

A Window of Vulnerability: Rethinking the Defense of the Korean Peninsula

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Abstract:

A confluence of factors is elevating the risk of renewed conflict on the Korean Peninsula, and is creating a sense of urgency in dealing with the North Korean military threat. On the one hand, the continuing collapse of the economy, the weakening of the North Korean state, and Kim Jong Un's tenuous grip on power is increasing the instability and unpredictability of the Democratic People's Republic of Korea. On the other hand, Pyongyang's recent advancement of its asymmetric capabilities is expanding the potential damage that it could inflict on both South Korea and the United States. The convergence of these developments is destabilizing the Korean Peninsula and increasing the probability of a provocation or a sudden change scenario escalating into a larger conflict. In the face of these challenges, Seoul and Washington have designed strategic plans to appropriately respond to another provocation and have agreed to modest long-term acquisition projects to defend and deter against the North Korean threat. Despite these measures, an unpredictable North Korea that is expanding its capabilities could leave South Korea unprepared for an innumerable wide range of permutations and scenarios that could ensue in the near to mid-term. By examining the expansion of North Korea's military capabilities and the U.S. and Republic of Korea's responses to them, this essay seeks to discuss how deterrence can be strengthened against the North Korean military threat.

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Introduction

Over six decades have passed since the U.S. and the Democratic People's Republic of Korea (DPRK) signed the armistice agreement ceasing all hostilities on the Korean Peninsula, but the threat of another conflict continues to jeopardize the peace and stability of the Northeast Asian region. While the likelihood of another ground invasion of South Korea has considerably waned over the decades, the chances of a renewed conflict are perhaps the greatest they have been in the last several decades. Now more than ever, the U.S. and South Korea face the very real possibility of deterrence failing in the near term.

A confluence of factors is elevating the risk of renewed conflict on the Korean Peninsula, and is creating a sense of urgency in dealing with the North Korean military threat. On the one hand, the continuing collapse of the economy, the weakening of the North Korean state, and Kim Jong Un's tenuous grip on power is increasing the instability and unpredictability of the DPRK. On the other hand, Pyongyang's recent advancement of its asymmetric capabilities is expanding the potential damage that it could inflict on both South Korea and the United States. The convergence of these developments is destabilizing the Korean Peninsula and increasing the probability of a provocation or a sudden change scenario that could escalate into a larger conflict.

In the face of these challenges, Seoul and Washington have designed strategic plans to appropriately respond to the next provocation and have agreed to modest long-term acquisition projects to defend and deter against the North Korean threat. Despite these measures, an unpredictable North Korea that is expanding its capabilities could leave South Korea unprepared for an innumerable wide range of scenarios that could ensue in the near- to mid-term. The DPRK continues to make significant improvements in its nuclear and missile capabilities at an alarming pace, creating a window of vulnerability on the Korean Peninsula in the near- to mid-term. These developments include, but are not limited to, cyber warfare, ballistic missile capabilities, electromagnetic pulse (EMP) technology, and possible highly enriched uranium (HEU) warhead miniaturization. All of this is happening, however, at a time when South Korea must assume greater responsibility for its defenses in order to facilitate the transfer of wartime operational control (OPCON). At the same time, the U.S. is increasingly facing the pressure of limited fiscal resources to deal with an ever-growing North

Korean threat.

In response to this growing window of vulnerability, Washington and Seoul must consider that they cannot possibly afford to counter all of Pyongyang's asymmetric threats with 100 percent efficacy. The U.S. and South Korea should consider improving their defensive and offensive options in a way that would change Pyongyang's political calculus against conducting a provocation. Rather than countering each specific threat, the U.S.-Republic of Korea (ROK) alliance will need to complement its strategy of *deterrence by denial* with *deterrence by punishment*. By examining the expansion of North Korea's military capabilities and the U.S. and ROK's responses to them, this essay seeks to identify defense vulnerabilities on the Korean Peninsula and to discuss how deterrence can be strengthened against the North Korean military threat.

The Heightened Risk of North Korean Instability

Although no one can predict exactly when a North Korean collapse will occur, signs are increasingly indicating that the third generation of the Kim family regime will likely be its last. The DPRK's continuing economic stagnation is making the North Korean state system, as originally intended by Kim Il Sung, increasingly unsustainable in the 21st century. Decades of the ill-advised economic autarky (*Juche*) system have left Pyongyang unable to produce goods of economic significance on its own, and the DPRK's efforts to outgun the larger ROK military with its disproportionate levels of defense spending have made it utterly dependent on foreign economic aid.¹ In the absence of Soviet aid after the 1990s and with the collapse of its Public Distribution System (PDS), North Korea has managed to survive by resorting to saber rattling and brinkmanship to gain foreign concessions from neighboring nations and by depending on Chinese economic aid.

