Congressional Research Service
Informing the legislative debate since 1914

The North Korean Nuclear Challenge: Military Options and Issues for Congress

Updated November 6, 2017

Congressional Research Service
https://crsreports.congress.gov
R44994

CRS REPORT
Prepared for Members and
Committees of Congress

Summary

North Korea's apparently successful July 2017 tests of its intercontinental ballistic missile capabilities, along with the possibility that North Korea (DPRK) may have successfully miniaturized a nuclear warhead, have led analysts and policymakers to conclude that the window for preventing the DPRK from acquiring a nuclear missile capable of reaching the United States is closing. These events appear to have fundamentally altered U.S. perceptions of the threat the Kim Jong-un regime poses to the continental United States and the international community, and escalated the standoff on the Korean Peninsula to levels that have arguably not been seen since 1994.

A key issue is whether or not the United States could manage and deter a nuclear-armed North Korea if it were to become capable of attacking targets in the U.S. homeland, and whether taking decisive military action to prevent the emergence of such a DPRK capability might be necessary. Either choice would bring with it considerable risk for the United States, its allies, regional stability, and global order. Trump Administration officials have stated that "all options are on the table," to include the use of military force to "denuclearize"—generally interpreted to mean eliminating nuclear weapons and related capabilities from that area.

One potential question for Congress is whether, and how, to employ the U.S. military to accomplish denuclearization, and whether using the military might result in miscalculation on either side, or perhaps even conflict escalation. Questions also exist as to whether denuclearization is the right strategic goal for the United States. This is perhaps because eliminating DPRK nuclear or intercontinental ballistic missile (ICBM) capabilities outside of voluntary denuclearization, and employing military forces and assets to do so, would likely entail significant risks. In particular, any move involving military forces by either the United States/Republic of Korea (U.S./ROK) or the DPRK might provoke an escalation of conflict that could have catastrophic consequences for the Korean Peninsula, Japan, and the East Asia region.

In this report, CRS identifies seven possible options, with their implications and attendant risks, for the employment of the military to denuclearize North Korea. These options are

- maintaining the military status quo,
- enhanced containment and deterrence,
- denying DPRK acquisition of delivery systems capable of threatening the United States,
- eliminating ICBM facilities and launch pads,
- eliminating DPRK nuclear facilities,
- DPRK regime change, and
- withdrawing U.S. military forces.

These options are based entirely on open-source materials, and do not represent a complete list of possibilities. CRS cannot verify whether any of these potential options are currently being considered by U.S. and ROK leaders. CRS does not advocate for or against a military response to the current situation.

Conservative estimates anticipate that in the first hours of a renewed military conflict, North Korean conventional artillery situated along the Demilitarized Zone (DMZ) could cause tens of thousands of casualties in South Korea, where at least 100,000 (and possibly as many as 500,000) U.S. soldiers and citizens reside. A protracted conflict—particularly one in which North Korea uses its nuclear, biological, or chemical weapons—could cause enormous casualties on a greater

scale, and might expand to include Japan and U.S. territories in the region. Such a conflict could also involve a massive mobilization of U.S. forces onto the Korean Peninsula, and high military casualty rates. Complicating matters, should China choose to join the conflict, those casualty rates could grow further, and could potentially lead to military conflict beyond the peninsula. Some analysts contend, however, that the risk of allowing the Kim Jong-un regime to acquire a nuclear weapon capable of targeting the U.S. homeland is of even greater concern than the risks associated with the outbreak of regional war, especially given Pyongyang's long history of bombastic threats and aggressive action toward the United States and its allies and the regime's long-stated interest in unifying the Korean Peninsula on its terms.

Estimating the military balance on the peninsula, and how military forces might be employed during wartime, requires accounting for a variety of variables and, as such, is an inherently imprecise endeavor. As an overall approach to building and maintaining its forces, the DPRK has emphasized quantity over quality, and asymmetric capabilities including weapons of mass destruction and its special operations forces. The Republic of Korea, by contrast, has emphasized quality over quantity, and maintains a highly skilled, well-trained, and capable conventional force. Most students of the regional military balance contend that overall advantage is with the U.S./ROK, assuming that neither China nor Russia become involved militarily. Should they do so, the conflict would likely become exponentially more complicated.

As the situation on the Korean Peninsula continues to evolve, Congress may consider whether, and if so under what circumstances, it might support U.S. military action. Congress could also consider

- the risks associated with the possible employment of military force on the Korean Peninsula against North Korea;
- the efficacy of the use of force to accomplish the Trump Administration's strategic goals;
- whether and when a statutory authorization for the use of U.S. forces might be necessary, and whether to support such an authorization;
- what the costs might be of conducting military operations and postconflict reconstruction operations, particularly should a conflict on the Korean Peninsula escalate significantly;
- the consequences for regional security, regional alliances, and U.S. security presence in the region more broadly; and
- the impact that renewed hostilities on the Korean Peninsula might have for the availability of forces for other theaters and contingencies.

Contents

Introduction 1
Background 5
Economic and Diplomatic Efforts to Compel Denuclearization 6
North Korea's Objectives 8
U.S. Goals and Military Options 10
Risk of Proliferation 11
Efficacy of the Use of Force 13
Overview of the Peninsular Military Capabilities 14
DPRK Capabilities 15
ROK Capabilities 16
U.S. Posture 16
Key Risks 17
North Korean Responses 18
Mass Casualties 18
Economic Impacts 21
China's Reaction 21
Implications for East Asia 22
China 22
Alliances with South Korea and Japan 23
Russia 24
Possible Military Options 25
Maintain the Military Status Quo 26
Enhanced Containment and Deterrence 27
Deny DPRK Acquisition of Delivery Systems Capable of Threatening the United States 28
Eliminate ICBM Facilities and Launch Pads 28
Eliminate DPRK Nuclear Facilities 29
DPRK Regime Change 30
Withdraw U.S. Forces 31
Possible Issues for Congress 32
Resource Implications of Military Operations 33
Postconflict Reconstruction 33
Coalition Support 34
Availability of Forces for Other Contingencies 35
Prospectus 36

Figures

Figure 1. Map of the Korean Peninsula 4
Figure 2. Population Density on the Korean Peninsula 20

Figure A-1. DPRK Ground Force Locations 39

Figure A-2. Disposition of DPRK Air Assets 40
Figure A-3. Disposition of DPRK Naval Assets 41
Figure A-4. Range Estimates Based on North Korea's July 2017 Missile Tests 43
Figure A-5. U.S. Posture on the Korean Peninsula After Basing Realignment 50
Figure C-1. U.S. Bases 56

Tables

Table B-1. Comparison of DPRK, ROK, and U.S. Military Capabilities 54

Appendixes

Appendix A. In Detail: The Military Balance on the Korean Peninsula 37
Appendix B. DPRK, ROK, and U.S. Military Capabilities 54
Appendix C. U.S. Posture in the Pacific Theater 56

Contacts

Author Information 61

Introduction

Though North Korea has been a persistent U.S. foreign policy challenge for decades, during 2017 the situation evolved to become what many observers assess to be a potential direct security threat to the U.S. homeland. In July 2017, North Korea apparently successfully tested its first intercontinental ballistic missiles (ICBMs). Some observers assert that North Korea has, with these tests, demonstrated a capability of reaching the continental United States,[1] although others contend that these tests have not yet in actuality proven that the DPRK has achieved intercontinental ranges with its missiles.[2] Regardless, these developments, combined with the possibility that the regime in Pyongyang has miniaturized a nuclear weapon, suggest that North Korea could now be only one technical step—mastering reentry vehicle technology—away from being able to credibly threaten the continental United States with a nuclear weapon.[3] Some estimates reportedly maintain that North Korea may be able to do so by sometime in 2018, suggesting that the window of opportunity for eliminating these capabilities without possible nuclear retaliation to the continental United States is closing.[4] Combined with the long-standing use of aggressive rhetoric toward the United States by successive Kim regimes, these events appear to have fundamentally altered U.S. perceptions of the threat the Kim Jong-un regime poses, and have escalated the standoff on the Korean Peninsula to levels that have arguably not been seen since at least 1994.[5] In the coming months, Congress may opt to play a greater role in shaping U.S. policy regarding North Korea, including consideration of the implications of possible U.S. actions to address it.[6]

---

[1] U.S. Congress, Senate Committee on Armed Services, *Hearing to Consider the Nomination of General Joseph F. Dunford, Jr., USMC, for Reappointment to the Grade of General and Reappointment to be Chairman of the Joint Chiefs of Staff*, 115th Cong., 1st sess., September 26, 2017.

[2] See **Appendix A**.

[3] Yonhap News Agency, "Re-entry vehicle last-remaining question for N.K. ICBM: U.S. expert," June 12, 2017, http://english.yonhapnews.co.kr/northkorea/2017/06/12/0401000000AEN20170612000300315.html.

[4] Ellen Nakashima, Anna Fifield and Joby Warrick, "North Korea could cross ICBM threshold next year, U.S. officials warn in new assessment," *The Washington Post*, July 25, 2017, https://web.archive.org/web/20170908131324/https://www.washingtonpost.com/world/national-security/north-korea-could-cross-icbm-threshold-next-year-us-officials-warn-in-new-assessment/2017/07/25/4107dc4a-70af-11e7-8f39-eeb7d3a2d304_story.html?utm_term=.cb73110bcbed. Officials have declined to verify the reported claims, although Vice Chair of the Joint Chiefs General Paul Selva did state, that he, "agree[d] in principle with the assessment that the North Koreans are moving quickly to develop an intercontinental ballistic missile capability." See U.S. Congress, Senate Armed Services Committee, *Senate Armed Services Committee Holds Hearing on the Nomination of Gen. Paul Selva for Reappointment to be Vice Chair of the Joint Chiefs*, 115th Congress, 1st Session, July 18, 2017, http://www.cq.com/doc/congressionaltranscripts-5143818?0&search=RrCfxM0h.

[5] In the early 1990s, after agreeing to and then obstructing International Atomic Energy Agency (IAEA) inspections, North Korea announced its intention to withdraw from the Nuclear Non-Proliferation Treaty (NPT). According to statements by former Clinton Administration officials, a preemptive military strike on the North's nuclear facilities was seriously considered as the crisis developed. Discussion of sanctions at the United Nations Security Council and a diplomatic mission from former President Jimmy Carter diffused the tension and eventually led to the U.S.-North Korea 1994 Agreed Framework, under which the United States agreed to arrange for North Korea to receive two light water reactor (LWR) nuclear power plants and heavy fuel oil in exchange for North Korea freezing and eventually dismantling its plutonium program under IAEA supervision. The document also outlined a path toward normalization of diplomatic and economic relations as well as security assurances. For further background, see CRS Report 94-311 *Korean Crisis, 1994 Military Geography, Military Balance, Military Options*, by John M. Collins.

[6] This report does not discuss the allocation of war powers between Congress and the President. For extensive discussion of the relationship between the political branches' authorities over military matters, including power of Congress to constrain executive discretion regarding the initiation or continuation of hostilities, see CRS Report R41989, *Congressional Authority to Limit Military Operations*, by Jennifer K. Elsea, Michael John Garcia, and

The United States has long signaled its preference for resolving the situation with diplomacy, and has used economic pressure, in the form of unilateral and multinational economic sanctions, to create opportunities for those diplomatic efforts. Various Trump Administration statements suggest that a mixture of economic pressure and diplomacy remains the preferred policy tool. To a greater degree than their predecessors, however, Trump Administration officials have publicly emphasized that "all options are on the table," including the use of military force, to contend with the threat North Korea may pose to the United States and its allies.[7] Consistent with the policies of prior Administrations, Trump Administration officials have also stated that the goal of their increased pressure campaign toward North Korea is denuclearization—the removal of nuclear weapons from the Korean Peninsula.[8] If the Trump Administration chooses to pursue military options, key questions for Congress include whether, and how, to best employ the military to accomplish denuclearization, and whether using military force on its own or in combination with other tools might result in miscalculation on either side and lead to conflict escalation.

Intended or inadvertent, reengaging in military hostilities in any form with North Korea is a proposition that involves military and political risk. Any move by the United States, South Korea, or North Korea could result in an unpredictable escalation of conflict and produce substantial casualty levels. A conflict itself, should it occur, would likely be significantly more complex and dangerous than any of the interventions the United States has undertaken since the end of the Cold War, including those in Iraq, Libya, and the Balkans. Some analysts contend, however, that the risk of allowing the Kim Jong-un regime to acquire a nuclear weapon capable of targeting the U.S. homeland is of even greater concern than the risks associated with the outbreak of war, especially given Pyongyang's long history of threats and aggressive action toward the United States and its allies and the regime's long-stated interest in unifying the Korean Peninsula on its terms. Some analysts assert that preemptive U.S. military action against North Korea should be taken when there is an "imminent launch" of a North Korean nuclear-armed ICBM aimed at the United States or its allies.[9] Other analysts downplay the risk of North Korean nuclearization; few analysts believe that North Korea would launch an unprovoked attack on U.S. territory.[10]

Many students of the regional military balance contend that an overall advantage over North Korea rests with the United States and its ally, the Republic of Korea (or, ROK, commonly known as South Korea), and that U.S./ROK forces would likely prevail in any conflict within a matter of weeks.[11] Those analyses, however, also generally assume that neither China nor Russia

---

Thomas J. Nicola.

[7] John Wagner and Anna Fifield, "Trump: 'All Options are on the Table' after North Korea launched missile over Japan," *The Washington Post*, August 29, 2017, https://www.washingtonpost.com/news/post-politics/wp/2017/08/29/trump-all-options-are-on-the-table-following-north-korea-missile-launch-over-japan/?utm_term=.6235b55b0843.

[8] Office of the Spokesperson, "Joint Statement by Secretary of State Rex Tillerson, Secretary of Defense James Mattis, Director of National Intelligence Dan Coats," U.S. Department of State, April 26, 2017, https://www.state.gov/r/pa/prs/ps/2017/04/270464.htm.

[9] John Allen, Richard Bush, Robert Einhorn, Steven Pifer, Jonathan Pollack, and Evans Revere, *Averting catastrophe: U.S. Policy Options for North Korea*, Brookings Institution, April 2017, p. 2. https://www.brookings.edu/research/averting-catastrophe-u-s-policy-options-for-north-korea/.

[10] See, for example, Interview with William Cohen and Senator Ben Cardin, Morning Joe, MSNBC.com, August 9, 2017, http://www.msnbc.com/morning-joe/watch/fmr-defense-secetary-north-korea-is-not-suicidal-1020692035774; William J. Perry, "North Korea Called Me a 'War Maniac.' I Ignored Them, and Trump Should Too," *Politico*, October 3, 2017.

