting of the fourth KWP Central Committee in 1962.
7 According to “The Military Balance 2014,” North Korea is replacing Soviet-made T-54 and T-55 tanks with the Ch’omma-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.
8 It has 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.”
9 The U.S. Director of National Intelligence’s “Worldwide Threat Assessment” of February 2016 notes, “North Korea probably remains capable and willing to launch disruptive or destructive cyber attacks to support its political objectives.” The 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. According to North Korean cyber attacks, see Chapter 3, Section 5.
and behavior, such as suggesting a missile attack on Japan, North Korea’s development of WMDs and missiles poses an unprecedentedly serious and imminent threat to the security of Japan and seriously undermine the peace and security of the region and the international community. Additionally, such development poses a serious challenge to the entire international community with regard to the non-proliferation of weapons, including WMDs.

On the other hand, at the Plenary Meeting of the Central Committee of the KWP held on April 20, 2018, decisions were made to discontinue “nuclear test and inter-continental ballistic rocket test-fire,” and to dismantle the northern nuclear test ground. In the subsequent inter-Korean summit meeting held on April 27, North Korea expressed its intention to work towards denuclearization. Then, on May 24, international press representatives were invited to witness the destruction of the northern nuclear test ground. Looking to the future, it will be necessary to continue to carefully monitor moves by North Korea, including what kind of concrete actions it will take towards realizing the dismantlement of all weapons of mass destruction and all ballistic missiles in a complete, verifiable and irreversible manner.

(1) Nuclear Weapons

Details of the current status of North Korea's nuclear weapons program are largely unclear, partly because North Korea remains an extremely closed regime. In light of the unclear status of past nuclear developments, and considering North Korea has already conducted six nuclear tests including the nuclear test in September 2017, it is conceivable that North Korea has made considerable progress in its nuclear weapons program. With regard to plutonium, a fissile material that can be used for nuclear weapons, North Korea has suggested its production and extraction on several instances.11 Moreover, in June 2009, North Korea announced that it would weaponize all of its newly extracted plutonium.12 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.13 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.14

With regard to the development of nuclear weapons, North Korea has conducted nuclear tests in October

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

11 North Korea announced in October 2003 that it had completed the reprocessing of 8,000 used fuel rods that contain plutonium, and in May 2005 that it had completed extraction of an additional 8,000 used fuel rods.

12 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.

13 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.

14 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.”
It is believed that North Korea seeks to miniaturize nuclear weapons and develop them into warheads that can be mounted on ballistic missiles, as part of its nuclear weapons program. On September 3, 2017, it was announced that Chairman Kim Jong-un had visited North Korea’s Nuclear Weapons Institute and had seen a hydrogen bomb capable of being loaded into an ICBM, in addition to which, following North Korea’s sixth nuclear test that was forced through on the same day, North Korea announced that it “successfully carried out a test of H-bomb for ICBM.” In general, miniaturizing a nuclear weapon small enough to be mounted on a ballistic missile requires a considerably high degree of technological capacity. However, considering, for example, that the United States, the former Soviet Union, the United Kingdom, France, and China succeeded in acquiring such technology by as early as the 1960s, as well as the technological maturity that is estimated to have been reached through North Korea’s previous six nuclear tests, it is possible that North Korea has achieved the miniaturization of nuclear weapons and has developed nuclear warheads.

Furthermore, the yield of the sixth nuclear weapons test in 2017 was estimated to be the largest ever, with a maximum yield of approximately 160kt. Given the size of the estimated yield, the possibility cannot be discounted that the test was of a hydrogen bomb. Although North Korea asserted that the fourth nuclear test conducted in January 2016 was a hydrogen bomb test, given that the estimated yield was 6-7kt, it is doubtful that a general hydrogen bomb test was conducted at that time. In any case, 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 an unprecedentedly serious and imminent threat to the security of Japan, and seriously undermine peace and security of the region and international community. Therefore, it can never be tolerated.

b. Background of the Nuclear Program

As regards the objective of North Korea’s nuclear development, North Korea is deemed to be developing nuclear weapons as an indispensable deterrent for maintaining the existing regime in light of the following: North Korea’s ultimate goal is allegedly the maintenance of the existing regime, North Korea considers that it needs its own nuclear deterrence to counter the nuclear threat of the United States and is in no position at least in the short-term to overturn its inferiority in conventional

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15 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.

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

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

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

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

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

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

22 Over ten years have already passed since North Korea conducted its first nuclear test in October 2006. Furthermore, North Korea has conducted six nuclear tests to date. This timetable for technology development and the number of tests are reaching levels that are by no means inadequate, even when compared to the processes of developing technologies to miniaturize and lighten nuclear weapons in the United States, former Soviet Union, 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.”

23 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.


25 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.
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, 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.” 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 nuclear deterrence is robust, and thereby increases the effectiveness of its war deterrent and defense force. At the Seventh KWP Congress and also in the “New Year’s Address” of January 2018, it made clear that it would remain steadfast to this policy. At the Plenary Meeting of the Central Committee of the KWP in April 2018, in addition to declaring the “Byungjin line” was successfully carried out, North Korea declared that among other things, it had determined to “concentrate all efforts on building a powerful socialist economy and markedly improving the standard of people’s living through the mobilization of all human and material resources of the country.”