Yet, North Korea's reliance on Chinese aid and investments may prove unsustainable in the long-term. Although China has invested in several joint development and infrastructure projects, such as the Rajin-Sonbong zone as well as the highway and railway line from Sinuiju to Kaesong, unconfirmed reports indicate that PRC-DPRK trade relations are on the decline.² The execution of Kim Jong Un's uncle, Jang Song Taek, who served as China's point of contact in the North Korean government, has made Beijing wary in its economic deals with an increasingly unpredictable Pyongyang. Furthermore, President Xi

Jinping has toughened his stance against the DPRK, in light of Kim Jong UN's continued development of North Korea's nuclear program. While China is unlikely to change its fundamental stance towards North Korea and will not undertake the drastic measures that the U.S. and South Korea would like to see Beijing take to stop Pyongyang's nuclear program, even a small decline in Chinese investments and aid could further contribute to North Korea's economic decline.

Concerned over the potential decrease in Chinese aid, Pyongyang is seeking to improve economic relations with other neighboring nations. In June 2014, North Korea successfully obtained loan forgiveness from Moscow for 90 percent of its \$11 billion debt that it amassed since the Soviet era, and is beginning the early stages of planning a jointly developed natural gas pipeline that would run through North Korea to South Korea.³ Pyongyang has also reached out to Japan as of May 2014 and agreed to relaunch its investigation of the whereabouts of the seventeen missing Japanese nations it abducted during the 1970s and 1980s.⁴ In exchange, Tokyo has lifted some of its sanctions on North Korea including the ban on its officials' visits, monetary transfers exceeding 3 million yen, and on port calls for its ships involved in humanitarian missions.⁵ However, despite Pyongyang's efforts to increase foreign trade and gain foreign concessions from other neighboring states, it may not be enough to slow down the pace of North Korea's economic disintegration.

In fact, the DPRK economy appears to be weaker than it has ever been in the past, and the Kim regime seems to be struggling to supply food and provisions to its citizens like never before. One Daily NK report indicated that the DPRK government was failing to provide food to its citizens even on Kim Il Sung's birthday, and that the North Korean government had openly admitted, "the country is having a hard time so it cannot provide holiday distribution."⁶ The food shortage appears to be equally appalling in the military. Unconfirmed reports from Yangkang Province indicate that the Korea People's Army (KPA) is offering an unprecedented six months leave for any soldier that is able to hand in 500kg of beans.⁷ Even during the Great Famine of the 1990s, the KPA had not offered a leave of absence in exchange for goods, although it had allowed officers a 10-20 day reprieve and enlisted soldiers 1-3 months to recover from the effects of malnourishment in the 1990s.⁸ A lack of necessary provisions is also heavily affecting the military, especially soldiers stationed in the outlying regions, such as Hamkyong and

Hwanghae Province. Both officers and enlisted soldiers are reportedly being forced to privately purchase seasonally appropriate fabric for their own military uniforms.⁹ In some cases, the lack of uniforms has led to cases of petty theft within the military.¹⁰ Based on these reports and many others like it, it appears that the North Korean economy may be struggling like never before.

At the same time, evidence is indicating that the North Korean state's control over its people is diminishing. The emergence of black markets, bribery, and corruption in the absence of an effective PDS during the 1990s has significantly weakened Pyongyang's grip over North Korean society. These experiences have largely raised the current generation's awareness of North Korea's economic disparity with the outside world, shaped their capitalistic attitudes towards wealth and power, and created a generation that is nonpolitical and disaffected with the North Korean government.¹¹ South Korean products that are traded as valued commodities on the black market have also come to represent the blatant economic disparity between the North and South, and have been identified by Pyongyang as threats to the North Korean state.¹² Additionally, telecommunication access has increased the influx of information available to North Korean society.¹³ Collectively, these developments are decreasing the persuasiveness of Pyongyang's propaganda, weakening the state's control over its society, and making it all the more likely that the third generation of the Kim family regime will likely be the last.