[11] Chetan Peddada, "A Sneak Peek at America's War Plans for North Korea," *Foreign Policy*, September 7, 2017, http://foreignpolicy.com/2017/09/07/a-sneak-peak-at-americas-war-plans-for-north-korea/; Raymond Farrell, "Thunder Run to Seoul: Assessing North Korea's War Plan," Modern War Institute at West Point, April 25, 2017, https://mwi.usma.edu/thunder-run-seoul-assessing-north-koreas-war-plan/.

would become engaged in the conflict. Should China or Russia do so, the conflict would likely become significantly more complicated, costly, and lengthy.[12] The toll of such a conflict could be immense, given that Seoul—with a population of approximately 23 million people, including American citizens—is within the range of North Korean artillery deployed near the demilitarized zone (DMZ) between the two Koreas. Should the DPRK use the nuclear, chemical, or biological weapons in its arsenal, according to some estimates casualty figures could number in the millions.[13] Depending upon the nature of the conflict and the strategic objectives being advanced, U.S. military casualties could also be considerable.

As a result, Congress may consider whether to support increased U.S. military activities—possibly including combat operations—to denuclearize the Korean peninsula, or whether instead to support efforts to contain and deter North Korean aggression primarily through other means. Any option would carry with it considerable risk to the United States, the region, and global order. As Congress considers these issues, key strategic-level questions include, but are not limited to, the following:

- Could the North Korean regime change its calculus, or collapse or otherwise transform, perhaps as a result of outside pressure, prior to its acquisition, or use, of credible nuclear-tipped ICBMs capable of holding targets in the continental United States at risk?
- What are the implications for U.S. relationships in the region if key allies are persuaded that the United States will no longer give the priority to regional security that it has thus far?
- What will be the cost implications, in terms of U.S. and allied financial resources, casualties, standing, and reputation, should hostilities break out, and how would those costs affect the ability of the United States to advance other critical national security objectives in other theaters?
- How do the risks associated with U.S. military action against North Korea compare with the risks of adopting other strategies, such as deterring and containing North Korea?
- Would a nuclear-armed Kim regime behave in a manner consistent with other nuclear powers? What would a nuclear-armed North Korea mean for longer-term national security decisions the United States faces?

Other Related CRS Reports

The Congressional Research Service has authored a number of reports examining various aspects of the North Korea issue, including options for using nonmilitary instruments to resolve the crisis, that may be of interest. These include the following:

CRS Report R41259, *North Korea: U.S. Relations, Nuclear Diplomacy, and Internal Situation*, coordinated by Emma Chanlett-Avery;

CRS In Focus IF10472, *North Korea's Nuclear and Ballistic Missile Programs*, by Steven A. Hildreth and Mary Beth D. Nikitin;

CRS Report R44950, *Redeploying U.S. Nuclear Weapons to South Korea: Background and Implications in Brief*, by Amy F. Woolf and Emma Chanlett-Avery;

[12] Anthony Cordesman, *The Military Balance in the Koreas and Northeast Asia*, (Washington, DC: Center for Strategic and International Studies, 2017).

[13] This rough estimate should, however, be treated as speculative, as the number of casualties depends upon how a military campaign is prosecuted. See Michael Zagurek, *A Hypothetical Nuclear Attack on Seoul and Tokyo: The Human Cost of War on the Korean Peninsula*, US-Korea Institute at Johns Hopkins SAIS, October 4, 2017; Reid Kirby, "Sea of Sarin: North Korea's Chemical Deterrent," Bulletin of the Atomic Scientists, June 21, 2017.

CRS In Focus IF10165, *South Korea: Background and U.S. Relations*, by Mark E. Manyin, Emma Chanlett-Avery, and Brock R. Williams;

CRS In Focus IF10345, *Possible U.S. Policy Approaches After North Korea's January 2016 Nuclear Test*, by Emma Chanlett-Avery, Mark E. Manyin, and Ian E. Rinehart;

CRS Report R41438, *North Korea: Legislative Basis for U.S. Economic Sanctions*, by Dianne E. Rennack;

CRS Insight IN10734, *North Korea's Long-Range Missile Test*, by Emma Chanlett-Avery, Dianne E. Rennack, and Steven A. Hildreth; and

CRS Insight IN10779, *Nuclear Talks with North Korea?*, by Mary Beth D. Nikitin and Mark E. Manyin.

For more information, CRS analysts can be contacted by congressional clients through the CRS.gov website.

Figure 1. Map of the Korean Peninsula

Sources: Map produced by CRS using data from ESRI, and the U.S. Department of State's Office of the Geographer.

Note This map reflects official U.S. naming protocols. However, Koreans refer to the "Sea of Japan" as the "East Sea." They refer to the "Yellow Sea" as the "West Sea."

Background

U.S. officials have been concerned about the threats North Korea poses to international order and regional alliances since Pyongyang's 1950 invasion of South Korea. The United Nations Security Council authorized a 16-nation Joint Command, of which the United States was a significant participant, to intervene on the Korean Peninsula to help repel North Korean forces. Shortly thereafter, when U.S. and allied forces pushed far into North Korean territory, China deployed its armed forces to assist the North. The parties eventually fought back to the 38th parallel that originally divided the peninsula following World War II.[14] Counts of the dead and wounded vary: according to the U.S. Department of Defense, more than 33,000 U.S. troops were killed and over 100,000 were wounded during the three-year-long Korean War;[15] China lost upwards of 400,000 troops, with an additional 486,000 wounded;[16] and North Korea's armed forces dead numbered around 215,000, with some 303,000 wounded.[17] South Korea witnessed an estimated 138,000 armed forces and 374,000 civilians killed.[18] Hostilities were formally suspended in 1953 with the signing of an armistice agreement rather than a peace treaty.

Over the subsequent decades, the United States and its regional allies have largely contained the military threats to U.S. interests in Northeast Asia posed by North Korea. The United States and its ally South Korea have deterred three generations of the ruling Kim dynasty in Pyongyang from launching large-scale military operations. The U.S. security commitment to, and relationship with, the Republic of Korea has helped South Korea to emerge as one of the world's largest industrialized countries and, since the late 1980s, a flourishing democracy.[19] South Korea today is one of the United States' most important economic and diplomatic partners in East Asia and globally. With respect to the Korean Peninsula itself, two key components of U.S. policy have been the U.S.-ROK Mutual Defense Treaty, along with the presence of some 28,500 U.S. troops in South Korea.[20] Congress has supported the overall U.S. security approach to Northeast Asia, with the Senate approving defense treaties (and their revisions) with South Korea and Japan, and Congress providing funding for and oversight of the forward deployment of U.S. troops in both countries.

---

[14] Michael Hickey, The Korean War: An Overview, *BBC History*, March 21, 2011, http://www.bbc.co.uk/history/worldwars/coldwar/korea_hickey_01.shtml.

[15] Defense Casualty Analysis System, "Korean War Casualty Summary," at https://dcas.dmdc.osd.mil/dcas/pages/report_korea_sum.xhtml. Retrieved October 24, 2017. President Truman initially described the Korean War as a "police action."

[16] Michael Clodfelter, *Warfare and Armed Conflicts: A Statistical Encyclopedia of Casualty and Other Figures, 1494-2007*, 3rd Ed., 2008.

[17] Ibid.

[18] South Korean Defense Ministry's Institute for Military History Compilation, "War Victims," at https://web.archive.org/web/20130120040603/http://www.imhc.mil.kr/imhcroot/data/korea_view.jsp?seq=4&page=1. Archived on January 30, 2013, retrieved on October 24, 2017.

[19] In addition, containing the North Korean threat arguably helped provide the regional security and stability that allowed Japan, also a U.S. ally, to emerge as the world's second-largest economy in the 1970s (a position it has since ceded to China) and become one of the United States' most important partners in a range of global issues.

[20] CRS Report R41481, *U.S.-South Korea Relations*, coordinated by Mark E. Manyin, p. 11; Jim Garamone, "Dunford: U.S.-South Korean Alliance Ready to Defend Against North Korean Threat," *DOD News*, August 14, 2017, https://www.defense.gov/News/Article/Article/1277384/.

U.S./ROK efforts, however, along with those of other countries, have to date failed to compel the DPRK to abandon its nuclear weapons and ICBM programs. Since Pyongyang began undertaking its weapons of mass destruction (WMD) acquisition programs in earnest in the 1980s, the United States and the international community writ large have employed a range of tools, including diplomacy, sanctions, strengthening of the capabilities of U.S. political and military alliances, and attempts to convince China to increase pressure on the DPRK to change its behavior.[21] Around 90% of North Korea's trade is with China, which arguably gives Beijing significant leverage over Pyongyang. Some argue that these efforts have slowed but not stopped North Korea's drive toward developing a nuclear ICBM capability.[22]

Coercion of State Behavior: Deterrence vs. Compellence

When seeking to influence the behavior of states through the threat of inflicting pain or harm, at least two separate but related strategies can be employed: deterrence and compellence. *Deterrence* is generally applied to contexts wherein the objective is to prevent a state from undertaking a given particular action, such as initiating hostilities. *Compellence*, by contrast, refers to the act of trying to reverse an aggressive move that has been made, for example, returning territory that has already been annexed. For clarity, this report uses "deterrence" to describe strategies to prevent North Korea from initiating, or escalating, hostilities. Because U.S. leaders are seeking to convince Kim Jong-un to denuclearize, this report refers to those proliferation reversal strategies as "compellence." It is therefore possible to say that the United States has thus far *deterred* Pyongyang from initiating hostilities on the Korean Peninsula, but failed to *compel* it to abandon its nuclear weapons and ICBM programs.

Sources: Schelling, Thomas C. *Arms and Influence: With a New Preface and Afterword*. Yale University Press, 2008; Freedman, Lawrence, ed. *Strategic coercion: Concepts and cases*. Oxford University Press, 1998.

Economic and Diplomatic Efforts to Compel Denuclearization[23]

The Trump Administration, as did the Obama Administration before it, places significant emphasis on expanding economic and diplomatic sanctions on North Korea and third-party entities that deal with North Korea. At the U.N. Security Council, the United States led efforts to pass eight sanctions resolutions, including the most recent, Resolution 2375, which was adopted in September 2017.[24] For its part, Congress enacted the North Korea Sanctions and Policy Enhancement Act of 2016 (NKSPEA, P.L. 114-122; signed into law by President Obama in February 2016) and the Korean Interdiction and Modernization of Sanctions Act (KIMS Act, title III of P.L. 115-44; signed into law by President Trump in August 2017) to strengthen actions already taken by the executive branch to implement sanctions required by the Security Council and to expand those economic activities in which North Korea engages that could be subject to penalties—including trade and transactions with third countries (secondary sanctions). Further, since the George H. W. Bush Administration, the United States has imposed unilateral measures against North Korean entities, and entities in third countries, found to have been instrumental in North Korea's WMD programs.[25] To implement the NKSPEA and KIMS Acts, the United States

[21] For more information on nonmilitary policy options, see CRS In Focus IF10467, *Possible U.S. Policy Approaches to North Korea*, by Emma Chanlett-Avery and Mark E. Manyin.

[22] Jim Walsh and John Park, "Stopping North Korea, Inc.: Sanctions Effectiveness and Unintended Consequences," MIT Security Studies Program, 2016, https://drive.google.com/file/d/0B_ph0c6i87C_eGhCOGRhUVFaU28/view.

[23] For more information, see CRS Report R41259, *North Korea: U.S. Relations, Nuclear Diplomacy, and Internal Situation*, coordinated by Emma Chanlett-Avery; CRS In Focus IF10694, *Countering America's Adversaries Through Sanctions Act*, by Dianne E. Rennack, Kenneth Katzman, and Cory Welt; and CRS Insight IN10779, *Nuclear Talks with North Korea?*, by Mary Beth D. Nikitin and Mark E. Manyin.

[24] See https://www.un.org/sc/suborg/en/sanctions/1718/resolutions.

[25] U.S. Treasury, Office of Foreign Assets Control, "What You Need To Know About Treasury Restrictions," September 19, 2012, https://www.treasury.gov/resource-center/sanctions/Programs/Documents/wmd.pdf.

has also imposed economic sanctions on entities in China and Russia for activities that allegedly provide revenue to the North Korean government, provide the means to evade sanctions, or boost the regime's ability to advance its WMD capabilities. The United States also has worked to strengthen the military capabilities of South Korea and Japan.

Two key diplomatic efforts have aimed to induce North Korea to abandon its nuclear weapons program: the Agreed Framework (1994-2002) and the Six-Party Talks (2005-2009). The Agreed Framework between the United States and North Korea followed a ratcheting up of tensions that nearly led to a U.S. military strike. The Six-Party Talks, which involved the DPRK, China, Japan, Russia, South Korea, and the United States, ran from 2003 to 2009, a period that included the first North Korean nuclear test in 2006. During both sets of negotiations, in exchange for specific economic and diplomatic gains, North Korea committed to eventual denuclearization, froze nuclear material production, and partially dismantled key facilities. Since withdrawing from the Six-Party Talks in 2009, North Korea has not agreed to return to its past denuclearization pledges.[26] Subsequently, the United States has primarily concentrated its diplomatic efforts on convincing other nations to increase economic pressure to implement U.N. Security Council resolutions more fully.

[26] North Korea has repeatedly said that it would remove its nuclear arsenal only when all other state also disarm. For more information, see CRS Report R41259, *North Korea: U.S. Relations, Nuclear Diplomacy, and Internal Situation*, coordinated by Emma Chanlett-Avery.

Text of the Mutual Defense Treaty Between the United States and the Republic of Korea, October 1, 1953

The Parties to this Treaty,

Reaffirming their desire to live in peace with all peoples and an governments, and desiring to strengthen the fabric of peace in the Pacific area,

Desiring to declare publicly and formally their common determination to defend themselves against external armed attack so that no potential aggressor could be under the illusion that either of them stands alone in the Pacific area,

Desiring further to strengthen their efforts for collective defense for the preservation of peace and security pending the development of a more comprehensive and effective system of regional security in the Pacific area,

Have agreed as follows:

ARTICLE I

The Parties undertake to settle any international disputes in which they may be involved by peaceful means in such a manner that international peace and security and justice are not endangered and to refrain in their international relations from the threat or use of force in any manner inconsistent with the Purposes of the United Nations, or obligations assumed by any Party toward the United Nations.

ARTICLE II

The Parties will consult together whenever, in the opinion of either of them, the political independence or security of either of the Parties is threatened by external armed attack. Separately and jointly, by self help and mutual aid, the Parties will maintain and develop appropriate means to deter armed attack and will take suitable measures in consultation and agreement to implement this Treaty and to further its purposes.

ARTICLE III

Each Party recognizes that an armed attack in the Pacific area on either of the Parties in territories now under their respective administrative control, or hereafter recognized by one of the Parties as lawfully brought under the administrative control of the other, would be dangerous to its own peace and safety and declares that it would act to meet the common danger in accordance with its constitutional processes.