With regard to the issue of North Korea’s development of nuclear weapons, 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 achieved, and the Six-Party Talks has been suspended since December 2008. At the first-ever U.S.-North Korea summit meeting held on June 12, 2018, Chairman Kim Jong-un made clear his intention to work towards the complete denuclearization of the Korean Peninsula, and confirmed that negotiations would continue with the United States. Based on the outcomes of the U.S.-North Korea summit meeting it is now necessary to work closely with the United States and the ROK and cooperate with the international community, including China and Russia, to elicit concrete actions from North Korea towards the dismantlement of all weapons of mass destruction and ballistic missiles of all ranges in a complete, verifiable and irreversible manner.

(2) Biological and Chemical Weapons
North Korea is an extremely closed regime. 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. Possession of sarin, VX, mustard and other chemical weapons, and of anthrax, smallpox, pest and other biological agents that could be used as biological weapons have been pointed out. The possibility cannot be denied that North Korea is able to load biological and/or chemical weapons on warheads.

(3) Ballistic Missiles
As is the case with WMDs, many of the details of North Korea’s ballistic missiles are unknown, partly owing to the country’s extremely closed regime. It appears, however, that North Korea gives high priority to the development of ballistic missiles out of political and
diplomatic considerations and from the viewpoint of earning foreign currency,\(^\text{30}\) in addition to enhancing its military capabilities. The ballistic missiles currently deemed to be possessed and developed by North Korea are the following.\(^\text{31}\)

### Fig. I-2-2-2 (Ballistic Missiles developed/Possessed by North Korea)

**Transporter-Erector-Launcher (TEL)**

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

The type of TEL differs according to the length and weight of the ballistic missile. The Scud, Nodong and Musudan are mounted on a four-, five-, and six-axle wheel drive TEL respectively. The new type of intercontinental-range ballistic missile launched on July 4 and 28, and the KN-08/14 are mounted on an eight-axle wheel-driven TEL, and the intercontinental-range ballistic missile believed to be a new type that was launched on November 29 appears to have been mounted and transferred on a nine-axle wheel-driven TEL. 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-driven TEL.

As for a TEL-mounted missile launch, it is deemed difficult to detect individual specific signs in advance concerning the detailed location and timing of the launch. This is because it is operated by being mounted and transported on a TEL, and furthermore, military-related underground facilities are thought to exist nationwide. Along with activities related to the development of ballistic missiles, developments related to the building of TELS require close watch as they concern the operational capabilities of ballistic missiles by North Korea.

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**Fig. I-2-2-3 (Image released by North Korea picturing the launch of a ballistic missile with ICBM range (estimated) (November 2017))**

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

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

**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.\(^\text{32}\)

**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,\(^\text{33}\) and it appears that a part of Japan falls within this range.

In addition, North Korea is developing a ballistic missile that appears to be an improvement of the Scud missile. This ballistic missile was launched on May 29, 2017, and is presumed to have flown approximately 400 km and fallen into Japan’s exclusive economic zone (EEZ). A day after the launch, North Korea announced that it had successfully conducted a test launch of a newly developed ballistic rocket incorporating a precision navigation guidance system. In addition, while the images released by North Korea show that the ballistic missile was launched from a continuous track TEL and had what appears to be small wings\(^\text{34}\) 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. Another similarity is that it can be confirmed that the missile has straight-line exhausts characteristic of a liquid fuel-propelled engine. It has also been noted that this ballistic missile is equipped with a maneuverable re-entry vehicle (MaRV).\(^\text{35}\) Given that North Korea announced that Chairman Kim Jong-un

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30 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.

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

32 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.”

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

34 For example, according to “Jane’s Sentinel Security Assessment China and Northeast Asia” (accessed in April 2018), the launch on May 29, 2017, was presumed to have been the first launch of a short-range ballistic missile based on a Scud missile, equipped with a maneuverable re-entry vehicle (MaRV), suggesting that North Korea has made advances in its precision guidance systems.
Fig. I-2-2-2  Ballistic Missiles developed/Possessed by North Korea

<table>
<thead>
<tr>
<th>Name</th>
<th>Range</th>
<th>Fuel</th>
<th>Operation platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toksa</td>
<td>approx. 120 km</td>
<td>Solid</td>
<td>TEL</td>
</tr>
<tr>
<td>Scud B, C, ER,</td>
<td>approx. 300 km</td>
<td>Liquid</td>
<td>TEL</td>
</tr>
<tr>
<td>Modified</td>
<td>approx. 1,000km/ Approx. 1,500 km</td>
<td>Liquid</td>
<td>TEL</td>
</tr>
<tr>
<td>Rodong Modified</td>
<td>approx. 1,300 km/ Approx. 1,500 km</td>
<td>Liquid</td>
<td>TEL</td>
</tr>
<tr>
<td>Musudan</td>
<td>approx. 2,500-4,000 km</td>
<td>Liquid</td>
<td>TEL</td>
</tr>
<tr>
<td>SLBM</td>
<td>1,000 km or more</td>
<td>Solid</td>
<td>TEL</td>
</tr>
<tr>
<td>SLBM modified</td>
<td>1,000 km or more</td>
<td>Solid</td>
<td>TEL</td>
</tr>
<tr>
<td>for ground launch</td>
<td>Approx. 5,000 km</td>
<td>Solid</td>
<td>TEL</td>
</tr>
<tr>
<td>IRBM-class</td>
<td>Approx. 5,000 km</td>
<td>Liquid</td>
<td>TEL</td>
</tr>
<tr>
<td>ICBM-class</td>
<td>5,500 km or more</td>
<td>Liquid</td>
<td>TEL</td>
</tr>
<tr>
<td>New type,</td>
<td>10,000 km or more*</td>
<td>Liquid</td>
<td>TEL</td>
</tr>
<tr>
<td>Taepodong-2</td>
<td>10,000 km or more (ICBM reportedly)</td>
<td>Liquid</td>
<td>TEL launch site</td>
</tr>
<tr>
<td>variant KN-08</td>
<td>5,500 km or more</td>
<td>Liquid</td>
<td>TEL</td>
</tr>
<tr>
<td>KN-14</td>
<td>(ICBM reportedly)</td>
<td>Liquid</td>
<td>TEL</td>
</tr>
</tbody>
</table>

* Based on warhead weight, etc.