Meanwhile, Kim Jong Un appears to be struggling with a legitimacy problem. Lacking the nationalistic credentials of his grandfather, who participated in the Pacific War as guerilla fighter in Manchuria, and his father's twenty years of government experience as heir apparent, Kim Jong Un is struggling with a legitimacy issue that his two predecessors never had. In fact, he was not designated as the heir until shortly before Kim Jong Il's death, and this fact along with his youth appear to be working against him in a Confucian society that values the experience and wisdom that comes with age. The latest reports coming from North Korea are indicative of the public's growing skepticism regarding the young leader's leadership abilities. Shortly after Kim Jong Un appointed his 27 year-old sister, Kim Yo Jung, to the role of Chief Secretary of the ruling Worker's Party, the Daily NK reported that North Koreans were questioning, "What is this country coming to? What do the 20-somethings know?" and were arguing, "We know that the current

authorities are trying to invoke the image of Kim Jong Il and Kim Kyong Hui but the young Kims have a long way to go.”¹⁴ Despite the government’s best efforts to harken the nostalgic image of the nation’s previous rulers, the attempts to promote Kim Jong Un as a capable leader do not appear to be working to the public.

Recent events also indicate that Kim Jong Un has an image problem within the military. In April, the North Korean Air Force released images of Kim Jong Un from his early childhood years wearing a military uniform and more pictures as a teenager sitting in the cockpit of an airplane. The distribution of these images at a noted military event indicates that he is seeking to reinforce an image as a capable and competent military leader.¹⁵ This notion is further supported by the number of times that Kim Jong Un has publically appeared observing the military, despite recently developing a limp in his gait. National Defense Minister Han Min-gyu noted that nearly half of Kim Jong Un’s on-site surveys conducted during this calendar year were to defense installations.¹⁶ These efforts made by Kim Jong Un seem to suggest that the government is attempting to address a possible image problem within the military and to shore up his credibility as the nation’s leader.

More importantly, Kim Jong Un appears to be having difficulty consolidating power within the highest levels of government. The young leader’s support base in the main institutions of North Korea’s government—the Communist Party, the Korean People’s Army, the Security Service, and the Kim family’s inner circle—appears questionable at best.¹⁷ Anecdotal reports of internal military clashes that emerged shortly after he assumed power seem to support suggestions that he is having trouble exerting control over these institutions of power.¹⁸ Also, the unprecedented number and intensity of purges seem to indicate regime instability, especially with regards with the military.¹⁹ General James D. Thurman, former commander of the U.S. Forces Korea (USFK), noted that Kim Jong Un has purged more military leaders during his short tenure than both his father and grandfather.²⁰ More specifically, the parliamentary testimony of ROK National Intelligence Service Chief Nam Jae-joon on October 2013 noted that Kim Jong Un was replacing older leaders at the Corps Commanders level or above for younger ones, and indicated that 44% have already been replaced.²¹ Given the amount of time that has passed since October, it is quite likely that more have been replaced since then. Considering the fact that the extent and frequency of these purges are historically unprecedented, it is quite likely

that they are indicative of Kim Jong Un's struggle to obtain support at the highest levels of leadership.

While it is impossible to assess with any measure of certainty what is occurring at the highest levels of North Korea's leadership or to predict the wide range of scenarios that would ensue following a collapse of the Kim family regime, it is quite likely that any potential changes with the top leadership position would lead to destabilization of the Peninsula. A weakened Kim Jong Un, concerned with the survival of his regime, could push to launch a missile attack in order to consolidate power, to increase internal cohesion, and to avert the North Korean public's attention towards a potential conflict. He could also launch another small-scale provocation against South Korea to increase his credibility as a leader and to shore up his support base within the military. If faced with assured destruction of his regime, Kim Jong Un could launch a nuclear-equipped missile against either the U.S., Japan, or South Korea. Although the potential permutations of scenarios are too numerous to list in detail, one thing is clear—Kim Jong Un is willing to do anything internally or externally for regime survival including executing his uncle. Regardless of the internal factors that lead to the next provocation, the U.S. and the ROK will need to be prepared for it to be significantly more dangerous as Pyongyang is building its ballistic and nuclear capabilities.²²