ARTICLE IV

The Republic of Korea grants, and the United States of America accepts, the right to dispose United States land, air and sea forces in and about the territory of the Republic of Korea as determined by mutual agreement.

ARTICLE V

This Treaty shall be ratified by the United States of America and the Republic of Korea in accordance with their respective constitutional processes and will come into force when instruments of ratification thereof have been exchanged by them at Washington.

ARTICLE VI

This Treaty shall remain in force indefinitely. Either Party may terminate it one year after notice has been given to the other Party.

IN WITNESS WHEREOF the undersigned Plenipotentiaries have signed this Treaty.

DONE in duplicate at Washington, in the English and Korean languages, this first day of October 1953.

UNDERSTANDING OF THE UNITED STATES

[The United States Senate gave its advice and consent to the ratification of the treaty subject to the following understanding:]

It is the understanding of the United States that neither party is obligated, under Article III of the above Treaty, to come to the aid of the other except in case of an external armed attack against such party; nor shall anything in the present Treaty be construed as requiring the United States to give assistance to Korea except in the event of an armed attack against territory which has been recognized by the United States as lawfully brought under the administrative control of the Republic of Korea.

North Korea's Objectives

North Korea watchers argue that the ruling elite's fundamental priority is the survival of the Kim regime. For this reason, few analysts believe that North Korea would launch an unprovoked

attack on U.S. territory or U.S. overseas bases; the consequences for doing so could include a possible overwhelming U.S. military response that could result in the end of the Kim Jong-un regime, and possibly the end of the DPRK as a sovereign state.[27] The National Intelligence Manager for East Asia responsible for integrating the intelligence community's analysis said in a June speech that

> We believe North Korea's strategic objective is the development of a credible nuclear deterrent. Kim Jong Un is committed to development of a long range nuclear armed missile capable of posing a direct threat to the continental United States to complement his existing ability to threaten the region. Kim views nuclear weapons as a key component of regime survival and a deterrent against outside threats. Kim probably judges that once he can strike the U.S. mainland, he can deter attacks on his regime and perhaps coerce Washington into policy decisions that benefit Pyongyang and upset regional alliances—possibly even to attempt to press for the removal of U.S. forces from the peninsula.[28]

North Korea has itself repeatedly emphasized the role of its nuclear weapons as an added deterrent to attack by the United States and/or South Korea. On October 20, 2017, North Korean Foreign Ministry official Choe Son Hui reiterated her government's past statements that its nuclear arsenal is meant to deter attack from the United States and that keeping its weapons is "a matter of life and death for us."[29] She also said that "the current situation deepens our understanding that we need nuclear weapons to repel a potential attack."[30] Under Kim Jong-un, North Korea pursues an official policy of *byungjin*—simultaneous development of its nuclear weapons and its economy. On April 1, 2013, North Korea's party congress adopted the "Law on Consolidating Position of Nuclear Weapons State." The official media (KCNA) summarized the law as saying that nuclear weapons "serve the purpose of deterring and repelling the aggression and attack of the enemy against the DPRK and dealing deadly retaliatory blows at the strongholds of aggression until the world is denuclearized."[31]

Many analysts are concerned that North Korea could launch an attack first, even with nuclear-armed missiles, if it perceived a U.S. attack as imminent.[32] These voices emphasize the need for

---

[27] Interview with William Cohen and Senator Ben Cardin, Morning Joe, MSNBC.com, August 9, 2017, http://www.msnbc.com/morning-joe/watch/fmr-defense-secetary-north-korea-is-not-suicidal-1020692035774; William J. Perry, "North Korea Called Me a 'War Maniac.' I Ignored Them, and Trump Should Too," *Politico*, October 3, 2017, http://www.politico.com/magazine/story/2017/10/03/north-korea-war-maniac-donald-trump-215672; Vipin Narang, "Why Kim Jong-Un wouldn't be irrational to use a nuclear bomb first: the nuclear strategy of weaker powers," *The Washington Post Outlook*, September 8, 2017, https://www.washingtonpost.com/outlook/why-kim-jong-un-wouldnt-be-irrational-to-use-a-nuclear-bomb-first/2017/09/08/a9d36ca4-934f-11e7-aace-04b862b2b3f3_story.html?utm_term=.ade2c770251a; Anna Fifield, "Kim Jong Un Wants to Stay in Power—and that is an argument against nuclear war," *The Washington* Post, August 10, 2017, https://www.washingtonpost.com/world/asia_pacific/kim-jong-un-wants-to-stay-in-power—and-that-is-an-argument-against-nuclear-war/2017/08/10/52b6ae7c-7d2e-11e7-b2b1-aeba62854dfa_story.html?utm_term=.894b67761006.

[28] Scott W. Bray, National Intelligence Manager East Asia, "North Korea's Nuclear Weapons and Missile Capability," presented at the Institute for Korean-American Studies Symposium, June 26, 2017, https://www.dni.gov/index.php/newsroom/speeches-interviews/item/1774-speech-to-the-institute-for-corean-american-studies-north-korea-s-nuclear-weapons-and-missile-capability.

[29] Leo Byrne, "N. Korea 'not planning negotiations over nuclear weapons," *NKNews*, October 20, 2017, https://www.nknews.org/2017/10/n-korea-not-planning-negotiations-over-nuclear-weapons/.

[30] Ibid.

[31] "Law on Consolidating Position of Nuclear Weapons State Adopted," *Korean Central News* Agency, April 1, 2013, accessed at KCNA Watch, https://kcnawatch.co/newstream/1451896124-739013370/law-on-consolidating-position-of-nuclear-weapons-state-adopted/.

[32] Mark Fitzpatrick and Michael Elleman, "Deterring North Korea the wrong way," *Politics and Strategy: The Survival Editors' Blog,* IISS, August 11, 2017, https://www.iiss.org/en/politics%20and%20strategy/blogsections/2017-6dda/

careful U.S. rhetoric and confidence-building measures to avoid miscalculation.[33] The Director of National Intelligence said in early 2012 that "we also assess, albeit with low confidence, Pyongyang probably would not attempt to use nuclear weapons against US forces or territory, unless it perceived its regime to be on the verge of military defeat and risked an irretrievable loss of control."[34]

Possessing nuclear weapons and long-range missile capability could also help the Kim government achieve a number of additional long-standing objectives. In May 2017 testimony, Director of National Intelligence Dan Coats repeated the intelligence community's long-standing analysis that, "Pyongyang's nuclear capabilities are intended for deterrence, international prestige, and coercive diplomacy."[35] Accordingly, Pyongyang may also see the acquisition of a nuclear-tipped ICBM capability as a way to increase its freedom of action, in the belief that the United States will be more constrained if North Korea can credibly threaten U.S. territories. The DPRK may believe that by acquiring nuclear-tipped ICBM capability, and thereby deterring the United States, it might have a greater chance of achieving its ultimate goal of reunifying the Korean Peninsula.[36] Important steps in this process would include weakening the credibility of the U.S. commitment to defend South Korea and persuading the United States to remove sanctions and withdraw its troops from the Korean Peninsula.[37] North Korea may also see recognition as a nuclear weapons state as a way to cement its legitimacy, both with its own populace and with the international community.[38]

U.S. Goals and Military Options

Sanctions, diplomacy, interdiction, and military capacity-building efforts have arguably slowed—for instance, through raising the costs of procuring materials—although not halted, the advance of North Korea's WMD programs. As multinational sanctions have gained momentum during the past several years, however, DPRK progress in its missile programs has also significantly

august-b877/deterring-north-korea-the-wrong-way-4bd9.

[33] Joshua Pollack, "U.S. should start talking with North Korea to prevent nuclear war," *Daily News*, August 8, 2017, http://www.nydailynews.com/news/politics/u-s-start-talking-north-korea-prevent-nuclear-war-article-1.3394949. Siegfried Hecker, "Time to insert the control rods on North Korea," *The Bulletin of the Atomic Scientists*, October 17, 2017, https://thebulletin.org/time-insert-control-rods-north-korea11198.

[34] Annual Threat Assessment of the Director of National Intelligence for the Senate Select Committee on Intelligence, January 31, 2012, at http://www.dni.gov/testimonies/20120131_testimony_ata.pdf.

[35] Director of National Intelligence Dan Coats, "Statement for the Record Worldwide Threat Assessment of the U.S. Intelligence Community," May 11, 2017, https://www.dni.gov/index.php/newsroom/congressional-testimonies/item/1757-statement-for-the-record-worldwide-threat-assessment-of-the-u-s-intelligence-community-before-the-ssci.

[36] Jonathan Kaiman, "Here's what's driving North Korea's nuclear program- and it might be more than self-defense," *LA Times*, May 1, 2017, http://www.latimes.com/world/asia/la-fg-north-korea-missile-worship-2017-story.html; Nicholas Eberstadt, "From "Engagement" to Threat Reduction: Moving toward a North Korea Strategy That Works," testimony before Senate Committee on Foreign Relations hearing, *Confronting the North Korea Threat: Reassessing Policy Options*, 115th Cong., 1st sess., January 31, 2017.

[37] For more on North Korea's strategic goals, see Sue Mi Terry, "North Korea's Strategic Goals and Policy towards the United States and South Korea," *International Journal of Korean Studies*, Fall 2016, Vol. XVII, No. 2, http://www.icks.org/data/ijks/1482461379_add_file_3.pdf; David Maxwell, "15 assumptions about the behavior of North Korea's Kim Family Regime (KFR)," *Foreign Policy* Best Defense column, September 5, 2017, http://foreignpolicy.com/2017/09/05/%E2%80%8B15-assumptions-about-the-behavior-of-north-koreas-kim-family-regime-kfr/.

[38] Max Fisher, "North Korea's Nuclear Arms Sustain Drive for 'Final Victory'," *The New York Times*, July 29, 2017, https://www.nytimes.com/2017/07/29/world/asia/north-korea-nuclear-missile.html.

Possible Alternative Strategies

Achieving the *denuclearization* of North Korea has been the official policy of the past four U.S. Administrations, and is now that of the Trump Administration. Some now hold the view, however, that this approach is no longer feasible, in large measure due to the belief that the DPRK is unlikely to denuclearize voluntarily, and that the United States might instead recalibrate its policy to tacitly acknowledge that North Korea is a nuclear power and pursue other strategic objectives. These possible alternative strategies—each of which entails its own degree of risk—include the following:

- Negotiating a *freeze of North Korea's nuclear and/or missile programs, particularly further tests*. This could prevent Pyongyang from making further technological advances and limit its ability and incentive to sell its existing nuclear stockpile abroad. It could create a diplomatic space to engage in negotiations to convince North Korea to enter into a process of dismantling its nuclear program, presumably in return for economic and other inducements.[45]
- Accepting North Korean nuclear capabilities and focusing U.S. military, diplomatic, and economic power on *deterring* North Korea from using its arsenal, as was done with the Soviet Union and China.[46]
- Focusing on containing DPRK behavior, as North Korea's expanded nuclear capabilities have rendered deterrence alone no longer sufficient. Instead, the argument goes, the United States might adopt a more aggressive policy of maintaining and expanding an international effort that exerts increasing external economic, diplomatic, military, and other pressure on North Korea to limit its actions and options.[47]

accelerated.[39] As a result of this progress, the Trump Administration appears to have raised the issue of North Korea's nuclear and missile programs to a top U.S. foreign and national security policy priority. Describing its policy as "maximum pressure," or "strategic accountability," the Administration has adopted an approach of increasing pressure on Pyongyang in an effort to convince the North Korean regime "to de-escalate and return to the path of dialogue."[40] In August 2017, Secretary of State Rex Tillerson and Secretary of Defense James Mattis outlined the U.S. policy objective and parameters for the Korean Peninsula:

> The object of our peaceful pressure campaign is the denuclearization of the Korean Peninsula. The U.S. has no interest in regime change or accelerated reunification of Korea. We do not seek an excuse to garrison U.S. troops north of the Demilitarized Zone. We have no desire to inflict harm on the long-suffering North Korean people, who are distinct from the hostile regime in Pyongyang.[41]

In their public remarks, Trump Administration officials have emphasized that, while diplomacy and pressure will continue, a full range of military options could be employed to resolve the crisis. Chairman of the Joint Chiefs of Staff General Joseph Dunford, for example, stated at the Aspen Security Forum in July 2017 that "it is not unimaginable to have military options to respond to North Korean nuclear capability. What's unimaginable to me is allowing a capability that would allow a nuclear weapon to land in Denver, Colorado. That's unimaginable to me. So my job will be to develop military options to make sure that doesn't happen."[42]

A key factor driving the Administration's actions and statements appears to be the assessment that sometime in 2018, North Korea is likely to acquire the capability of reaching the continental United States with a nuclear-tipped ICBM.[43] This assessment implies that the time frame for conducting military action without the risk of a North Korean nuclear attack against U.S. territory is narrowing. Such an assessment may increase the urgency of efforts to restart multilateral diplomatic efforts with North Korea, efforts that some maintain could be strengthened and accelerated if both North Korea and China believe that a U.S. military strike on the Korean Peninsula is becoming more likely.[44]

Risk of Proliferation

In addition to possible threats to the continental United States, allies, and U.S. Armed Forces in the region, concerns persist that should the goal of denuclearization remain unaccomplished,

[45] Joseph DeTrani, "Averting War on the Korean Peninsula," *CipherBrief* blog, August 21, 2017, https://www.thecipherbrief.com/article/exclusive/asia/averting-war-korean-peninsula. For summary of some of the

North Korea might continue to proliferate its missile and nuclear technology for a variety of reasons, including financial profit by selling materials and information to state and nonstate actors, joint exchange of data to develop its own systems with other states (Iran and Syria, most notably), or as part of a general provocative trend.[48] DNI Dan Coats testified before Congress in May 2017 that "North Korea's export of ballistic missiles and associated materials to several countries, including Iran and Syria, and its assistance to Syria's construction of a nuclear reactor, destroyed in 2007, illustrate its willingness to proliferate dangerous technologies."[49] In the wake of an earlier set of sanctions, former DNI Dennis Blair said in March 2016 that North Korea had "more motivation to increase their supply of hard currency any way they can," and selling nuclear materials was "certainly a possibility that has occurred to them."[50]

---

arguments in favor of re-invigorating efforts to engage North Korea, see John Delury, "Take Preventive War With North Korea Off the Table," *Foreign Affairs*, August 22, 2017, https://www.foreignaffairs.com/articles/north-korea/2017-08-22/take-preventive-war-north-korea-table.