Fig. I-2-2-3  Image released by North Korea picturing the launch of a ballistic missile with ICBM range (estimated) (November 2017)

Taepodong-2 Variant
New type of intercontinental-range ballistic missile “Hwasong 15” 
(Range: more than 10,000km*)

* Depends on weight of the warhead, etc.

Intercontinental-range ballistic missile “Hwasong 14” 
(Range: more than 5,500km)

IRBM “Hwasong 12” 
(Range: approx. 5,000km)

Range Estimation from Pyongyang:
- Nodong (range: approx. 1,300km/1,500km)
- Scud-ER (range: approx. 1,000km)
- Musudan (range: approx. 2,500 to 4,000km)

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

#### 2015 and earlier

<table>
<thead>
<tr>
<th>Date</th>
<th>Presumed type of missile</th>
<th>Number of launches</th>
<th>Location</th>
<th>Flight distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993/5/29</td>
<td>Nodong (possible)</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>1998/8/31</td>
<td>Taepodong-1</td>
<td>1</td>
<td>Taepodong Area</td>
<td>Approx. 1,600 km</td>
</tr>
<tr>
<td>2006/7/5</td>
<td>Scud and Nodong</td>
<td>6</td>
<td>Kittaeryŏng Area</td>
<td>Approx. 400 km</td>
</tr>
<tr>
<td>2006/7/5</td>
<td>Taepodong-2</td>
<td>1</td>
<td>Taepodong Area</td>
<td>Unknown, presumed to have failed</td>
</tr>
<tr>
<td>2009/4/5</td>
<td>Taepodong-2 or variant</td>
<td>1</td>
<td>Taepodong Area</td>
<td>3,000 km or more</td>
</tr>
<tr>
<td>2009/7/4</td>
<td>Scud or Nodong</td>
<td>7</td>
<td>Kittaeryŏng Area</td>
<td>Maximum approx. 450 km</td>
</tr>
<tr>
<td>2012/4/13</td>
<td>Taepodong-2 or variant</td>
<td>1</td>
<td>Tongch’ang-ri Area</td>
<td>Unknown, presumed to have failed</td>
</tr>
<tr>
<td>2012/12/12</td>
<td>Taepodong-2 variant</td>
<td>1</td>
<td>Tongch’ang-ri Area</td>
<td>Approx. 2,600 km (second stage landfall)</td>
</tr>
<tr>
<td>2014/3/3</td>
<td>Scud</td>
<td>2</td>
<td>Near Wonsan</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>2014/3/26</td>
<td>Nodong</td>
<td>2</td>
<td>Near Sukchon</td>
<td>Approx. 650 km</td>
</tr>
<tr>
<td>2014/6/29</td>
<td>Scud</td>
<td>2</td>
<td>Near Wonsan</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>2014/7/9</td>
<td>Scud</td>
<td>2</td>
<td>Approx. 100 km south of Pyongyang</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>2014/7/13</td>
<td>Scud</td>
<td>2</td>
<td>Near Kaesong</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>2014/7/26</td>
<td>Scud</td>
<td>1</td>
<td>Approx. 100 km west of Haeju</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>2014/5/32</td>
<td>Scud</td>
<td>2</td>
<td>Near Nampo</td>
<td>Approx. 500 km</td>
</tr>
</tbody>
</table>