Pyongyang's Expanded Asymmetric Capabilities

In fact, it may only be a matter of time before Pyongyang possesses the capability to deploy an intercontinental ballistic missile (ICBM) that is capable of reaching the mainland United States. Since 1998, Pyongyang has transformed its fledgling missile program into one that is capable of threatening the U.S. with the help of the Iranians. North Korea has been actively testing its ICBMs in an effort to expand their capability, but had struggled with third phase failure for some time. Although early flights of the 1998 Taepodong-1 and four subsequent flights of the Taepodong-2 and its space launch variants all proved to be unsuccessful, North Korea's repeated attempts to improve the third phase technology finally bore fruit when the Taepodong-2, configured as a satellite launch vehicle, was successfully launched in December 2012.²³ An analysis of the Unha Space Launch vehicle revealed that the technological advancements in the final phase of the rocket were Iranian inspired, although the calibration indicated that the third-stage components were

not manufactured in Iran.²⁴ With the Iranian-inspired final phase components and an estimated range of 3,400km to 15,000km, Pyongyang showed that it had the technology to produce missiles that could hit Alaska and Hawaii.²⁵

Pyongyang also appears to be making significant progress with its nuclear program, possibly also with the assistance of Iranian scientists. On February 12, 2013, the DPRK conducted its third nuclear test at its Punggye-ri site.²⁶ Shortly after the test was carried out, the state's official Central TV announced it conducted a "high-level, safe, perfect nuclear test with no negative environmental impact," and emphasized that it was a nuclear warhead that had been "miniaturized [and] lightened."²⁷ While no conclusive evidence was found regarding the nature of the nuclear test, Bruce Bechtol suggests that the presence of Iranian experts at the test indicates that this third test was likely a miniaturized highly enriched uranium device capable of being mounted on a missile.²⁸ More recently in April 2014, North Korea threatened to conduct a "new form of nuclear test[s]" that have raised concerns as then Minister of National Defense Kim Kwan-jin noted that Pyongyang appears to be ready to carry out the test at any time.²⁹ While it is uncertain what factors may be contributing to the delay of the fourth test, it is apparent that North Korea is well under way in developing a nuclear warhead that is mountable on one of its ballistic missiles.³⁰

In addition to the advancements being made with its nuclear program, Pyongyang may be moving closer to mounting an electromagnetic pulse (EMP) onto one of its ballistic missiles. Reports indicate that North Korea may have received Russian assistance in developing an EMP warhead. In a recent testimony in front of the House's Armed Services Committee, former CIA director R. James Woosley testified, "North Korea will soon match Russia and China in that they will have the primary ingredients for an EMP attack: simple ballistic missiles such as SCUDS that could be launched from a freighter near our shores; space launch vehicles able to launch low-earth-orbit satellites; and simple low-yield nuclear weapons that can generate gamma rays and fireballs."³¹

A potential EMP attack using advanced Russian technology could potentially cripple either the U.S. or South Korea, given the extent that both societies are reliant on electronic technology. While the ROK military has been preparing protective facilities for its main buildings, recent reports have suggested that these efforts may not be enough, as North Korea's EMPs may be more sophisticated and more powerful than

the ROK forces anticipated.³² Ambassador Henry Cooper, former Assistant Director of the Arms Control and Disarmament Agency, noted that a North Korean ICBM equipped with an EMP could disable the electronic grid of the United States, if the Taepodong-2 launch system exploited the vulnerabilities with the U.S. Ballistic Missile Early Warning radars by directing its missile over the South Pole region.³³ Cooper noted that such an attack would likely catch the U.S. off guard.³⁴

Pyongyang's possession of a road-mobile ICBM is further exacerbating the difficulties associated with deterring a potential nuclear attack. The Hwasong-13, also known as the KN-08, is a road-mobile ICBM believed to have a range exceeding 3,400 miles.³⁵ If fully operational, it presents a serious challenge to U.S. interests in the region as it decreases the U.S. and ROK forces' ability to detect and preempt a missile launch.³⁶ Thus far, U.S. intelligence sources have identified at least six KN-08 road mobile transporter-erector launchers (TELs) in Pyongyang's possession as of 2013, although more could have been produced since then.³⁷ While the missile's full operational capability is unknown as it has yet to be tested, it may just be a matter of time before it is fully operational.³⁸