[40] James Mattis and Rex Tillerson, "We're Holding Pyongyang to Account: The U.S. its allies and the world are united in our pursuit of a denuclearized Korean Peninsula," *The Wall Street Journal*, August 13, 2017, https://www.wsj.com/articles/were-holding-pyongyang-to-account-1502660253. Secretary Tillerson has identified what has become as "the four nos" to illustrate what the U.S. is not seeking: "... we do not seek regime change, we do not seek a regime collapse, we do not seek an accelerated reunification of the peninsula, and we do not seek a reason to send our forces north of the Demilitarized Zone." State Department, "Rex W. Tillerson Remarks at a Press Availability," August 1, 2017. State Department Press Office, "Rex W. Tillerson Interview with CBS' Face the Nation," September 17, 2017, https://www.state.gov/secretary/remarks/2017/09/274199.htm.

[41] James Mattis and Rex Tillerson, "We're Holding Pyongyang to Account: The U.S. its allies and the world are united in our pursuit of a denuclearized Korean Peninsula," *The Wall Street Journal*, August 13, 2017, https://www.wsj.com/articles/were-holding-pyongyang-to-account-1502660253.

[42] Nahal Toosi, "Dunford: Military option for North Korea not 'unimaginable,'" *Politico*, July 22, 2017, http://www.politico.com/story/2017/07/22/dunford-north-korea-military-option-not-unimaginable-240851.

[43] Ellen Nakashima, Anna Fifield and Joby Warrick, "North Korea could cross ICBM threshold next year, U.S. officials warn in new assessment," *The Washington Post*, July 25, 2017, https://web.archive.org/web/20170908131324/https://www.washingtonpost.com/world/national-security/north-korea-could-cross-icbm-threshold-next-year-us-officials-warn-in-new-assessment/2017/07/25/4107dc4a-70af-11e7-8f39-eeb7d3a2d304_story.html?utm_term=.cb73110bcbed. See also "Conversation between CIA Director Mike Pompeo and Juan Zarate, Chairman and Senior Counselor of FDD's Center on Sanctions and Illicit Finance," Transcript, FDD National Security Summit, October 19, 2017, https://www.defenddemocracy.org/content/uploads/ ... /Transcript_FINAL_Pompeo.pdf.

[44] U.S. Congress, Senate Committee on Foreign Relations, Subcommittee on East Asia, the Pacific, and International Cybersecurity Policy, *Assessing the Maximum Pressure and Engagement Policy Toward North Korea, Panel 1*, 115th Cong., 1st sess., July 25, 2017.

[45] Joseph DeTrani, "Averting War on the Korean Peninsula," *CipherBrief* blog, August 21, 2017, https://www.thecipherbrief.com/article/exclusive/asia/averting-war-korean-peninsula. For summary of some of the arguments in favor of re-invigorating efforts to engage North Korea, see John Delury, "Take Preventive War With North Korea Off the Table," *Foreign Affairs*, August 22, 2017, https://www.foreignaffairs.com/articles/north-korea/2017-08-22/take-preventive-war-north-korea-table.

[46] Bing West, "Treat North Korea Like Other Nuclear-Armed Adversaries," *The Hoover Institution*, September 5, 2017, http://www.hoover.org/research/treat-north-korea-other-nuclear-armed-adversaries.

[47] Barry Pavel and Robert Manning, "A Best-Chance North Korea Policy," *JoongAng Ilbo*, May 30, 2017, http://koreajoongangdaily.joins.com/news/article/article.aspx?aid=3033949&cloc=etc|jad|googlenews.

[48] For more information, see CRS Report R43480, *Iran-North Korea-Syria Ballistic Missile and Nuclear Cooperation*, coordinated by Paul K. Kerr.

[49] "Statement for the Record Worldwide Threat Assessment of the U.S. Intelligence Community," May 11, 2017, https://www.dni.gov/index.php/newsroom/congressional-testimonies/item/1757-statement-for-the-record-worldwide-threat-assessment-of-the-u-s-intelligence-community-before-the-ssci.

[50] "Former Intelligence Chief: N. Korea Could Sell Nuclear Materials," *Voice of America*, March, 10, 2016.

Efficacy of the Use of Force

Some contend that the military is an inappropriate instrument for resolving the standoff between the DPRK and the international community.[51] They argue, for example, that even the threat of military force actually strengthens the Kim regime domestically, as it feeds the DPRK narrative that it must be vigilant against an aggressive United States. These observers contend that, instead, the United States should focus its efforts on influence operations, in particular, to shape the perceptions of the Kim regime's mid-level leaders and the North Korean population.[52] Doing so might, in turn, eventually foster the collapse of the Kim regime itself and possibly create a window for denuclearization of North Korea. Others, however, maintain that these kinds of influence operations are unlikely to affect North Korean society in a manner that might result in regime degradation or collapse.[53]

In addition, some observers argue that although denuclearization may be a long-term strategic goal of the United States, achieving this goal in the short term may be difficult, particularly due to the high risk of military escalation. Therefore, they maintain, other tactics, such as deterrence and containment, may be more appropriate than a preventive military strike. In addition, some see military pressure as well as sanctions as a way to raise the costs for North Korea of continuing on its current nuclear and missile development path, thereby persuading the DPRK to eventually agree to a halt or reversal in these programs.[54]

Different Perceptions of the North Korean Military Threat

Terms often used by scholars and practitioners to describe the North Korean regime include mercurial, dictatorial, belligerent, bellicose, rogue, and even state-run criminal enterprise. Many Americans therefore wonder why some other countries, including South Korea, China, and Russia, appear more willing to *de facto* tolerate nuclear weapons—and the capability to deliver them across continents—in the possession of a state with those characteristics. Perceptions of threat are likely driven by two key factors: perception of *capability* and *intent*. While few doubt that North Korea has built capabilities that could hold targets in the region at risk, perceptions tend to differ regarding the DPRK's intent.

China is arguably North Korea's closest partner. China and North Korea are, at least nominally, allies; approximately 90% of North Korea's trade is believed to be with China. As a result, China does not appear to be concerned that the DPRK is currently targeting or threatening Chinese territory or interests, although some Chinese analysts fear that if China continues increasing pressure on North Korea, the DPRK could come to target China. Instead, Chinese leaders appear more concerned that severe pressure on North Korea could destabilize the Korean Peninsula, possibly spreading instability into China or prompting Beijing to deploy the People's Liberation Army over its 900-mile long border into North Korea to manage the situation. Beijing is also thought to fear the prospect of a massive flow of North Korean refugees into China and the loss of North Korea as a

[51] Bruce Klinger, "North Korea Responds to Trump's 'Fire and Fury,' Threats with a Hydrogen Bomb," The Heritage Foundation Commentary," September 5, 2017, http://www.heritage.org/asia/commentary/north-korea-responds-trumps-fire-and-fury-threats-hydrogen-bomb.

[52] Fredrick "Skip" Vincenzo, *An Information Based Strategy to Reduce North Korea's Increasing Threat: Recommendations for ROK & U.S. Policy Makers*, October 2016, http://georgetownsecuritystudiesreview.org/wp-content/uploads/2016/10/An-Information-Based-Strategy-to-Reduce-North-Koreas-Increasing-Threat.pdf; Paul Yingling, The Supreme Art of War on the Korean Peninsula: Regime Change through Targeting the mind of Kim Jong-un," *Best Defense blog on Foreignpolicy.com*, August 15, 2017, http://foreignpolicy.com/2017/08/15/the-supreme-art-of-war-on-the-korean-peninsula-regime-change-through-targeting-the-mind-of-kim-jong-un/.

[53] Alexander Dukalskis, "I interviewed 60 people who fled North Korea—Here's what they said about life before and after their escape," *Business Insider*, September 7, 2017, http://www.businessinsider.com/north-korea-nuclear-threat-the-lives-of-people-who-fled-north-korea-2017-9.

[54] John Allen, Richard Bush, Robert Einhorn, Steven Pifer, Jonathan Pollack, and Evans Revere, *Averting catastrophe: U.S. Policy Options for North Korea*, *Brookings Institution*, April 2017, https://www.brookings.edu/research/averting-catastrophe-u-s-policy-options-for-north-korea/.

"buffer" against the U.S.-allied Republic of Korea should the Kim regime collapse. Even so, China has condemned North Korea's weapons programs and has voted for all eight UNSC Resolutions sanctioning Pyongyang, albeit after weakening their requirements and terms.[55]

Russia is now believed to be North Korea's second-largest trading partner, although its trade with North Korea is dwarfed by China's. Russia is generally estimated to have been North Korea's third-largest trading partner from 2010 to 2015. Like China, Russia has supported all eight UNSC resolutions sanctioning North Korea's WMD programs, after working with China to soften some aspects.[56] Russia has a border with North Korea. Yet Moscow is nearly 4,000 miles from the Korean Peninsula, a distance that may reduce Russia's sense of vulnerability to instability in that region.

Although the South Korean government and populace have become increasingly alarmed by North Korea's expanding nuclear capabilities, and tend to agree with the United States about the DPRK's capability and intent, South Korea—perhaps by necessity—tends to differ from the United States regarding what can be done about the problem. For decades, South Korea has lived with the threat of massive devastation from North Korean conventional forces—specifically the DPRK's long-range artillery. North Korean nuclear weapons are therefore not quite as consequential a development to South Koreans as they are to other actors in the region. In addition, whereas North Korean nuclear-armed ICBMs would pose a danger to the United States, shorter-range nuclear-tipped missiles pose a threat to the very *existence* of South Korea because of the two Koreas' proximity. In addition, some South Koreans have family members living in the North and see the peninsula as one divided Korean nation. For those reasons, most South Koreans oppose the idea of a military strike against North Korea, as doing so could easily lead to unpredictable conflict escalation, including the destruction of Seoul through either conventional or unconventional means, or both.

By contrast, the fact that the United States has technically been in conflict with North Korea since 1950, in combination with North Korea's aggressive statements and provocative actions over the years, means that many leaders in Washington, DC, believe that North Korea has long had the intent to threaten the American homeland, but may soon have the capability to do so with credible nuclear missiles.

Overview of the Peninsular Military Capabilities[57]

Understanding the military dimensions of the current standoff, and the relative feasibility of different options to use force to resolve the crisis, requires an appreciation of the extant military capabilities on the Korean Peninsula. Estimating the military balance in the region, however, and how military forces might be employed during wartime, requires accounting for a variety of variables; therefore, such estimation is an inherently imprecise endeavor. As an overall approach to designing its military, the DPRK has emphasized quantity over quality, and has committed considerable resources to developing asymmetric capabilities such as weapons of mass

[55] The Chinese government maintains that it is committed to full implementation of the relevant U.N. Security Council Resolutions. Accordingly, Beijing appears to equate implementation with the issuance of domestic directives explaining the sanctions and requiring that domestic firms comply with them. Critics, however, see a problem with enforcement. Some Chinese firms appear to continue to seek to evade sanctions, as evidenced by actions the U.S. government has taken in the last year against half a dozen Chinese firms and a number of Chinese individuals over violations of North Korea sanctions. See, for example, Carol Morello and Peter Whoriskey, "U.S. Hits Chinese and Russian Companies, Individuals with Sanctions for Doing Business with North Korea," *The Washington Post*, August 22, 2017, https://www.washingtonpost.com/world/national-security/us-sanctions-chinese-and-russian-companies-and-individuals-for-conducting-business-with-north-korea/2017/08/22/78992312-8743-11e7-961d-2f373b3977ee_story.html?utm_term=.cb29b0faa13c.

[56] The U.S. government appears to also question whether the Russian government is sufficiently enforcing relevant sanctions. For example, alongside the actions taken toward Chinese actors, the U.S. Treasury Department is also targeting Russian firms and individuals suspected of being in violation of sanctions. See https://www.treasury.gov/press-center/press-releases/Pages/sm0148.aspx.

[57] Not counted in this overview are the capabilities of China, Russia, or other regional U.S. allies (such as Japan or Australia) who could play a role in a conflict on the Korean peninsula or its aftermath. This is because it is difficult to assess which, if any, of those actors might become involved in renewed hostilities.

destruction and Special Operations Forces. The Republic of Korea, by contrast, has emphasized quality over quantity and maintains a highly skilled, well-trained, and capable conventional force. In terms of cyber capabilities, the DPRK has been conducting increasingly aggressive cyber operations against the heavily networked ROK and other targets. Although the DPRK has limited Internet connectivity itself, components of its weapons programs may be vulnerable to cyberattacks.[58]

Appendix A analyzes in detail the capabilities of the key actors presently on the Korean Peninsula.

DPRK Capabilities

The Korean People's Army (KPA)—a large, ground force-centric organization comprising ground, air, naval, missile, and special operations forces (SOF)—has over 1 million soldiers in its ranks.[59] Although it is the fourth-largest military in the world, it has some significant deficiencies, particularly with respect to training and aging (if not archaic) equipment.[60] A number of analysts attribute that degradation of capability to food and fuel shortages, economic hardship, and an inability to replace aging equipment, because of international arms markets being closed to North Korea due to sanctions and international nonproliferation regimes, among other factors.[61]

To compensate, particularly in recent years, the DPRK appears to have heavily invested in asymmetric capabilities, both on the "high" (for example, weapons of mass destruction) and "low" (for example, SOF) ends of the capability spectrum. The presence of chemical and biological weapons that could reach South Korea and parts of Japan has long been confirmed;[62] some observers believe that those systems would be immediately employed by the DPRK regime in the event of a conflict.[63] Hardened facilities, particularly in forward locations, are thought to protect artillery and supplies and WMD capabilities, including chemical munitions. The DPRK also has missiles believed capable of reaching Guam, other U.S. bases, and allies in the immediate region, including Japan.[64] With respect to the "low" end of the capability spectrum, estimates vary on the size of DPRK SOF, although U.S. and ROK intelligence and military sources reportedly maintain that its end strength may be as high as 200,000, including 140,000 light infantry and 60,000 in the 11th Storm Corps.[65]

---

[58] Cara McCoogan, "North Korea's Internet Revealed to Have Just 28 Websites," *The Daily Telegraph*, September 21, 2016, http://www.telegraph.co.uk/technology/2016/09/21/north-koreas-internet-revealed-to-have-just-28-websites/.

[59] See **Appendix B**.

[60] Cordesman, p. 85.

[61] DNI Clapper, February 10, 2011.

62 Hyun-Kyung Kim, Elizabeth Philipp, Hattie Chung, North Korea's Biological Weapons Program: the Known and the Unknown, Belfer Center for Science and International Affairs, Harvard Kennedy School, October 2017. Ministry of National Defense, Republic of Korea, 2010 Defense White Paper, December 2010, https://www.files.ethz.ch/isn/155720/South%20Korea%202010_eng-1.pdf; Bruce W. Bennett, "N.K WMDs Carry Catastrophic Potential," The RAND Blog, November 19, 2014., https://www.rand.org/blog/2014/11/nk-wmds-carry-catastrophic-potential.html; North Korea Security Challenges: A Net Assessment, IISS Strategic Dossier, July 21, 2011, https://www.iiss.org/en/publications/strategic%20dossiers/issues/north-korean-security-challenges-4a8d.