#### 2016

<table>
<thead>
<tr>
<th>Date</th>
<th>Presumed type of missile</th>
<th>Number of launches</th>
<th>Location</th>
<th>Flight distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016/2/7</td>
<td>Taepodong-2 variant</td>
<td>1</td>
<td>Tongch’ang-ri</td>
<td>Approx. 2,500 km (second stage landfall)</td>
</tr>
<tr>
<td>2016/3/10</td>
<td>Scud</td>
<td>2</td>
<td>Near Nampo</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>2016/3/18</td>
<td>Nodong</td>
<td>1</td>
<td>Near Sukchon</td>
<td>Approx. 800 km</td>
</tr>
<tr>
<td>2016/4/15</td>
<td>Musudan (indicated)</td>
<td>1</td>
<td>East coast area</td>
<td>Unknown, presumed to have failed</td>
</tr>
<tr>
<td>2016/4/23</td>
<td>&quot;Pukkuksong&quot;</td>
<td>1</td>
<td>Off the coast of Sinpo</td>
<td>Approx. 30 km (ROK Joint Chiefs of Staff)</td>
</tr>
<tr>
<td>2016/4/28</td>
<td>Musudan</td>
<td>2</td>
<td>Wonsan</td>
<td>Unknown, presumed to have failed</td>
</tr>
<tr>
<td>2016/5/31</td>
<td>Musudan (possible)</td>
<td>1</td>
<td>Wonsan</td>
<td>Unknown, presumed to have failed</td>
</tr>
<tr>
<td>2016/6/22</td>
<td>Musudan</td>
<td>2</td>
<td>Wonsan</td>
<td>First: Approx. 100 km (maximum); Second: Approx. 400 km</td>
</tr>
<tr>
<td>2016/7/9</td>
<td>&quot;Pukkuksong&quot;</td>
<td>1</td>
<td>Off the coast of Sinpo</td>
<td>A few kilometers (ROK media reports)</td>
</tr>
<tr>
<td>2016/7/19</td>
<td>Scud and Nodong</td>
<td>3</td>
<td>Near Hwangju</td>
<td>First: Approx. 400 km; Third: Approx. 500 km</td>
</tr>
<tr>
<td>2016/8/3</td>
<td>Nodong</td>
<td>2</td>
<td>Near Unonyul</td>
<td>Approx. 1,000 km (the first exploded right after launch)</td>
</tr>
<tr>
<td>2016/8/24</td>
<td>&quot;Pukkuksong&quot;</td>
<td>1</td>
<td>Oear Sinpo</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>2016/9/5</td>
<td>Scud ER</td>
<td>3</td>
<td>Near Hwangju</td>
<td>Approx. 1,000 km</td>
</tr>
<tr>
<td>2016/10/15</td>
<td>Musudan</td>
<td>1</td>
<td>Near Kusong</td>
<td>Unknown, presumed to have failed</td>
</tr>
<tr>
<td>2016/10/20</td>
<td>Musudan</td>
<td>1</td>
<td>Near Kusong</td>
<td>Unknown, presumed to have failed</td>
</tr>
</tbody>
</table>

#### 2017

<table>
<thead>
<tr>
<th>Date</th>
<th>Presumed type of missile</th>
<th>Number of launches</th>
<th>Location</th>
<th>Flight distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017/2/12</td>
<td>Ground-launched ballistic missile modified from &quot;Pukkuksong-2&quot;</td>
<td>1</td>
<td>Near Kusong</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>2017/3/6</td>
<td>Scud ER</td>
<td>4</td>
<td>Near Tongch’ang-ri</td>
<td>Approx. 1,000 km</td>
</tr>
<tr>
<td>2017/3/22</td>
<td>Under analysis</td>
<td>1</td>
<td>Near Wonsan</td>
<td>Exploded within seconds of launch, presumed to have failed</td>
</tr>
<tr>
<td>2017/4/5</td>
<td>Under analysis</td>
<td>1</td>
<td>Near Sinpo</td>
<td>Approx. 60 km</td>
</tr>
<tr>
<td>2017/4/16</td>
<td>Under analysis</td>
<td>1</td>
<td>Near Sinpo</td>
<td>Exploded right after launch, presumed to have failed</td>
</tr>
<tr>
<td>2017/4/29</td>
<td>Under analysis</td>
<td>1</td>
<td>Near Pukch’ang</td>
<td>Fell inland approx. 50 km away, presumed to have failed</td>
</tr>
<tr>
<td>2017/5/14</td>
<td>IRBM-class ballistic missile &quot;Hwasong-12&quot;</td>
<td>1</td>
<td>Near Kusong</td>
<td>Approx. 800 km</td>
</tr>
<tr>
<td>2017/5/21</td>
<td>Ground-launched ballistic missile modified from &quot;Pukkuksong-2&quot;</td>
<td>1</td>
<td>Near Pukch’ang</td>
<td>Approx. 500 km</td>
</tr>
<tr>
<td>2017/5/29</td>
<td>Ballistic missile modified from Scud missile</td>
<td>1</td>
<td>Near Wonsan</td>
<td>Approx. 400 km</td>
</tr>
<tr>
<td>2017/7/4</td>
<td>Intercontinental-range ballistic missile &quot;Hwasong-14&quot;</td>
<td>1</td>
<td>Near Kusong</td>
<td>Approx. 900 km</td>
</tr>
<tr>
<td>2017/7/28</td>
<td>Intercontinental-range ballistic missile &quot;Hwasong-14&quot;</td>
<td>1</td>
<td>Near Mupyong-ri</td>
<td>Approximately 1,000 km</td>
</tr>
<tr>
<td>2017/8/29</td>
<td>IRBM-class ballistic missile &quot;Hwasong-12&quot;</td>
<td>1</td>
<td>Near Sunan</td>
<td>Approximately 2,700 km</td>
</tr>
<tr>
<td>2017/9/15</td>
<td>IRBM-class ballistic missile &quot;Hwasong-12&quot;</td>
<td>1</td>
<td>Near Sunan</td>
<td>Approximately 3,700 km</td>
</tr>
<tr>
<td>2017/11/29</td>
<td>New type of Intercontinental-range ballistic missile &quot;Hwasong-15&quot;</td>
<td>1</td>
<td>Near Pyongsong</td>
<td>Approximately 1,000 km</td>
</tr>
</tbody>
</table>

* North Korean names in parentheses*)
had ordered the development of ballistic missiles capable of precision attacks on enemy ships and other individual targets, the intent appears to be to enhance the accuracy of ballistic missile attacks.

(c) Nodong

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

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

(d) Submarine-Launched Ballistic Missile (SLBM)

It has been suggested that North Korea is developing an SLBM and a new submarine which is designed to carry the SLBM (referred to by North Korea as “Pukguksong”). Since it announced in May 2015 through its media that it conducted a successful test launch of an SLBM, it has made public SLBM launches on four occasions. 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.

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. 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.