Additionally, North Korea's improvements with their conventional weapons, including their multiple rocket launchers (MRL) and scud missiles are heightening the military threat towards South Korea. Since February 2014, Pyongyang has repeatedly been testing their 300mm KN-09 MRLs by firing them from Wonsan into the East Sea (Sea of Japan).³⁹ It is widely believed that these new MRLs have a range of 200km, which is a significant improvement from the 240mm MRLs that had a range of 60km.⁴⁰ Equipped with the Russian global positioning system, *Glonas*, these new MRLs would be capable of hitting Osan Air Force Base, Camp Humphreys in Pyongtaek and even the ROK military headquarters at the Gyeryong Complex in Chungcheong Province if launched from the city of Kaesong.⁴¹ The expanded ranges of these MRLs have raised concerns that they could be used to neutralize South Korea's air power and that the South Korean military may not have the budget or the wherewithal to create an effective response system.⁴² As of July 2014, North Korea has also begun using their TEL to fire ballistic missiles from locations closer to the South, such as Jangsangot in Hwanghae Province, which is located only 11km from the Northern Limit Line and approximately 100km from the demilitarized zone (DMZ).⁴³ Considering that most of the U.S. military installations in the South are within 120km

and easily reachable by either the KPA's Scud-ER (range of 700-900km) or a Scud-D (range of more than 500km) missile, North Korea could easily inflict considerable damage on the U.S. and ROK's strategic locations.⁴⁴

ROK Responses to the North Korean Military Threat

Given the heightened tensions on the Korean Peninsula, the ROK and U.S. forces have begun to take specific measures to address the vulnerabilities in their defenses. In the aftermath of the Yeonpyeong Island shelling, the ROK military established the Northwest Island Defense Command, headed by a two star Marine Corps general, and improved its artillery systems to include bunker-buster bombs and air-to-ground missiles. It also deployed AH-1S Cobra attack helicopters as well as 130mm multiple rocket launchers to the islands, installed artillery hunting radar (ARTHUR), and reinforced its existing concrete shelters near the Northern Limit Line with corrugated steel.⁴⁵ The alliance also agreed to combine counter-provocation plans in March 2013 that define the proportional retaliatory response to a provocation down to the tactical level and allow the ROK forces to request support from the U.S. even in circumstances that fall short of an all-out war.⁴⁶ The ROK has also begun to acquire critical capabilities to prepare for a possible conflict on the Korean Peninsula, including twin-engine aircrafts from Korea Aerospace Industries (KAI) to replace its aging fleet of F-4s and F-5s, C-130J Super Hercules, KC-X tankers, and three additional Aegis destroyers to its current fleet of three.⁴⁷

Yet, even these adjustments and acquisitions could prove to be insufficient in countering North Korea's provocations with 100 percent efficacy. The U.S. and ROK's efforts to defend against a potential provocation are placing an incredible amount of wear on its forces with the continuously heightened state of alert, and its efforts to pursue a strategy of deterrence by denial are giving Pyongyang the advantage of the element of a surprise. As the discovery of the low-tech unnamed aerial vehicle (UAV) in Baekryong Island show, North Korea continues to assess the improvements that the ROK forces have made with regards to its Northwest islands and is constantly seeking to identify potential vulnerabilities in South Korea's defenses. In light of all these considerations, it is time for the U.S.-ROK alliance to consider a more active deterrence policy that focuses on improving its missile defense, intelligence, surveillance, and reconnaissance (ISR), and "Kill Chain"

capabilities.

In response to the increasing possibility that a nuclear-armed ballistic missile could be deployed against the South, Seoul has made modest improvements to the Korea Air and Missile Defense (KAMD) system, its low-tiered terminal phase missile defense shield. The current system is designed to detect a North Korean ballistic missile vis-à-vis a U.S. early warning detection satellite, the ground-based early detection Green Pine radar, and the sea based KDX-3 radars on the ROK Navy's Aegis ships. This signals intelligence would then be sent to the Air and Missile Defense cell (AMD-cell) for analysis. Depending on the missile's location, the AMD-cell would either select that one of the Aegis ships intercept it with a SM-2 missile, or have one of the ROK army's three battalions intercept the missile by shooting at it one of the PAC-2 missiles or the indigenously manufactured Cheon-gung 2 missiles. Seoul plans on upgrading the hardware and software for its current system to accommodate PAC-3 missiles by 2016.⁴⁸

Yet, questions have emerged as to whether the KAMD could intercept North Korea's missiles even with the intended PAC-3 upgrades. In January 2014, Hannam University professor Choi Bong-wan argued at a National Assembly seminar that it would be "impossible to intercept the Nodong missile" if it were directed at Seoul.⁴⁹ By calculating the hypothetical angle of the missile directed at Seoul and considering its acceleration in the atmosphere and in its terminal phase, he argued that a Nodong missile equipped with either a nuclear warhead or a biochemical weapon would have to be intercepted at an altitude of 50km to minimize damages. According to his analysis, a nuclear-equipped Nodong would allow the KAMD only one second to hit the missile at an altitude of 12-15km, leaving Seoul virtually helpless. A multi-layered defense system including a high altitude defense system such as THAAD would have 45seconds at an altitude of 40-150km and the SM-3 would have almost 5 minutes to hit the missile at an altitude of 70-500km.⁵⁰ As North Korean ballistic capabilities are expanding, the need for a multi-layered defense system that includes the THAAD and the SM-3 are becoming necessary for the defense of the ROK.