[63] Wilson Dizard, *Mystery Clouds North Korea's Chemical Arsenal*, August 24, 2017, https://www.thecipherbrief.com/mystery-clouds-north-korea-chemical-arsenal.

[64] See Vipin Narang, "Why Kim Jong-Un wouldn't be irrational to use a nuclear bomb first: the nuclear strategy of weaker powers," *The Washington Post Outlook*, September 8, 2017.

[65] Cordesman, 130. The 11th Storm Corps is the primary DPRK unit tasked with unconventional and special warfare.

These "high" and "low" capabilities are in addition to the considerable DPRK inventory of long-range rockets, artillery, short-range ballistic missiles, and chemical weaponry aimed at targets in the Republic of Korea.[66] U.S. military facilities and the Seoul region, the latter with a population of approximately 23 million, are within range of significant conventional artillery capabilities situated along the DMZ. Reports indicate that the DPRK has enhanced the mobility of its missile launchers and at least some of its artillery batteries, arguably making them more difficult to target.[67] Reports also suggest that the DPRK has hardened many of its key facilities through an extensive network of underground tunnels, a further challenge to fully identifying the DPRK's military capabilities.[68]

ROK Capabilities

While the DPRK has sought to balance its conventional deficiencies with asymmetric capabilities, the Republic of Korea has steadily improved its conventional forces, through increasing their lethality with improvements in command, control, and communications and advanced technology, as well as through incorporating battlefield lessons from its experience in Operation Iraqi Freedom.[69] Still, the ROK's active duty military is approximately half the size of the DPRK's, leading some analysts to conclude that South Korea may not be able to amass enough force to meet a challenge from the North. ROK leaders have decided not to acquire nuclear weapons, but rely instead on U.S. security assurances (in particular, the U.S. extended deterrent nuclear umbrella).[70] Toward that end, some in South Korea, in particular, the Liberty Korea Party, have called for the redeployment of U.S. tactical nuclear weapons in order to send a powerful deterrent message to the North and demonstrate a strong commitment to the South.[71] ROK became a signatory to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in 1975 and is a state party to other related treaties and nonproliferation regimes, including those curtailing chemical and biological weapons and missile proliferation.

U.S. Posture

There are 28,500 U.S. troops and their families currently stationed in the Republic of Korea, primarily playing a deterrent role by acting as a tripwire in case of DPRK hostilities south of the DMZ.[72] U.S. Armed Forces train with their ROK partners to better prepare them to participate in coalition operations. The United States reportedly also provides the ROK with several key

---

[66] U.S. Congress, Senate Committee on Armed Services, *United States Pacific Command and United States Forces Korea: Testimony by Harry Harris, Commander, United States Pacific Command*, 115th Cong., 1st sess., April 27, 2017.

[67] See https://www.defense.gov/Portals/1/Documents/pubs/Military_and_Security_Developments_Involving_the_Democratic_Peoples_Republic_of_Korea_2015.PDF, p. 11.

[68] Ibid., p. 11.

[69] Cordesman, 155.

[70] CRS Report R44950, *Redeploying U.S. Nuclear Weapons to South Korea: Background and Implications in Brief*, by Amy F. Woolf and Emma Chanlett-Avery.

[71] Ibid.

[72] CRS Report R41481, *U.S.-South Korea Relations*, coordinated by Mark E. Manyin. See also United Nations Command, Combined Forces Command, U.S. Forces Korea, "Strategic Digest 2016," http://www.usfk.mil/Portals/105/Documents/2016%20Strategic%20Digest.pdf, p. 16; Jim Garamone, "Dunford: U.S.-South Korean Alliance Ready to Defend Against North Korean Threat," *DOD News*, August 14, 2017, https://www.defense.gov/News/Article/Article/1277384/.

enablers, including military intelligence.[73] Since 2004, the U.S. Air Force has increased its presence in ROK through the regular rotation into South Korea of advanced strike aircraft. These rotations do not constitute a permanent presence, but the aircraft often remain in South Korea for weeks and sometimes months for training.[74] Due to these conventional capabilities, as well as the U.S.-ROK Mutual Defense Treaty, the United States has extended its deterrent umbrella to South Korea, including nuclear deterrence.

Under current U.S./ROK operational plans (OPLANS), the South Korean government has publicly stated that the United States would deploy units to reinforce the ROK in the event of military hostilities. In the event of wartime, and depending on those circumstances, official ROK sources note that up to 690,000 additional U.S. forces could be called upon to reinforce U.S./ROK positions, along with 160 naval vessels and 2,000 aircraft.[75]

U.N. Security Council Resolutions and the Korean War Armistice Agreement

The current North Korea crisis involves relatively recent developments in the nuclear weapons program of North Korea and an emerging national security threat to the United States that a number of analysts argue requires new action by the international community. Several existing measures already govern, at least in part, the situation on the Korean Peninsula and any military conflict that might take place there. The U.N. Security Council adopted three resolutions[76] in response to the 1950 invasion of South Korea by North Korea; U.N. unified command and the armed forces of North Korea and China signed an armistice agreement[77] ceasing hostilities on the peninsula in 1953. It is not certain, however, whether these documents govern the current North Korea situation in any way.

Although the U.N. Security Council resolutions called for an immediate cessation of hostilities, established authority to use military force to stop the North Korean invasion of South Korea, and called for establishment of a unified U.N. military command headed by the United States, they did so to ensure that North Korean forces withdrew north of the 38th parallel. Upon cessation of hostilities and the withdrawal of North Korean and Chinese forces from South Korea across the demilitarized zone straddling the 38th parallel, the objectives of the U.N. Security Council resolutions authorizing the use of military force were met. It can be argued, therefore, that the resolutions would no longer authorize any use of military force against North Korea unless North Korean forces again crossed into South Korea.

The armistice agreement represented a joint decision by the U.N. command, North Korea, and China to cease hostilities, and it has endured as the framework upon which peace on the Korean Peninsula has been based since 1953. Yet, numerous violations of the armistice agreement have occurred. North Korea has used military force against South Korean territory on a number of occasions. In addition, the armistice agreement requires that the parties to the conflict refrain from introducing new weapons into the Korean Peninsula, something that both sides have done on multiple occasions since the armistice was signed. North Korea also has declared several times its determination that the armistice agreement is no longer valid, and that it was withdrawing from the agreement. Thus, while the United Nations has stated that the armistice agreement still serves as the basis and starting point for permanent peace on the Korean Peninsula, it may be difficult to argue that it still serves as the controlling source of international law and authority with regard to all uses of military force.

Key Risks

As one observer notes, due to the complexity of the situation and the different military capabilities of all sides, predictions regarding how hostilities might unfold on the Korean

[73] https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/130513_KMB_volume2.pdf., p. xiv.

[74] CRS Report R41481, *U.S.-South Korea Relations*, coordinated by Mark E. Manyin, p. 19.

[75] Ministry of National Defense of the Republic of Korea, *Defense White Paper 2016*, p. 53. Available at http://www.mnd.go/kr/user/mnd/upload/pblictn/PBLICTNEBOOK_201705180311469090.pdf.

[76] U.N. Security Council Resolution 82 of June 25, 1950 (S/1501); U.N. Security Council Resolution 83 of June 27, 1950 (S/1511); U.N. Security Council Resolution 84 of July 7, 1950 (S/1588).

[77] Agreement between the Commander-in-Chief, United Nations Command, on the one hand, and the Supreme Commander of the Korean People's Army and the Commander of the Chinese People's volunteers, on the other hand, concerning a military armistice in Korea, July 27, 1953.

Peninsula are comparable to describing a "very complex game of three-dimensional chess in terms of tic-tac-toe."[78] Accordingly, rather than analyzing possible DPRK countermoves or possible military campaign trajectories, this section briefly discusses some key risk considerations related to possible military action on the Korean Peninsula.

North Korean Responses

The Kim regime could respond to any kind of U.S./ROK military activity through a variety of conventional and unconventional means, any use of which could escalate into a full-scale war on the Korean Peninsula. Detailing specific possible responses is difficult, however, given the scarcity of relevant available literature. In the first instance, despite noted deficiencies in its overall conventional force structure, many observers expect the DPRK would employ its conventional artillery toward targets in South Korea and inflict considerable damage upon Seoul (as detailed in the next section).

In terms of unconventional responses, the DPRK might employ its highly trained SOF to sabotage U.S./ROK targets south of the DMZ. The DPRK might also employ weapons of mass destruction during a conflict with the U.S./ROK. A possibility also exists that a conflict with DPRK could escalate into nuclear warfare, the result of which could be radioactive contamination that could affect all states in the immediate region, including China, Japan, and South Korea. As a consequence in this possible contingency, U.S. forces would likely be required to operate in WMD-contaminated zones, and the Korean Peninsula itself could face enormous devastation and loss of life. North Korea also could launch a cyberattack against the United States, South Korea, or other targets.[79] Further, some observers contend that North Korea may already have the capability to launch a nuclear attack against the continental United States, possibly delivered covertly by smuggling, or even through using container ships as a means of delivery.[80]

Mass Casualties

Figure 2 depicts population density on the Korean Peninsula. It suggests that an escalation of a military conflict on the peninsula could affect upwards of 25 million people on either side of the border, including at least 100,000 U.S. citizens (some estimates range as high as 500,000).[81] Even if the DPRK uses only its conventional munitions (which most analysts believe would be unlikely given North Korea's arsenal of WMD capabilities), some estimates range from between 30,000 and 300,000 dead in the first days of fighting, given that DPRK artillery is thought by some to be capable of firing 10,000 rounds per minute at Seoul.[82] Casualties would likely be significantly

[78] Anthony Cordesman, as quoted in: Motoko Rich, "In North Korea, 'Surgical Strike' could spin into 'worst kind of fighting,'" *The New York Times*, July 5, 2017, https://www.nytimes.com/2017/07/05/world/asia/north-korea-south-us-nuclear-war.html.

[79] CRS Report R44912, *North Korean Cyber Capabilities: In Brief*, by Emma Chanlett-Avery et al.

[80] Michael Morell, "North Korea may already be able to launch a nuclear attack on the U.S.," *The Washington Post*, September 6, 2017, https://www.washingtonpost.com/opinions/north-korea-may-already-be-able-to-launch-a-nuclear-attack-on-the-us/2017/09/06/; "A Conversation with James Clapper," Council on Foreign Relations Event Transcript, October 25, 2016, https://www.cfr.org/event/conversation-james-clapper.

[81] Estimates on the number of US citizens in the ROK vary. According to the U.S. embassy in Seoul, there are approximately 100,000 U.S. citizens in South Korea; others have stated that the figure is significantly higher, ranging from 200,000 to 500,000. Susan E. Rice, "It's Not Too Late on North Korea," *The New York Times*, August 10, 2017, https://www.nytimes.com/2017/08/10/opinion/susan-rice-trump-north-korea.html; CRS conversation with USG official, August 23, 2017.

[82] These figures are derived from a CRS literature review of publicly available literature on campaign context and casualty estimates in the event of the resumption of hostilities on the Korean Peninsula. See, for example, Motoko

higher should nonconventional munitions or capabilities be used. This wide range of casualty estimates is due to the fact that a wide variety of variables (including campaign length, weaponry used, the effectiveness of noncombatant evacuation operations, whether China or Russia might become militarily involved and so on) would likely have significant bearing on the actual numbers of casualties on all sides. Responding to congressional inquiries, the Joint Staff released a letter on October 27, 2017, noting the difficulty of accounting for these variables when projecting civilian casualties in the event of a resumption of hostilities on the Korean peninsula.[83] Still, as one observer states

> Estimates are that hundreds of thousands of South Koreans would die in the first few hours of combat—from artillery, from rockets, from short range missiles—and if this war would escalate to the nuclear level, then you are looking at tens of millions of casualties and the destruction of the eleventh largest economy in the world.[84]

Pyongyang could also escalate to attacking Japan with ballistic missiles. Japan is densely populated, with heavy concentrations of civilians in cities: the greater Tokyo area alone has a population of about 38 million.[85] The regime might see such an attack as justified by its historic hostility toward Japan based on Japan's annexation of the Korean Peninsula from 1910 to 1945, or it could launch missiles in an attempt to knock out U.S. military assets stationed on the archipelago. A further planning consideration is that North Korea might also strike U.S. bases in Japan (or South Korea) first, possibly with nuclear weapons, to deter military action by U.S./ROK forces. When discussing the possibility of renewed hostilities on the Korean Peninsula, Secretary

---

Rich, "In North Korea, 'Surgical Strike' Could Spin Into 'Worst Kind of Fighting'," *The New York Times*, July 5, 2017, https://www.nytimes.com/2017/07/05/world/asia/north-korea-south-us-nuclear-war.html; Barbara Demick, "Escalating Tensions has Experts Simulating a New Korean War and the Scenarios are Sobering," *The Los Angeles Times*, September 25, 2017, http://www.latimes.com/world/la-fg-korean-war-20170925-story.html; Roger Cavazos, "Mind the Gap Between Rhetoric and Reality," NAPSNet Special Reports, June 26, 2012, https://nautilus.org/napsnet/napsnet-special-reports/mind-the-gap-between-rhetoric-and-reality/; Franz-Stephan Gady, "What Would the Second Korean War Look Like?," *The Diplomat*, April 19, 2017, https://thediplomat.com/2017/04/what-would-the-second-korean-war-look-like/; Robin Wright, "What Would War with North Korea Look Like?," *The New Yorker*, September 6, 2017, https://www.newyorker.com/news/news-desk/what-would-war-with-north-korea-look-like; Rob Givens, "What War With North Korea Would Look Like: 20K NK Dead A Day," Breaking Defense, September 6, 2017, https://breakingdefense.com/2017/09/what-war-with-north-korea-would-look-like-20k-nk-dead-a-day/; R. Jeffrey Smith, "North Korea Deal Urged By State Dept.; Canceling Exercise Linked to Inspections," *Washington Post*, November 15, 1993, p. A15.; Bill Powell, "What War with North Korea Looks Like," Newsweek, April 25, 2017, http://www.newsweek.com/2017/05/05/what-war-north-korea-looks-588861.html; Scott Stossel, "North Korea: The War Game," *The Atlantic Monthly*, June/August 2005 https://www.theatlantic.com/magazine/archive/2005/07/north-korea-the-war-game/304029; Bruce W. Bennett, *Preparing for the Possibility of a North Korean Collapse*, RAND Corporation, 2013 (pp. 69-70); Bruce W. Bennett, Uncertainties in the North Korean Nuclear Threat, RAND Corporation 2010. https://www.rand.org/pubs/documented_briefings/DB589.html; Michael Zagurek, *A Hypothetical Nuclear Attack on Seoul and Tokyo: The Human Cost of War on the Korean Peninsul*a, US-Korea Institute at Johns Hopkins SAIS, October 4, 2017; Reid Kirby, "Sea of Sarin: North Korea's Chemical Deterrent," *Bulletin of the Atomic Scientists*, June 21, 2017; ABC News, "Simulation: War on the Korean Peninsula," January 14, 2017, http://abcnews.go.com/Nightline/story?id=128509&page=1. It should be noted that some of these estimates also factor in DPRK use of chemical, biological and nuclear weapons in addition to conventional artillery. For more on DPRK conventional artillery capabilities, see: GlobalSecurity, "240MM Rocket Launcher M-1985, 240MM Rocket Launcher M-1991,"accessed September 19, 2017, Dave Majumdar, "5 North Korean Weapons South Korea Should Fear," *The National Interest*, January 6, 2016 https://www.globalsecurity.org/military/world/dprk/m-1985-mrl.htm; http://nationalinterest.org/feature/5-north-korean-weapons-south-korea-should-fear-14825; IHS Jane's, "Korea, North - Army," Jane's World Armies, March 27, 2017.