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

(e) Ballistic missile modified from the SLBM

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

(f) Intermediate-range ballistic missile (IRBM)

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

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

In 2016 North Korea conducted repeated launches of an IRBM that is presumed to be the Musudan, but although the missile launched in June flew for a certain distance on a lofted trajectory, the fact that there were two successive launch failures in October would suggest that there may still be obstacles remaining towards the operationalization of the Musudan and that North Korea may be concentrating on the development and operationalization of the “Hwasong-12” as an IRBM instead.

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

Based on images released by North Korea, the ballistic missiles launched on July 4 and 28 have the following in common with the IRBM launched on May 14: (1) the engine system consists of one main engine and four auxiliary engines, (2) the shape of the lower part of the propulsion system is conical, and (3) the straight-line flame of liquid-propulsion systems can be confirmed. Based on these facts and the respective ranges that can be estimated for the missiles, the possibility can be deduced that the intercontinental-range ballistic missiles that were launched on July 4 and 28 were developed on the basis of the new-type IRBM that had been launched on May 14.

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

(h) New type of intercontinental-range ballistic missile
   (Launched on November 29, 2017)
On November 29, 2017, North Korea launched a single missile that is presumed to have been a new type of intercontinental-range ballistic missile (referred to by North Korea as “Hwasong-15”) different to the missiles described in (g) above. The missile reached a height of well over 4,000 km, and is estimated to have flown approximately 53 minutes, covering a distance of approximately 1,000 km before falling into Japan’s EEZ. From this flight pattern it is presumed that the missile was launched on a lofted trajectory. On the day of the launch, North Korea made an “government statement,” declaring that it had successfully conducted a test launch of the “Hwasong-15,” a newly developed type of ICBM with the capability to strike all areas of the U.S. mainland, and asserting that it had now completed development of its
North Korea launched an intercontinental-range ballistic missile twice in July 2017 and once in November 2017 and asserted that “all of the mainland United States is within range for nuclear attack” in the New Year’s address given in January 2018.

Generally, realization of an ICBM as a weapon requires (1) a range of at least 5,500km, (2) miniaturization of nuclear weapon and acquisition of nuclear warhead, and (3) atmospheric reentry technology.

Regarding range (1), the intercontinental-range ballistic missile launched twice in July 2018 (referred to by North Korea as Hwasong-14) appears to have a range of at least 5,500km based on the flight distance, altitude, and other points. Additionally, the new intercontinental-range ballistic missile (referred to by North Korea as Hwasong-15) launched in November 2018 might exceed 10,000km depending on the warhead weight and other aspects.

Regarding development of miniaturization of nuclear weapons and acquisition of nuclear warhead (2), North Korea might have reached this level in light of the more than 10 years elapsed since conducting the first nuclear test in 2006 and the technological maturity estimated to have been reached through a total of six nuclear tests.

Regarding atmospheric reentry technology (3), heat protection technology that prevents deformation, destruction, and other damage to the nuclear warhead on reentry into the atmosphere after the ballistic missile has been launched and leaves the atmosphere is particularly important. While North Korea has repeatedly claimed to have verified this technology, it is still necessary to carefully analyze whether North Korea has actually verified this technology.

North Korea is deemed to accumulate related technologies through repeated launches of ballistic missiles. Given this reality, it is necessary to establish even further readiness in order to protect the lives and property of the Japanese people and defend Japan’s territories, seas, and airspace.

If North Korea made further progress in the development of ballistic missiles and demonstrated the atmospheric reentry technology, etc., could unilaterally gain recognition of having strategic deterrence against the United States. Overconfidence or miscalculation of this deterrence by North Korea might lead to increased and more serious military provocations in the region. Japan thinks this situation could warrant substantial concern.

Some observers suggest that North Korea could obtain the ability to attack the United States with a nuclear-armed ballistic missile within a few months. The Japanese government needs to carefully monitor North Korea’s nuclear and missile development situation.

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

Furthermore, based on the flight altitude, distance flown and released images, it can be assumed that this missile could have a range in excess of 10,000 km, depending on the weight of the warhead deployed, etc., thus renewing concerns over the increasing ranges of North Korea’s ballistic missiles.

In addition, although the wheel-drive TELs possessed by North Korea are thought to be modified versions of Russian and Chinese TELs, given that North Korea has claimed to have developed its own TEL, future developments will continue to be monitored.
(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 into 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. 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 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 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. 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 resiliency and survivability through building underground or silo launch facilities and launching from TELs.

(j) KN-08/KN-14

The details of the new missile “KN-08” which was showcased at the military parade in April 2012 and July 2014.
announcements such as the one in November 2017 on the day of the launch of what is believed to have been a new type of intercontinental-range ballistic missile, claiming that it had re-verified warhead reliability in a reentry environment.\(^\text{49}\) North Korea is displaying an intention to seek to secure and enhance technology aimed at the operationalization of long-range ballistic missiles.\(^\text{50}\) 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 deployed, launches had been confirmed when Kim Jong-il was the Chairman of the National Defense Commission. Since 2014, they have been launched eastward from unprecedented locations in western North Korea, cutting across the Korean Peninsula, in the early morning and late hours of the night using TELs, often in multiple numbers. This indicates that North Korea is capable of launching Scuds and Nodongs from any place and at any time, from which it is deemed that it has increased confidence in the performance and reliability of its ballistic missiles.

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

\(^{44}\) The “Worldwide Threat Assessment” of the U.S. Director of National Intelligence of February 2015 notes that, “[North Korea] has publicly displayed its KN-09 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.”