However, it has taken several years to get South Korea to agree to even modest improvements in its missile defense. Seoul has been reluctant to take any missile defense related measures that could be perceived by China as joining the U.S. missile defense system, citing concerns about South Korean-Chinese relations. Seoul purchased Israel

Aerospace Industries (IAI) Green Pine early warning radar system and radar-guided rockets, as an intentional move to create an obstacle to being fully integrated with the U.S. missile defense system. They also spent several hundred billion won to create the AMD-cell, as a separate command and control center for its indigenous missile defense system.⁵¹ Even the pro-U.S. President Lee Myung-bak resisted calls to upgrade the ROK's patriot battalions to a PAC-3 system, choosing to purchase more PAC-2 missiles to replace the aging refurbished German PAC-2 missiles that President Roh Moo-hyun's administration had purchased at a reduced price in 2008. It was not until March 2014 that the ROK's Defense Acquisition Program Administration announced that it intended on upgrading the hardware and software for its three battalions to accommodate PAC-3 missiles, but that was only after a joint two-year study conducted by Korea Institute of Defense Analysis and the U.S. Department of Defense Missile Defense Agency showed that the ROK's PAC-2 system had an interception rate of below 40%.⁵²

More recently, the ROK Ministry of National Defense (MND) has repeatedly denied that it has even been in official discussions with the United States regarding the possibility of having THAAD deployed on the Korean Peninsula, let alone acquiring it, due to concerns over potential backlash from its neighbors, such as China and Russia.⁵³ And in spite of the ROK MND plans to add three more 7,600-ton Aegis destroyers from 2023 to 2027 to the ROK Navy's current fleet, South Korea has refused to consider acquiring the SM-3s that would increase the ROK aegis destroyer's range from 148km to 500km.⁵⁴ By refusing to acquire the SM-3 missiles, Seoul has essentially agreed to build three Aegis ships that have the radar to detect a North Korean ballistic missile, but no capability to strike it. Considering the fact that Japan will be upgrading their six aegis ships (one Kongō class, two Atago class Aegis destroyers) from SM-3 Block 1B missiles to SM-3 Block 2A missiles with a range of 1,000km in 2018, South Korea has essentially agreed to manufacture three outdated Aegis ships.

To be fair, Seoul's concerns over Beijing and Moscow's responses have not been unfounded. China has issued the ROK an ultimatum that it would be risking its "fast-developing relations with China" if it should "ignore the protests of the largest economy in Asia" by joining the U.S. missile defense system.⁵⁵ China's Ministry of Foreign Affairs Spokesperson Qin Gang issued a stronger warning stating, "The deployment of antimissile systems in this region will not help maintain

stability and strategic balance in this region," and warned Seoul, "We will by no means allow tensions at the doorstep of China; we will not allow any chaos."⁵⁶ In response to these concerns, the ROK MND has been arguing that "the system, if deployed, would not cover beyond the Korean Peninsula" in an attempt to reassure China. However, this has not allayed the suspicions of Beijing, which believes that the X-Band radar component of the THAAD battery could be used to detect activities across eastern China or could be used to collect intelligence regarding its offensive plans for Taiwan.⁵⁷ Russia's foreign ministry has also expressed its concern that a THAAD battery on the Peninsula could be used against it and could provoke an arms race in the region.⁵⁸

In the face of these challenges, the Republic of Korea has been implementing mid- to long-term indigenous development and acquisition projects to actively improve their capabilities and to strengthen deterrence. South Korea has been working on its own long-range surface-to-air missile (L-SAM) to complement its mid-range surface-to-air missiles (M-SAM) as an alternative to acquiring THAAD.⁵⁹ However, vulnerabilities in missile defense will persist in the near- to mid-term without missile defense integration. Even if the PAC-3 battalions are fully deployed and operational by the projected 2016 timeframe, it would leave key vulnerabilities in the ROK defenses near- to mid-term future.⁶⁰ Because the ROK forces will not have its L-SAM until at least 2020, it will need to consider accepting the U.S. deployment of a THAAD battery to the Peninsula, even if it does not have the budget or the political leeway to consider purchasing the system itself. Seoul will also need to consider an alliance counter-military strategy with the Combined Forces Command in order to create a multi-layered defense system.⁶¹ Every additional layer of the missile defense system would increase the likelihood that either the U.S. or the ROK forces would successfully target an incoming North Korean missile. In short, Seoul will need to make trade-off decisions to maximize interoperability with the U.S. system and to defend its key military installations and its capital, Seoul, even if geopolitics precludes full integration with the U.S. missile defense system.