[83] https://lieu.house.gov/sites/lieu.house.gov/files/Response%20to%20TWL-RG%20Letter%20on%20NK.pdf.

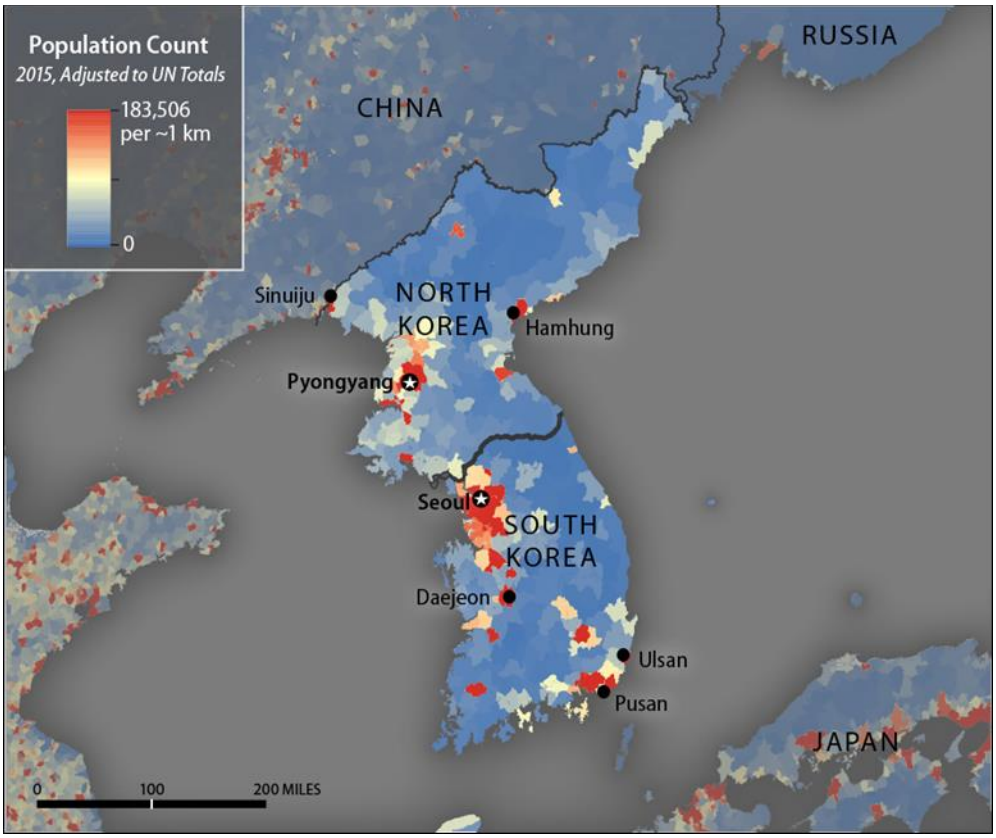
[84] Cohen, Zachary, "The Last Resort: How a US Strike On North Korea Could Play Out," CNN, August 11, 2017.

[85] United Nations (March 12, 2017), "The World's Cities in 2016," http://www.un.org/en/development/desa/population/publications/pdf/urbanization/the_worlds_cities_in_2016_data_booklet.pdf.

of Defense James Mattis stated that although the United States would likely prevail in a military campaign against the DPRK, it "would be probably the worst kind of fighting in most people's lifetimes."[86]

The possibly extraordinary loss of life presents other complicating factors to the prosecution of military operations on the Korean Peninsula. Evacuating surviving American noncombatants (noncombatant evacuation operations, or NEOs), including families of U.S. military stationed there, could place a further strain on U.S. military capabilities in theater, and could complicate the flow of additional reinforcements from the continental United States.[87] Medical facilities could be overwhelmed handling civilian casualties—which, as noted above, might involve treating exposure to chemical if not biological or nuclear weapons—making it more difficult to treat military casualties.

Figure 2. Population Density on the Korean Peninsula



Sources: Graphic created by CRS. Information generated by Hannah Fischer using data from the NASA Socioeconomic Data and Applications Center's Gridded Population of the Word, v4, with a UN-adjusted population count (2015), available at http://sedac.ciesin.columbia.edu/data/set/gpw-v4-population-count-adjusted-to-2015-unwpp-country-totals; Department of State (2015); Esri (2016); DeLorme (2016).

[86] Motoko Rich, "In North Korea, 'Surgical Strike' Could Spin Into 'Worst Kind of Fighting'," The New York Times, July 5, 2017, https://www.nytimes.com/2017/07/05/world/asia/north-korea-south-us-nuclear-war.html.

[87] By comparison, the July 2006 evacuation of 15,000 American citizens from Lebanon, which was a war zone at the time, was one of the largest NEOs in recent history and required significant DOD involvement. NEOs on the Korean Peninsula would likely be exponentially larger and more complex. U.S. Government Accountability Office, *State Department: The July 2006 Evacuation of American Citizens from Lebanon*, GAO-07-893R, June 7, 2007, p. 1, http://www.gao.gov/new.items/d07893r.pdf.

Economic Impacts

The impact of renewed hostilities on the South Korean, regional, and global economies, especially should hostilities escalate into a full-scale war, would likely be substantial. According to one rough estimate by a 2010 RAND study, the costs of a conventional war could amount to 60%-70% of South Korea's annual GDP, which in 2016 was $1.4 trillion. The study estimated that if North Korea detonated a 10 kt nuclear weapon in Seoul, the financial costs would be more than 10% of South Korea's GDP over the ensuing 10 years. These figures should be treated as a rough order of magnitude rather than a precise costing estimate.[88] Given the DPRK's impoverished state, ROK reconstruction costs might also be affected by the costs of rehabilitating the North Korean economy.

China's Reaction

A significant factor likely affecting policymakers' deliberations regarding the use of military force on the Korean Peninsula is the question of whether a military conflict between the DPRK and the U.S./ROK runs the risk of a direct military clash with China, as occurred during the 1950-1953 Korean War. China has declared itself "firmly opposed to war and turmoil on the Peninsula," and "committed to a denuclearized, peaceful and stable Korean Peninsula and a settlement of relevant issues through dialogue and consultation."[89] If the United States were to undertake preventive or preemptive strikes against North Korea, it could risk a major rupture in its relationship with China, which is the United States' top trading partner and holds upwards of $1.15 trillion in U.S. bonds as of June 2017.[90]

In August 2017, the *Global Times*, a nonauthoritative tabloid affiliated with the authoritative Chinese Communist Party publication *The People's Daily*, wrote in a much-discussed editorial that

> China should also make clear that if North Korea launches missiles that threaten U.S. soil first and the U.S. retaliates, China will stay neutral.... If the U.S. and South Korea carry out strikes and try to overthrow the North Korean regime and change the political pattern of the Korean peninsula, China will prevent them from doing so.[91]

China's leadership has been known to use the *Global Times* to test policy proposals and messages while taking advantage of the deniability offered by the paper's nonauthoritative status. Whether this editorial was a test message from China's leadership, or generated independently by the *Global Times*, is unclear.

China increasingly has supported the U.S. and South Korea-led pressure campaign against Pyongyang since Kim Jong-un succeeded his father as DPRK leader in 2011. Yet, many if not most analysts believe that stability on the Korean Peninsula, rather than denuclearization, is the

---

[88] Bruce Bennett, *Uncertainties in the North Korean Nuclear Threat* (Arlington, VA: The RAND Corporation, 2010), p. 57, 69-70.

[89] Position Paper of the PRC for the 72nd Session of the United Nations General Assembly, September 5, 2017, http://www.chinesemission-vienna.at/eng/zgbd/t1490124.htm.

[90] Jethro Mullen, "China is America's Biggest Creditor Once Again," CNN.com, August 16, 2017, http://money.cnn.com/2017/08/16/investing/china-us-debt-treasuries/index.html.

[91] Simon Denver and Amanda Erickson, "Beijing warns Pyongyang: You're on your own if you go after the United States," *The Washington Post*, August 11, 2017, https://www.washingtonpost.com/world/china-warns-north-korea-youre-on-your-own-if-you-go-after-the-us/2017/08/11/a01a4396-7e68-11e7-9026-4a0a64977c92_story.html.

paramount priority of Chinese leaders with respect to the peninsula.[92] Among other developments, the outbreak of war on the peninsula could lead to a massive flow of refugees into northeastern China, where large numbers of ethnic Koreans reside.

For years, the United States and South Korea have sought to hold discussions with China about various contingencies involving military conflict with and/or instability in North Korea, in part to reduce the chances of a China-U.S./ROK military clash. Chinese officials generally have resisted engaging in these discussions. Some observers believe this might be in part to avoid appearing to countenance U.S./ROK military action to denuclearize the peninsula.

Independent of such discussions, Chinese statements could complicate matters for the United States, as the possible articulation of Beijing's red lines could encourage the DPRK to continue taking aggressive action that falls just short of Chinese parameters for its rejection of Pyongyang's activities.

Implications for East Asia

The use of U.S. military force on the Korean Peninsula would likely have far-reaching implications for U.S. alliances and partnerships in the region, for great power politics and rivalries, and for the overall security landscape in the Asia-Pacific, and perhaps more broadly. An outbreak of war on the peninsula could potentially upend two U.S. overarching priorities in East Asia: preserving U.S. interests and maintaining stability in the region. This section examines some of the possible impacts for regional powers and U.S. interests in East Asia.

China

Perhaps the most significant geopolitical question arising from a military conflict on the peninsula would be the effect on the U.S.-China relationship. Much would depend on China's involvement in the conflict, which could vary from hostile (challenging U.S./ROK forces in combat) to cooperative (working, for example, with the operation to secure the DPRK nuclear arsenal in the event of a regime collapse). During or after a military campaign, the Korean/Chinese border could become a geopolitically sensitive area, necessitating additional security forces. Regardless of the outcome, Washington and Beijing would likely be navigating new waters in the bilateral relationship.

If Beijing remained officially "neutral," China may look to establishing its leadership in a changing East Asian order. It could decide to be more assertive in claiming maritime territory, particularly in the South China Sea, if U.S. forces were consumed in Northeast Asia. It might also seek to change the terms of its relationship, peaceably or by force, with Taiwan, either because U.S. attention and resources are deployed elsewhere, or as part of a deal with Washington for its cooperation on the Korean Peninsula.[93] In such a case, U.S. commitments related to Taiwan's

[92] Eleanor Albert, "The China-North Korea Relationship," CFR Backgrounder, Council on Foreign Relations, September 27, 2017, https://www.cfr.org/backgrounder/china-north-korea-relationship.

[93] For more on this discussion of a possible "grand bargain" and its feasibility, see Paul Haenle, Director of the Carnegie-Tsinghua Center notes that when Trump spoke by phone with Taiwan's president and then questioned why the U.S. should be bound by its one China policy, "The insinuation was that Trump was prepared to use the fate of the 23 million people in Taiwan as a bargaining chip to negotiate stronger Chinese assistance on resolving the North Korean nuclear issue or to rebalance the U.S.-China economic relationship." Haenle then explains why doing so would be a mistake. (Paul Haenle, "The Mirage of the Deal: Trump's Grand Bargains with Russia and China," April 13, 2017, https://www.chinausfocus.com/foreign-policy/the-mirage-of-the-deal-trumps-grand-bargains-with-russia-and-china.)

security would likely face existential questions, and the U.S.-China relationship would face a fundamental realignment.

In postconflict reconstruction, China would likely play a major role, given its experience in building infrastructure, proximity to the area, and availability of foreign currency reserves to finance reconstruction. China's establishment in recent years of the Asian Infrastructure Investment Bank and its Belt and Road Initiative[94] to boost economic connectivity within and across continents positions China well to perform such a role, and would heighten its influence.[95] Even if the United States successfully executed a military campaign, China's capabilities would give Beijing considerable leverage in negotiations over the future of the peninsula, likely including discussions over whether a U.S. military presence would remain were the Korean Peninsula to be reunified.

Alliances with South Korea and Japan

For U.S. bilateral alliances—most prominently with South Korea and Japan—U.S. willingness to use military force against North Korea could reinforce the credibility of U.S. commitment to its allies. The credibility of the U.S. mutual defense treaties could also be strengthened, although controversial issues such as the degree of consultation leading up to any strike could create fissures. If a military action were judged by Seoul and/or Tokyo to be Washington's choice alone—and particularly if the conflict resulted in mass casualties of their citizens—the alliances could be deeply shaken, or even abandoned.

Despite years of preparation, the security partnerships could confront the inevitable challenges of operating in a wartime theater: (1) the strength of alliance planning, through decades of exercises and cooperation, would be tested; (2) issues such as operational control of the U.S./ROK forces would face immediate real-time challenges; (3) the logistical complexity of deploying troops and supplies to the theater from bases in Japan could encounter unanticipated obstacles; and (4) the ability of the Japanese Self Defense Forces to offer support for U.S./ROK military operations

---

Dartmouth professor Jennifer Lind, by contrast, writing for CNN, raised the prospect of a grand bargain with China involving Taiwan, but immediately dismissed it. "To get China to act against its own interests, the Trump administration would have to make a deal. What does China want that Washington could give it? But a deal acceptable to both sides probably doesn't exist. The sorts of carrots, capitulations, or concessions that Washington would have to dangle at Beijing would have to be big—really big (perhaps related to the US-Japan alliance, South China Sea, or Taiwan). But, with its many treaty allies and interests in East Asia, Washington would be unwilling to offer that kind of carrot." (Jennifer Lind, "Will Trump's Hardball Tactics Work on China and North Korea," CNN, August 7, 2017, http://www.cnn.com/2017/08/07/opinions/china-north-korea-opinion-lind/index.html.)