\(^{45}\) 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.

\(^{46}\) North Korea is thought to have started developing longer-range ballistic missiles by the 1990s, including Nodong.

\(^{47}\) 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 Jison Inmung, and the Kimilsung Youth League bulletin Youth Vanguard had been published in its place.

\(^{48}\) 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.

\(^{49}\) 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.

\(^{50}\) 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.
Korea’s intentions are not only research and development of ballistic missiles but also the enhancement of their operational capabilities. Since Chairman Kim Jong-un has repeatedly instructed the military troops to reject formality and conduct practical training, it can be considered that these instructions underpin the launches of ballistic missiles that have already been deployed.

North Korea also has claimed that a new type of ballistic missile which appears to have been modified from the Scud missile launched on May 29, 2017 is a “ballistic missile that incorporates a precision navigation guidance system,” and it has also been noted that this missile is equipped with a maneuverable re-entry vehicle (MaRV). It is deemed that North Korea is aiming to enhance the accuracy of attack by upgrading ballistic missiles that have already been deployed.

Thirdly, North Korea appears to be seeking to improve its ability to conduct surprise attacks by enhancing secrecy and instantaneity to make it difficult to detect signs of a launch. Using a TEL or submarine, a ballistic missile can be launched from any point, making it difficult to detect signs of a launch in advance. North Korea has repeatedly launched ballistic missiles from TELs and SLBMs. In addition, the SLBMs repeatedly launched in 2016 and the ballistic missile presumed to be modified from the SLBM as a ground-launched type and launched 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, July 4, July 28, and November 29, 2017 launches of the ballistic missile, so-called lofted trajectories, in which missiles are launched at higher angles than nominal to high altitudes, were utilized. Generally, when a launch is made on a lofted trajectory, interception is considered to be more difficult.

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

c. Future Outlook for Ballistic Missile Development

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

However, at the Plenary Meeting of the Central Committee of the KWP in April 2018, Chairman Kim Jong-un announced the suspension of ICBM test launches. Then, at the U.S.-North Korea summit meeting in June, he clearly expressed the intention to work towards denuclearization. Given these developments it will be necessary to continue to carefully monitor trends in North Korea’s ballistic missile development program.

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

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52 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.

53 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. In addition, at the Second Plenum of the Seventh KWP Congress in October 2017, Kim Yo-jong was elected as an alternate member of the Political Bureau of the Central Committee.

54 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.
swing. However, with senior officials unable to dispute the decisions of Chairman Kim Jong-un due to an atrophy effect created by the frequent executions, demotions, and dismissals of senior officials, it is believed that there is growing uncertainty, including over the possibility of North Korea turning to military provocations without making adequate diplomatic considerations. In addition, it has been suggested that there is declining social control caused by widening wealth disparities and information inflow from other countries. In this regard, attention will be paid to the stability of the regime.

(2) Economic Conditions

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

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

In addition, the possibility has been noted that North Korea could be evading the UNSC sanctions by engaging in smuggling operations, and since the beginning of 2018, MSDF assets patrol aircraft including have confirmed numerous cases in which North Korean-flagged tankers have drawn alongside foreign tankers in international waters. After comprehensive analysis, the Government of Japan has determined that there is a strong possibility that these vessels have been conducting ship-to-ship transfers in the high seas, which is forbidden under the terms of UNSC resolutions.

For details of these cases and information about Japan’s response, please refer to Part III, Chapter 1, Section 2.
5 Relations with Other Countries

(1) Relations with the United States

The U.S. Trump administration announced that it would deal with North Korea’s nuclear and missile issue based on the concept of “all options are on the table,” and increased its presence in this region by means such as three carrier strike groups, including a Ronald Reagan carrier strike group conducting joint training in the Western Pacific Ocean in November 2017. In addition, in the Joint Statement by then Secretary of State Rex Tillerson, Secretary of Defense James Mattis, and Director of National Intelligence Dan Coats released in April, 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. In August 2017, then-Secretary of State Tillerson and Defense Secretary Mattis issued a joint statement, in which they reiterated that the United States would apply pressure towards achieving the denuclearization of the Korean Peninsula, and that an immediate cessation of nuclear and missile tests would be required in order for the United States to enter into negotiations with North Korea.

In response, North Korea repeated its previous assertions that developing its own nuclear deterrent capability was necessary in order to respond to the nuclear threat posed by the United States, and continued to engage in provocative rhetoric and behavior. In addition, North Korea reacted sharply to such actions as U.S.-ROK combined exercises, alleging that such activities were a manifestation of the “hostile policy” of the U.S. towards North Korea and repeatedly voicing strong criticism against the ROK, including a statement in October that if war were to break out on the Korean Peninsula, the entire ROK would be reduced to ashes. These events caused inter-Korean tensions to rise.

On the other hand, in his “New Year’s Address” in January 2018, Chairman Kim Jong-un indicated North Korea’s desire to participate in the 2018 PyeongChang Winter Olympic Games and demonstrated a willingness to engage in repeated provocative rhetoric and behavior against the ROK, including a statement in October that if war were to break out on the Korean Peninsula, the entire ROK would be reduced to ashes. These events caused inter-Korean tensions to rise.