In an effort to defend against the North Korean nuclear threat, the ROK has also been actively developing its "kill chain" contingency plan, which aims to preemptively neutralize North Korean missile bases and nuclear facilities within 30 minutes of detecting a possible nuclear missile launch. Consisting of four stages: (1) detect, (2) assess, (3) decide

and (4) deliver, it would mobilize surveillance and reconnaissance satellites, communication satellites, intelligence satellites, reconnaissance aircraft, ROK missiles, and ROK Air Force fighters.⁶² In terms of ISR, it would likely include the United States' KH-12, U-2 planes, and Global Hawks as well as the ROK Arirang-3 satellite, as well as the RF-16 and RC-800 reconnaissance planes. It would probably also utilize the indigenously developed Hyeonmu-3C missile (1,500km) and Hyeonmu-2 (300km) cruise missiles.⁶³ It is intended to go into effect by 2015, and will serve along with the KAMD as the ROK's primary defenses against a nuclear attack.⁶⁴

In order to obtain the necessary capabilities to carry out "Kill Chain," the ROK MND has been in the process of acquiring the stealth capabilities that would allow it to eliminate the weapons stockpiles located close to the Chinese border.⁶⁵ However, the acquisition project has faced significant setbacks due to controversies over the transparency and fairness of the selection process and also due to existing budgetary issues. Eventually, the ROK MND announced that they had selected the F-35 over Boeing's F-15 Silent Eagle, but the selection process had been delayed by almost two years by that point. Considering the challenges that the F-35 is having with development issues and setbacks it is having with specific components, it is quite possible that it may not be able to meet the anticipated delivery date of 2018 to 2021.

Additionally, Seoul has been seeking to expand its ISR capabilities to strengthen its "Kill Chain" plan. South Korea has announced that it will be developing five indigenous satellites, which undoubtedly would be used to improve its reconnaissance efforts.⁶⁶ Seoul will also be acquiring four Global Hawks as its high-altitude UAVs to complement the medium-altitude UAVs currently in development by the Agency for Defense Development.⁶⁷ However, even with the intended acquisition of the Global Hawks, the ROK and U.S.' ISR assets and analytical capabilities may be insufficient in the defense and deterrence of the Korean Peninsula. General Curtis "Mike" Scaparrotti, commander of the USFK, noted that the U-2 was more appropriate for the defense of the Korean Peninsula than the Global Hawk when he stated, "In my particular case, the U-2 provides a unique capability that the Global Hawk presently does not provide," indicating that it would provide "the warning I need on a short timeline" to respond to an attack.⁶⁸ Without the necessary ISR capabilities, ROK forces would be forced to rely on U.S., which could potentially affect their ability to respond within the 30-

minute time frame from detecting a missile launch to actually striking the missile pad. Such a delay would have a significantly detrimental impact their ability to strike a TEL, which is estimated to require approximately 40 minutes to actually launch a ballistic missile.

The U.S. and the ROK may also face other strategic challenges in the event of a war on the Korean Peninsula. Seoul and Washington currently face a critical shortage in munitions on the Korean Peninsula, leaving the allied forces unprepared in an event of a war. Concerns have also emerged that the U.S. army drawdowns may impact the readiness of follow-up forces for the USFK. As General Scaparotti indicated in a Senate Hearing before the Armed Services Committee, “Any delay in the arrival or reduction in readiness of these forces would lengthen the time required to accomplish key missions in crisis or war, likely resulting in higher civilian and military casualties.”⁶⁹ In his testimony, he argued that greater training should be conducted to improve the readiness of follow-up forces to the extent that the fiscal budget will allow. In light of these challenges, the U.S. and the ROK could find itself underprepared in the event of a large-scale conflict or a collapse of the North Korean regime, which could potentially require the commitment of a large portion of the U.S. army resources. Given the defense cutbacks that are being implemented, the ROK forces may not receive the assistance necessary for stabilizing the Korean Peninsula in the event of a war. In light of the increasing instability of the Kim Jong Un regime, the advancements made in Pyongyang’s asymmetric capabilities, and the vulnerabilities in the U.S. and ROK defense, the Alliance would be wise to consider defense measures that are less risk averse and to pursue a policy of active deterrence.