George Washington University professor Amitai Etzioni, writing in August 2016, called for a grand bargain with China over North Korea and references Charles Glaser's (Charles L. Glaser, "A U.S.-China Grand Bargain? The Hard Choice Between Military Competition and Accommodation," International Security, Spring 2015, 39:4, pp. 49-90) proposal related to Taiwan. "China has the leverage to compel North Korea to change course, but it has to be incentivized to proceed because the costs to itself from twisting North Korea's arms.... China might agree to help the U.S. in these key matters … if the U.S. would allow China to gain an increase in influence in the countries on its border (influence, not military interventions!) and the U.S. stopped its military buildup on China's borders. Or agree to some other such grand bargain. (My colleague Charlie Glaser has suggested one that involves Taiwan.)" (Amitai Etzioni, "For a Grand Bargain with China," The Diplomat, August 23, 2016, https://thediplomat.com/2016/08/for-a-grand-bargain-with-china/.)

[94] Hong Kong Trade Development Council, "Belt and Road Basics," https://beltandroad.hktdc.com/en/belt-and-road-basics.

[95] CRS In Focus IF10273, *China's "One Belt, One Road"*, by Susan V. Lawrence and Gabriel M. Nelson.

could pose difficult political questions for leaders in Seoul and Tokyo, given the distrust that seems to persist in Japan-South Korea relations.

In the aftermath of a military operation, the alliances could face additional questions about U.S. commitment and obligation to its allies. If the use of U.S. military force successfully erases U.S. homeland vulnerability to a DPRK attack, allies might ask what responsibility the United States would have in assisting South Korea or Japan if military operations have damaged their countries (for more, see "Economic Impacts"). If the regime in Pyongyang falls, the process of reunification—even under the most optimistic conditions—faces daunting challenges given the stark differences between the two populations in terms of education, culture, societal organization, and familiarity with democratic or free market practices.[96] The duration and extent of reconstruction efforts could also become a major area of contention.

The two alliances could also face questions about their durability if the threat from North Korea is removed. The U.S.-ROK alliance in particular is based on defending the South from aggression from the DPRK; without the threat from North Korea, would Seoul feel the need to ally itself closely with the United States, or vice-versa, and would either party feel the need for a continued U.S. military presence? What other factors—especially pressure from Beijing—might sway Korean leaders?

Russia

Russia's future role in the region is uncertain, even moreso in the event of a U.S. intervention. With Moscow thousands of miles away and with a relatively short border with the DPRK, Russia's security concerns are less immediate. However, Russia still maintains massive military capabilities that could be deployed to its Far East and complicate U.S./ROK operations.[97] In addition, some maintain that the Kremlin has a strong interest in asserting itself in any emerging geopolitical order, and may seek to take advantage of a shake-up in the region.[98] Some analysts argue that if the United States and its allies moved more aggressively to alter the situation on the Peninsula, or if the regime in Pyongyang collapsed on its own accord, Moscow and Beijing may find common cause in supporting North Korea. Both Russia and China share a strong desire to prevent a shift in the regional balance that a reunified peninsula under U.S. influence might produce.[99]

[96] Estimates of the costs of a gradual Korean reunification under peacetime conditions vary widely, from conservative estimates of $500 billion to more pessimistic estimates of over $2.5 trillion. For short summaries, see Jennifer Lind, "Korean Unification: Before the Bonanza," *38 North*, February 12, 2015, http://www.38north.org/2015/02/jlind021215/ ; and "What North and South Korea would gain if they were reunified," *The Economist*, May 5, 2016.

[97] For more on Russian military activity along the border with North Korea, see Colin Fredericson, "Russia Sends Troops Near Border With North Korea and China," *The Epoch Times*, September 28, 2017; Andrew Osborne, "Russian Nuclear Bombers Fly near North Korea In Rare Show of Force," *Reuters*, August 24, 2017, https://www.reuters.com/article/us-russia-southkorea-bombers/russian-nuclear-bombers-fly-near-north-korea-in-rare-show-of-force-idUSKCN1B40MP.

[98] Nyshka Chandran, "As China-North Korea ties cool, Russia looks to benefit" *CNBC*, May 8, 2017, https://www.cnbc.com/2017/05/07/as-china-north-korea-ties-cool-russia-looks-to-benefit.html.

[99] CRS Report R44613, *Northeast Asia and Russia's "Turn to the East": Implications for U.S. Interests*, by Emma Chanlett-Avery; Scott Snyder, "Russia and the North Korean Nuclear Challenge," *Asia Unbound Blogpost*, Council on Foreign Relations, September 14, 2017, https://www.cfr.org/blog/russia-and-north-korean-nuclear-challenge.

Possible Military Options

For illustrative purposes only, this section outlines potential options related to the possible use of military capabilities and their implications, along with attendant risks. Not all of these options are mutually exclusive, nor do they represent a complete list of possible options, implications, and risks. The following discussion is based entirely on open-source materials. CRS cannot verify whether any of these potential options are currently being considered by U.S. and ROK leaders. This list is intended to help elucidate the variety of ways that the military can be utilized in furtherance of foreign policy or national security objectives, and the different kinds of risks associated with different policy choices. As such, these notional options are intended to help Congress appreciate the different possible ways force might be employed to accomplish the goal of denuclearizing of the Korean Peninsula, or how the United States might respond to an initiation of hostilities by North Korea. The discussion of these options assumes no Chinese or Russian military intervention. Should either of those parties choose to become meaningfully involved, the strategic calculus would undoubtedly change in unpredictable and likely highly consequential ways.

The design of a military campaign depends on the policy goals that leaders are seeking to accomplish. In August 2017, Secretary of State Tillerson and Secretary of Defense Mattis articulated the U.S. policy objective and parameters for the Korean Peninsula as

> the denuclearization of the Korean Peninsula.... [No] interest in regime change or accelerated reunification of Korea. We do not seek an excuse to garrison U.S. troops north of the Demilitarized Zone... [No] desire to inflict harm on the long-suffering North Korean people.[100]

If the U.S. objective is the denuclearization of the Korean Peninsula, U.S. and ROK leaders can seek to achieve this goal in a variety of ways. These range from increasing U.S. presence and posture on the Korean Peninsula, to communicating to Pyongyang—and possibly Beijing—that continuing along the current policy trajectory of nuclearization is counterproductive, or eliminating DPRK's nuclear and ICBM production capabilities and deployed systems, which would likely require intensive military manpower. The Trump Administration has not publicly detailed how it intends to advance toward the objective of denuclearization or, in particular, how the military might fit into such a campaign.

Preventive vs. Preemptive War

Some of the military options described in this paper would likely require the U.S. to initiate military action in order to have a reasonable prospect of success. Scholars generally describe this kind of action as taking one of two forms: preemptive versus preventive war. *Preemptive* attacks are based on the belief that the adversary is about to attack, and that striking first is better than allowing the enemy to do so. The 1967 Israeli attack against Egypt that began the Six-Day War is a classic example of a preemptive attack. *Preventive* attacks, by contrast, are launched in response to less immediate threats, often motivated by the desire to fight sooner rather than later, generally due to an anticipated shift in the military balance, or acquisition of a key capability, by an adversary. Oft-cited examples of preventive attacks include the 2003 U.S. invasion of Iraq and Israel's 1981 raid on the Osirak nuclear facility. International law tends to hold that preemptive attacks are an acceptable use of force, as are those that are retaliatory in nature. Justifying preventive attacks legally is a more difficult case to make under extant international law.

[100] Jim Mattis and Rex Tillerson, "We're Holding Pyongyang to Account: the U.S. its allies and the world are united in our pursuit of a denuclearized Korean Peninsula," *The Wall Street Journal*, August 13, 2017, https://www.wsj.com/articles/were-holding-pyongyang-to-account-1502660253.

Source: Karl P. Mueller, Jasen J. Castillo, Forrest E. Morgan, Negeen Pegahi and Brian Rosen, *Striking First: Preemptive and Preventive Attack in U.S. National Security Policy* (Arlington, VA: The Rand Corporation, 2006), available at https://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG403.pdf.

Maintain the Military Status Quo

From 2009 to 2016, Seoul and Washington tightly coordinated their respective North Korea policies, following a joint approach—often called "strategic patience"—that emphasized pressuring the regime to return to denuclearization talks through expanded multilateral and unilateral sanctions, attempting to persuade China to apply more pressure on Pyongyang, and boosting the capabilities of the U.S.-South Korea and U.S.-Japanese alliances. Despite the Trump Administration's casting of its "maximum pressure" approach as a departure from the Obama Administration's "strategic patience," numerous elements of their respective policies are similar: expanding U.S. and international sanctions, emphasizing China's ability to pressure North Korea, and coordinating policy with U.S. allies. Key changes from the Obama Administration's approach appear to be that

- the Trump Administration has raised the priority level of the North Korean threat, and
- Administration officials are openly discussing the possibility of a preventive military strike against North Korea.

Maintenance of the military status quo would amount to a de facto continuation of the U.S. policy of inexorably increasing unilateral and multinational pressure through economic and diplomatic means to compel North Korea to change its behavior while simultaneously deterring DPRK aggression on the Korean Peninsula.

Supporters of this course of action could argue that, of all the options available, it would be least likely to escalate the crisis on the Korean Peninsula for the immediate future, and that it provides time for international sanctions, which in their strictest forms began in 2016, to have an effect on North Korea.[101] Other pressures, like increasing inflows of information perceived to be damaging to the regime into the DPRK, would also have more time to have an impact on the civilian population.

Opponents of this course of action might argue that the policy of "strategic patience" failed to compel the DPRK to abandon its nuclear weapons and ICBM capabilities, and that North Korea is unlikely to abandon its WMD capabilities unless the Kim regime concludes that retaining them puts its survival at stake.[102] Opponents might also argue that maintaining the status quo may create time for sanctions to work, but also creates time for North Korea to develop a nuclear-tipped ICBM capable of reaching the U.S. homeland and for North Korea to expand the size of that capability. In addition, some analysts are particularly concerned that South Korea and Japan may reassess their commitment not to build their own nuclear deterrent if North Korea is able to hold the United States at risk. Many analysts fear that Japan and South Korea "going nuclear"

[101] Gerald F. Seib, "Economic crackdown on North Korea Begins, Belatedly," *The Wall Street Journal*, October 16, 2017; William Brown, "Can Sanctions Get a Mulligan?" 38North.org, October 6, 2017, http://www.38north.org/2017/10/wbrown100617/.

[102] Bruce W. Bennett, "Beyond Strategic Patience with North Korea: What Comes Next?" The Ripon Forum, September 8, 2017, https://www.rand.org/blog/2017/09/beyond-strategic-patience-with-north-korea-what-comes.html.

could set off a new arms race in Asia that would raise the risk of accidents or miscalculations in the region.

Enhanced Containment and Deterrence

This option is somewhat more robust than merely maintaining the status quo, with greater emphasis on using U.S. military presence and posture to deter and contain North Korea.[103] Statements by the DPRK indicate that the U.S. presence on the Korean Peninsula has long been unpalatable to Pyongyang. Taking that into account, in addition to diplomatic and economic measures, U.S. leaders might seek to use the U.S. military presence to underscore the costs of DPRK nuclearization through enhancing its forward presence on the Korean Peninsula and in the region (on bases in Japan and Guam, for example). This could be done through prepositioning equipment, enhancing defensive capabilities, building up troop levels, and/or boosting trilateral cooperation among the United States, South Korea, and Japan. Underscoring the costs of DPRK nuclearization, such actions could also enhance deterrence of possible conflict while ensuring that critical systems and units are nearby in the event of hostilities.

Recent dispatches of a U.S. carrier strike group and a Terminal High Altitude Area Defense (THAAD) missile defense deployment to South Korea are examples of this approach. The U.S. military has a wide array of prepositioned equipment, both at shore locations and afloat, that could be sent to South Korea or elsewhere within the region. Deploying additional ground troops to South Korea or elsewhere in the region is also an option. Redeploying U.S. tactical nuclear weapons onto the Korean Peninsula, as has been called for by the Liberty Korea Party, is another such option.[104] Some observers further argue that a combination of enhanced missile defenses, cyber defenses, U.S./ROK military exercises, and monitoring and interdiction of shipments[105] to prevent North Korean WMD proliferation will sufficiently contain the DPRK until peaceful denuclearization can occur.[106]

Skeptics could argue that such moves could be construed by Pyongyang as a prelude to a ground attack on the DPRK. They could also argue that U.S. presence might have little impact on the decisionmaking calculus of the Kim regime, since the current U.S. posture and rhetorical threats of the use of military force previously in the region have failed to dissuade the DPRK from acquiring nuclear capabilities and delivery systems thus far. In addition, there are political and diplomatic challenges to increasing military presence in places like Okinawa or achieving more effective trilateral U.S.-ROK-Japan security cooperation.[107]

---

[103] Harry J. Kazianis, "The Case for Containing North Korea," *The National Interest,* October 15, 2017.

[104] CRS Report R44950, *Redeploying U.S. Nuclear Weapons to South Korea: Background and Implications in Brief*, by Amy F. Woolf and Emma Chanlett-Avery.

[105] Interdiction involves the seizure of prohibited goods detected in international shipping or other forms of transportation. UN Security Council resolutions authorize interdiction of a wide range of prohibited goods and military equipment, including technologies that could be used for ballistic missile, nuclear, chemical or biological weapons programs.

[106] William Tobey, "'No Good Options' on North Korea is a Myth" *Foreign Policy,* July 7, 2017, http://foreignpolicy.com/2017/07/07/no-good-options-on-north-korea-is-a-myth/; Jeffrey A. Bader, "Why Deterring and Containing North Korea is our Least Bad Option," *The Brookings Institution Order from Chaos Blog,* August 8, 2017, https://www.brookings.edu/blog/order-from-chaos/2017/08/08/why-deterring-and-containing-north-korea-is-our-least-bad-option/.

[107] For more, see CRS In Focus IF10672, *U.S. Military Presence on Okinawa and Realignment to Guam,* by Emma Chanlett-Avery and Christopher T. Mann, and CRS Report RL33436, *Japan-U.S. Relations: Issues for Congress*, coordinated by Emma Chanlett-Avery.

Deny DPRK Acquisition of Delivery Systems Capable of Threatening the United States

Pursuing this option may mean deemphasizing, at least for the immediate future, the denuclearization of the Korean Peninsula and instead focusing on mitigating, or even negating, the means of delivery of nuclear devices, in particular nuclear-tipped ICBMs. Without sufficient testing, however, an ICBM's reliability and effectiveness could remain unknown. It may therefore be more difficult to threaten the U.S. homeland credibly with such a capability in the absence of further test launches, which North Korea is likely to pursue in the near term. The United States could attempt to shoot down every medium- and long-range missile and space launch with its ballistic missile defense (BMD) capabilities, such as the Aegis BMD, which is designed to intercept theater-range ballistic missiles, but not ICBMs.