On June 12 the historic first-ever U.S.-North Korea summit meeting was held and both sides confirmed that they would join their efforts to build a lasting and stable peace regime on the Korean Peninsula. Chairman Kim Jong-un made clear his intention to work towards the complete denuclearization of the Korean Peninsula, and confirmed that negotiations would continue with the United States. Furthermore, in a press conference following the summit meeting, President Trump stated that North Korea had agreed to destroy a missile engine testing site. Based on the outcomes of the U.S.-North Korea summit meeting it is now necessary to work closely with the United States and the ROK and cooperate with the international community, including China and Russia, to elicit concrete actions from North Korea towards the dismantlement of all weapons of mass destruction and ballistic missiles of all ranges in a complete, verifiable and irreversible manner.

(2) Relations with the Republic of Korea

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

On the other hand, in his “New Year’s Address” in January 2018, Chairman Kim Jong-un indicated North Korea’s desire to participate in the 2018 PyeongChang Winter Olympic Games and demonstrated a willingness to improve inter-Korean relations. Following this, on January 9, a North-South High Level Officials’ Meeting was held, and through frequent inter-Korean consultations thereafter preparations were made for North Korea to participate in the Winter Olympic Games. During the Games, Kim Yo-jong visited the ROK, which was followed by a special envoy from the ROK in March 2018, Chairman Kim Jong-un was reported as having expressed understanding for the regular U.S.-ROK joint military exercises.

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

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

63 According to an announcement by the ROK, in the meeting North Korea agreed to hold an inter-Korean summit meeting at the end of April and establish a hotline between the two leaders. In addition, it was reported by the ROK that North Korea had indicated that it would have no reason to keep nuclear weapons if the military threat to the North was eliminated and its security guaranteed, that it was prepared to engage in dialogue with the United States towards denuclearization and with a view to normalizing relations, and that while dialogue is ongoing it would not resume provocations such as nuclear or missile tests. North Korea was also reported as expressing understanding for the regular U.S.-ROK joint military exercises.
by a meeting in March between a delegation headed by a special envoy from the ROK and Chairman Kim Jong-un, which served to facilitate preparations for the inter-Korean summit meeting. The inter-Korean summit meeting was held on April 27, resulting in the issuance of the Panmunjom Declaration, which confirmed among other matters that the two countries agreed to completely cease all hostile acts against each other in every domain, and confirmed the common goal of realizing, through complete denuclearization, a nuclear-free Korean Peninsula. In addition, in a second inter-Korean summit meeting held on May 26, Chairman Kim Jong-un reiterated his desire for the complete denuclearization of the Korean Peninsula. The Panmunjom Declaration also notes that the two countries will aim to declare an end to the Korean War and that President Moon Jae-in had agreed to visit Pyongyang in the autumn of 2018. Future developments in inter-Korean relations will be closely watched.

(3) Relations with China

The China-North Korea Treaty on Friendship, Cooperation and Mutual Assistance, which was concluded in 1961, is still in force. In addition, China is currently North Korea’s biggest trade partner. In 2016, 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), suggesting North Korea’s dependence on China.

With regard to the situation in North Korea and its nuclear issue, China has expressed support for...
denuclearization on the Korean Peninsula, for peace and stability on the Korean Peninsula, and solving problems through dialogue and consultations. While it has endorsed the series of UNSC Resolutions, which strengthen sanctions on North Korea. It has also stated that sanctions alone will be unable to achieve a fundamental solution to the nuclear issue and that a solution should be found through dialogue and consultations. On this point China has repeatedly referred to “dual suspension,” by which it means that North Korea should temporarily suspend nuclear and missile test activities and that the United States and the ROK should temporarily suspend joint military exercises.

China is a vital political and economic partner for North Korea and maintains a degree of influence on the country. Although it has been noted that China-North Korea relations had deteriorated due to North Korea’s repeated nuclear and ballistic missile tests, in March 2018 the first-ever China-North Korea summit meeting under the leadership of Chairman Kim Jong-un was held, in which the two leaders agreed to further develop bilateral relations and also for President Xi Jinping to make a visit to North Korea. Chairman Kim Jong-un made another visit to China in May and held a second meeting with President Xi, in which it is reported that issues such as the denuclearization of the Korean Peninsula were discussed. Chairman Kim Jong-un made a third visit to China in June, and is believed to have explained the outcomes of the U.S.-North Korea summit meeting to President Xi and engaged in an exchange of opinions. On the other hand, 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. Following the sixth nuclear test conducted by North Korea in September 2017, Russia condemned North Korea’s nuclear test for violating UNSC Resolutions, but also stated that measures that would escalate tensions should be avoided. Nonetheless, Russia approved UNSC Resolution 2375, which was adopted in September 2017. Furthermore, although Russia endorsed UNSC Resolution 2397, adopted in December 2017, it emphasized that pressure on North Korea should make way for dialogue and negotiations.

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

(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 and participation in the ARF ministerial meetings. Meanwhile, it has been reported that North Korea has cooperative relationships with countries such as Iran, Syria, Pakistan, Myanmar, and Cuba in military affairs including arms trade and military technology transfer.

In recent years, North Korea is deemed to be strengthening its relations with African countries, with North Korean senior officials paying visits to African countries. 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

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67 On January 5, 2018, the Ministry of Commerce of China announced that based on UNSC Resolution 2397, China would implement measures from January 6, including restrictions on export of crude oil to North Korea and restrictions on export of refined petroleum products.
68 According to a statement released by China, in the China-North Korea summit meeting Chairman Kim Jong-un stated that the issue of denuclearization of the Korean Peninsula could be realized if the ROK and the United States would take phased measures in step with North Korea in order to realize peace and reconciliation. This visit to China was the first overseas visit made by Chairman Kim Jong-un since assuming the leadership of North Korea.
69 For example, the United Kingdom and Germany established diplomatic relations with North Korea in 2000 and 2001, respectively.
70 For example, in May 2016, President of the Presidium of the Supreme People’s Assembly Kim Yong-ram 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.
cooperation with African countries – activities which are becoming increasingly difficult due to sanctions based on UN Security Council resolutions and political turmoil in the Middle East.