Conclusion

North Korea appears both impervious to change and subject to massive volatility. Preparing for the breadth of contingencies that could arise (from political breakthrough to regime collapse or conflict) is an exercise in exhaustion. But between the numerous radical scenarios, there is a daily challenge of preserving deterrence and drawing the line on North Korean brinkmanship. The North’s most recent short-range ballistic missile and “ultra-precision” rocket tests are hardly game-changers. But it is only a matter of time before North Korea flaunts its ability to miniaturize a nuclear warhead, deploy intercontinental ballistic missiles, and expand its nuclear stockpile with highly enriched uranium

warheads. North Korea's missile and nuclear programs are limited only by Pyongyang's dismal economy.

President Park Geun-hye remains open to improving inter-Korean relations. Yet the cumulative failure of diplomacy to cap the North's most dangerous weapons requires a strategic adjustment. Rather than trying to react to every North Korean advance in asymmetrical military means, it is time to rebalance the ROK-U.S. strategy to place the onus for deterrence back on the North. Gaining the upper hand is difficult because while the ROK-U.S. alliance focuses on stability, the North deploys risk. Describing why he refrained from air strikes on the Yongbyon plutonium reactor 20 years ago, former U.S. Defense Secretary William Perry put it this way: he wanted to avert a general war, not cause one.

Accepting even modest risk, however, can change the strategic balance in a way that dampens the North's willingness to provoke. Pyongyang possesses an arsenal of asymmetrical weapons—cyber, robotic, undersea, nuclear, and human—to overcome the alliance's conventional military superiority. The ROK and its U.S. ally have made countless countermoves. They have enhanced defense readiness, updated counter-provocation plans, made new force deployments, and committed to better missile defenses. These are important steps for preserving deterrence, but at some point the alliance needs to understand the law of diminishing returns: North Korea is capable of posing more asymmetrical threats than the alliance can afford to counteract. Instead of trying to counteract, Seoul and Washington need to adopt a more active defense strategy, one that balances deterrence by denial with deterrence by punishment.

Such an active defense strategy has at least three defense components. First, the alliance needs a robust intelligence, surveillance and reconnaissance network, capable of early detection of ballistic missiles, as well as low-altitude cruise missiles and UAVs. Second, an upgraded, layered missile defense system should include better point defense systems (PAC-3) and wider-range defenses (Standard Missiles on Aegis-equipped destroyers and land-based THAAD batteries). Third, there must be a stronger offensive capability that poses a "Kill Chain" threat capable of preempting missile launches before they happen. This requires missiles and aircraft that can reach the farthest corners of the North. The aim is not to preempt but to pose the potential of preemption, thereby forcing North Korea to think twice before launching a provocation.

Another way for the South to preempt the North's growing arsenal of weapons is through the use of a non-nuclear electromagnetic pulse weapon, already proven on a small scale. Because North Korea will soon develop nuclear-capable mobile missiles, the further development of non-nuclear EMP systems capable of closing a 50-square-kilometer joint fire area would also shift the cost-benefit calculus against North Korea. The North's recent use of three UAVs to violate South Korean airspace should be a wake-up call. There is no sure-fire way to prevent further intrusions by drones, some of which could be armed. But there, control over the cost-benefit analysis of drone warfare surely resides with the South. One Korea is a high-tech and open democracy; the other is a closed society seeking to smuggle in technology and keep out information. Does the North truly want to compete in the realm of drone warfare?

In addition to direct defense investments, the UAV incident suggests that the alliance needs to make better use of its information superiority. The two Koreas have disavowed the use of psychological warfare, and yet the North is a flagrant purveyor of vitriol and falsehood. Surely the South can saturate the North with inconvenient truths—from pictures of the young general's luxury houses and North Korean gulags to video lectures by refugees who have managed to escape the world's most oppressive regime.

In sum, the alliance can gain greater leverage against North Korean brinkmanship and coercion by adopting a posture of active defense and employing more information warfare. It's time to make North Korea have to worry more about deterring South Korea and the U.S. rather than the other way around.

Should Pyongyang truly be open to negotiation, or should unification suddenly come about, Seoul must be ready for that, too. Meanwhile, shoring up deterrence in the face of a volatile North Korean regime, and drawing a line on North Korea's coercion, needs to be at the heart of ROK-U.S. strategy.

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