It is actually the case that transactions that violate the terms of UNSC Resolutions have been observed, and the possibility that North Korea’s illegal activities could provide a funding source for nuclear and ballistic missile development is a cause for concern. At the same time, however, following the adoption of the series of UNSC Resolutions in 2017, various countries in Europe, Africa, the Middle East, South Asia, and Southeast Asia are reviewing their diplomatic and economic relations with North Korea.

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 Malaysia police also announced that VX, whose production and use are banned by the Convention on the Prohibition of Chemical Weapons and on their Destruction (Chemical Weapons Convention), was detected from his body.

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

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.”

The ROK has continued to undertake reforms of its national defense. In recent years, in August 2012, in light of the sinking of the ROK patrol boat and the bombardment of Yeonpyeong in 2010, the Defense Reform Basic Plan (2012-2030) was released by the Ministry of National Defense of the ROK, 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, 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 215,000 tons; and the air forces (Air Force and Navy combined) consist of approximately 640 combat aircraft.

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

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

In recent years, the ROK has actively promoted equipment export, which reached approximately US$3.2 billion on a contract value basis in 2015. Since 2006, the amount has increased by nearly 13-fold in 11 years. It is reported that export items have diversified to include communication electronics, aircraft, and naval vessels.

Defense spending in FY2018 (regular budget) increased by about 7.0% from the previous fiscal year to nearly KRW 43.1581 trillion, marking the 19th consecutive year of increases since 2000.

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, 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. 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. 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. At the end of April 2017 part of the THAAD system was deployed to the designated site for operations and in September four additional launching pads were deployed, concluding the temporary deployment of THAAD. In addition, in a U.S.-ROK summit meeting also held in September, the enhanced deployment of U.S. strategic assets in and around the ROK on a rotational basis was agreed. Furthermore, it was reported that in the regular U.S.-ROK joint military exercise conducted in April 2018, around 300,000 ROK Forces personnel and around 23,700 U.S. Forces personnel participated, as well as amphibious assault ships and F-35B fighters. In June the U.S. Department of Defense announced that the U.S.-ROK joint military exercise “Freedom Guardian” planned for August had been suspended, along with two U.S.-ROK Marine Exchange Program training exercises scheduled to occur within the next three months.

At the same time, the two countries have worked to deal with such issues as the transition of OPCON to the ROK and the realignment of U.S. Forces Korea. For the transition of OPCON to the ROK, the roadmap for the transfer “Strategic Alliance 2015” was established in October 2010. Aiming to complete the transition by December 1, 2015, the two countries have reviewed the approach of transitioning from the existing combined defense arrangement of the U.S. and ROK Forces, to a new joint defense arrangement led by the ROK Forces and supported by the U.S. Forces. Nevertheless, based on the increasing seriousness of North Korea’s nuclear and missile threats, the two sides decided at the 46th SCM to re-postpone the transition of OPCON, and to adopt a conditions-based approach, i.e., implementing the transition when conditions such as the ROK Forces’ enhanced capabilities are met. The three-axis system, which is deemed to be the central challenge for enhancing

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83 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.

84 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.

85 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.

86 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 II, Chapter 1, Section 2 regarding the ballistic missile defense system.

87 The United States and the ROK have had the U.S.-ROK Combined Forces Command since 1976 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.
the capabilities of the ROK Forces, is scheduled for completion in the early 2020s. At the 49th Security Consultative Meeting (SCM) in October 2017, it was decided that the United States and the ROK would jointly supplement the conditions-based OPCON transfer plan by the time of the next meeting. Future developments will continue to be monitored.

With regard to the realignment of the U.S. Forces Korea,

an agreement had been reached in 2003 on the relocation of the U.S. Forces' Yongsan Garrison located in the center of Seoul to the Pyeontaek area, south of Seoul, and on the relocation of the U.S. Forces stationed north of the Han River to the south of the river.

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

(1) Relations with China

China and the ROK have made continuous efforts to strengthen their relations. Meanwhile, outstanding issues have emerged between China and the ROK.

The “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, Ieodo (Chinese name: Suyan Rock), regarding which China and the ROK have conflicting claims to the jurisdictional authority over the exclusive economic zone. Against this backdrop, the ROK Government announced the expansion of its own ADIZ in December 2013 and enforced it from the same month. In addition, China has protested that the deployment of THAAD to U.S. Forces Korea would undermine China’s strategic security interests. On this point, in October 2017 the governments of China and the ROK announced that they had agreed to utilize military channels to reach a mutual understanding relating to China’s concerns about THAAD. In December 2017 President Moon Jae-in made his first visit to China since his inauguration and the two leaders agreed to establish a hotline and continue to maintain close communication, as well as vitalizing high-level strategic dialogue.

(2) Relations with Russia

Military exchanges have been under way between the ROK and Russia in recent years, including exchanges among high-ranking military officials. The two countries have also agreed on cooperation in the areas of military technology, defense industry, and military supplies. In 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.

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88 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 includes: (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.