Supporters could argue that a course of action along these lines has several advantages, including the possible disruption of DPRK acquisition of a reliable nuclear ICBM without sending additional forces into the region, which, as discussed above, might arguably be seen as provocative by DPRK and other actors. It could also minimize risk to U.S. troops and their families in the region. Further, all North Korean missile tests are specifically prohibited by U.N. Security Council resolutions, which some proponents use as justification for such a course of action.[108]

Skeptics could argue that keeping one or more Aegis BMD ships in a relatively small geographic area for weeks or months on end could prevent the ships from performing other missions.[109] In addition, two Aegis BMD ships in the 7th Fleet continue to be out of service for months or longer.[110] A major risk is the possibility that an intercept of a DPRK ballistic missile test launch might fail, thereby undermining that deterrent capability in an evolving crisis, with implications perhaps extending beyond the region. Finally, there are risks involved with shooting down a missile that could spread debris over land, air, or ocean areas that have not been cleared through various advance aviation and maritime warnings.

Skeptics could also argue that the Kim regime could still respond militarily, which could escalate the conflict. North Korea would also still possess its nuclear weapons and could therefore proliferate either its nuclear material or weapons to other countries.[111] Such a strategy also would not preclude Pyongyang from continuing to hold U.S. forces and installations—as well as U.S. allies including the ROK and Japan—at risk.

Eliminate ICBM Facilities and Launch Pads

This course of action would mean focusing less on North Korea's voluntary denuclearization and more on eliminating, possibly through limited air strikes, DPRK's long-range ballistic missiles

[108] U.N. Security Council Resolution 2087 demands that the DPRK not proceed with any further launches using ballistic missile technology, and comply with resolutions 1718 (2006) and 1874 (2009) by suspending all activities related to its ballistic missile program and in this context re-establish its preexisting commitments to a moratorium on missile launches.

[109] For more information, on the Navy Aegis Ballistic Missile Defense program, see CRS Report RL33745, *Navy Aegis Ballistic Missile Defense (BMD) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[110] The destroyers that are not currently operational, the *Fitzgerald* and *McCain* (which collided with other ships in July and August 2017, respectively); they are likely to be out of service for at least a year.

[111] Graham Allison, "The North Korean Threat Beyond ICBMs," *The Atlantic Monthly*, August 28, 2017, https://flipboard.com/@flipboard/-the-north-korean-threat-beyond-icbms/f-e7ecb10150%2Ftheatlantic.com.

and associated facilities. Although the majority of the DPRK's missiles have been launched from fixed sites, efforts are reportedly underway in North Korea to develop solid-fuel mobile missiles that can be deployed more rapidly than liquid-fueled missiles before their launch and are harder to detect than missiles fired from known fixed sites. Reportedly, many DPRK ballistic missile development and production facilities are located in hardened sites in North Korea's northeastern mountainous regions near the Chinese border, adding an additional element of risk of Chinese intervention if these facilities are attacked.[112] The DPRK is also believed to operate a single Sinpo-class diesel-electric submarine that may be able to launch a submarine-launched ballistic missile (SLBM); this submarine was used to test the DPRK's KN-11 SLBM.[113] Diesel-electric submarines can be difficult to detect and therefore challenging to target in the event of a limited strike, especially if they are submerged and not moving much, perhaps even for U.S. anti-submarine warfare (ASW) capabilities.[114]

Under this option the United States could attack DPRK nuclear and ICBM facilities through airstrikes and cruise missile attacks. It is also possible that U.S. and ROK Special Operations forces could conduct direct action missions on the ground. These operations are considered to be high-risk—and could incur significant military casualties—compared with attacking targets with aerial assets. Advantages to this course of action may include the disruption of critical components of the DPRK's ICBM infrastructure, while signaling to Pyongyang that continuing its nuclear program is unacceptable, which could possibly bring the Kim regime back to the negotiating table.

Skeptics could argue that this course of action might escalate, rather than deescalate, the conflict. Further, they could maintain that it might degrade, but not eliminate, North Korea's ICBM capabilities, perpetuating the crisis and possibly spurring the DPRK to pursue its ICBM and nuclear weapons capabilities even more aggressively and in a manner less conducive to such disruption.

Eliminate DPRK Nuclear Facilities

This option would be a more expansive military effort than the previous option, as it would involve targeting a greater number of facilities. Possible targets in a limited strike scenario include nuclear production infrastructure, nuclear devices and missile warheads, and associated delivery vehicles.[115] Production infrastructure includes reactor complexes, uranium mines and enrichment facilities, plutonium extraction facilities, related research and development facilities, and explosive test facilities.[116] Similar to the previous option, these targets could be attacked by air assets and cruise missiles. Ground attacks by SOF might also be an option.[117]

Proponents might argue that this option is most likely to eliminate the DPRK's nuclear program to the greatest extent without undertaking regime change.[118] Skeptics, however, could argue that a

[112] Tom Rogan, "High Stakes: The Day the U.S. Strikes North Korea," *The Daily Beast,* April 14, 2017.

[113] This assessment of the Sinpo-class submarines is from STRATFOR Worldview "Derailing a Nuclear Program by Force," January 3, 2017.

[114] Ibid.

[115] Information on these targets is from STRATFOR Worldview "Derailing a Nuclear Program by Force," January 3, 2017.

[116] Ibid.

[117] Mimi Hall & Frank Aum, "From Bad to Worse: Options for the U.S on North Korea" *Nuclear Threat Initiative,* April 11, 2017, http://www.nti.org/analysis/atomic-pulse/bad-worse-options-us-north-korea/.

[118] Ambassador John R. Bolton, "The Military Options for North Korea," *The Wall Street Journal,* August 2, 2017.

distinct possibility exists that the DPRK would escalate the conflict rather than return to denuclearization negotiations. Given limited intelligence and extensive use of hardened underground facilities by North Korea, some experts believe U.S. strikes would not fully eliminate the country's nuclear weapons program, and "at best, they'll set the program back several years."[119] They could also argue that striking nuclear device/weapon sites or facilities could result in widespread radioactive contamination in the event they are damaged or destroyed. Further, if North Korea's nuclear weapons program cannot be destroyed by U.S. strikes, any residual capability including significant conventional military forces—even if nuclear-capable missiles, submarines, or aircraft are eliminated—could be employed against South Korean and U.S. military and civilian targets, or other allied forces.

Skeptics could also argue that there appears to be little information about the numbers, types, and whereabouts of DPRK nuclear devices and missile warheads, and that many of these facilities are believed to be underground in hardened facilities. Accordingly, finding and then eliminating these facilities would likely require highly manpower-intensive operations, and might therefore put considerable numbers of U.S./ROK forces at risk, possibly resulting in significant casualties.

DPRK Regime Change

Although the Tillerson/Mattis op-ed specifically states that the United States has no interest in regime change on the Korean Peninsula,[120] it remains a potential (if unlikely) option, particularly should the Kim regime behave in an aggressive manner toward the United States or its allies.[121] A more comprehensive operation that might make regime survival untenable could involve strikes against not only nuclear infrastructure but command and control facilities, key leaders, artillery and missile units, chemical and biological weapons facilities, airfields, ports, and other targets deemed critical to regime survival.[122] This operation would be tantamount to pursuing full-scale war on the Korean Peninsula, and risk conflict elsewhere in the region.

Advocates of this argument might maintain that the root of the security challenge on the Korean peninsula is the Kim Jong-un regime itself, and that its elimination has the highest degree of likelihood of promoting regional and global security. Skeptics, however, could argue that eliminating the Kim regime involves a high degree of military and political risk, and that preparations for such a large-scale operation could be easily detected, possibly resulting in preemptive strikes by the DPRK against military and civilian targets.[123] If an attack is suspected, they could argue, the DPRK could begin to disperse and hide units, making them more difficult to attack. Such a large-scale attack, opponents of pursuing regime change may say, could result in an

[119] Uri Friedman, "North Korea: The Military Options," *The Atlantic*, May 17, 2017.

[120] Jim Mattis and Rex Tillerson, "We're Holding Pyongyang to Account: the U.S. its allies and the world are united in our pursuit of a denuclearized Korean Peninsula," *The Wall Street Journal*, August 13, 2017, https://www.wsj.com/articles/were-holding-pyongyang-to-account-1502660253.

[121] Regime change is an option that is usually discussed as something to be achieved using nonmilitary means. Still, given President Trump's statements that leaders in Pyongyang "won't be around much longer," and CIA Director Pompeo's statements that the "the most dangerous thing about [the situation on the Korean peninsula] is the character who holds the control over [nuclear weapons] today," for the purposes of this analytic exercise, CRS considers it prudent to explore the military dimensions of such a strategy. See Brooke Seipel, "Trump on NK Nuclear Threats: 'They Won't Be Around Much Longer'" *The Hill*, September 23, 2017; Eli Watkins, "CIA Chief Signals Desire for Regime Change in North Korea," *CNN*, July 21, 2017; Richard N. Haas, "Time to End the North Korean Threat," *The Wall Street Journal*, December 23, 2014.

[122] Information on these possible target sets was derived from STRATFOR Worldview "Derailing a Nuclear Program by Force," January 3, 2017.

[123] Kori Schake, "Pushing for Regime Change in North Korea is a Bad Idea," *Foreign Policy*, December 29, 2014.

escalation to a full-scale war if North Korea believes the operation is intended to decapitate the regime.

A regime change operation, they could also argue, would likely require significant ground force involvement and would require a build-up of U.S. forces before it could be undertaken. In addition to possible participation in ground combat, they could argue, U.S. ground forces could be required for postconflict stabilization operations that could last years. With ongoing U.S. troop commitments in Iraq, Syria, and Afghanistan, such a substantial long-term presence on the Korean Peninsula could have significant ramifications for the availability and readiness of U.S. ground forces or, over the long term, for the required size of the U.S. military.

Withdraw U.S. Forces[124]

Some observers contend that the only reason the DPRK views the United States as a risk is because U.S. troops are stationed in South Korea and Japan.[125] One analyst states

> No one should expect a kinder, gentler Kim to emerge. But his "byungjin" policy of pursuing both nuclear weapons and economic growth faces a severe challenge, especially since sanctions continue to limit the DPRK's development. With the United States far away he would have more reason to listen to China, which long has advised more reforms and fewer nukes. He also might be more amenable to negotiate limits on his missile and nuclear activities, if not give up the capabilities entirely. Since nothing else has worked, an American withdrawal would be a useful change in strategy.[126]

Adherents to this view could maintain that withdrawing U.S. troops in exchange for DPRK denuclearization might eliminate or greatly alleviate any possibility of North Korean military action against the United States, and might even create greater latitude for internal political reform. Withdrawing U.S. Armed Forces from the Korean Peninsula, however, would not necessarily be accompanied by major changes in, let alone the termination of, the U.S.-ROK alliance; U.S. forces positioned elsewhere in the Asia-Pacific might be able to reinforce South Korea in the event of a crisis.

Skeptics of this option could argue that given the history of North Korea not fully complying with agreements related to its nuclear capabilities, it is by no means certain that Pyongyang would follow through on such a deal over the long term. This could leave the United States in a worse position relative to a nuclear DPRK than it maintains at present. If not accompanied by a total verifiable dismantling and disposal of its nuclear and ballistic missile programs, North Korea could continue to threaten or coerce other countries in the region, and could continue its illicit materials trade with rogue states or nonstate actors. Furthermore, any degradation of the U.S. security relationship with South Korea—and a possible perceived abandonment of that long-standing ally—could erode the importance of military presence as a U.S. foreign policy tool elsewhere. The absence of a U.S. presence in South Korea might also encourage the DPRK to renew hostilities in order to unify the Korean Peninsula, a long-stated objective of successive Kim regimes, particularly as such a repositioning of U.S. Armed Forces, however, could make

[124] This option has long been considered as part of the debate on U.S. security policy choices on the Korean peninsula. See, for example, CRS Report 94-311 *Korean Crisis, 1994 Military Geography, Military Balance, Military Options*, by John M. Collins.

[125] For an analysis of the overall strategic logic of U.S. withdrawal from its overseas bases, see John Glaser, "Withdrawing From Overseas Bases: Why a Forward-Deployed Military Posture is Unnecessary, Outdated, and Dangerous," CATO Institute Policy Analysis 816, July 18, 2017.

[126] Bandow, Doug. "Leaving Korea Will Unburden U.S. Troops and Help South Korea Grow Up," *The National Interest*, July 6, 2016.

later reinforcement difficult to execute. In the event that the United States is believed to be either unreliable, not present, or both, South Korea—and possibly Japan—might deem it necessary to develop their own nuclear weapons.

Possible Issues for Congress

The situation on the Korean peninsula may prompt Congress to assess its role in any decisions regarding whether to commit U.S. forces to potential hostilities. The U.S. Constitution divides authority between Congress and the President on matters of war and the use of military force, and Congress may use its war powers to authorize, circumscribe, and in some situations prohibit U.S. forces from participating in hostilities.[127] In assessing whether to exercise authority in this context, Congress might consider, among other things, the following:

- Does the President require prior authorization from Congress before initiating hostilities on the Korean Peninsula? If so, what actions, under what circumstances, ought to be covered by such an authorization?
- The Kim regime may continue to take aggressive action short of directly threatening the United States and its territories while it continues its path to acquire a nuclear ICBM capable of striking the United States. What might be the international legal ramifications for undertaking a preventive or preemptive strike without a U.N. Security Council mandate?
- How are these issues affected, if at all, by the fact that the Korean War was conducted under U.N. authority and that the armistice suspended hostilities but did not formally end the state of war between the DPRK and United Nations forces, which included U.S. forces?
- If the executive branch were to initiate and then sustain hostilities against North Korea—a nuclear-armed country—without congressional authorization, what are the implications for the preservation of Congress's role, relative to that of the executive branch, in the war powers function? How, in turn, might the disposition of the war powers issue in connection with the situation with North Korea affect the broader question of Congress's status as an equal branch of government, including the preservation and use of other congressional powers and prerogatives?
- Does the President require prior authorization from Congress before initiating hostilities on the Korean Peninsula? If so, what actions, under what circumstances, ought to be covered by such an authorization?
- The Kim regime may continue to take aggressive action short of directly threatening the United States and its territories while it continues its path to acquire a nuclear ICBM capable of reaching the United States. What might be the international legal ramifications for undertaking a preventive or preemptive strike without a U.N. Security Council mandate?

[127] For general discussion of the respective war powers of Congress and the President, including avenues by which Congress may constrain or compel the cessation of U.S. participation on hostilities, see generally CRS Report R41989, *Congressional Authority to Limit Military Operations*, by Jennifer K. Elsea, Michael John Garcia, and Thomas J. Nicola.

Resource Implications of Military Operations[128]

Without a more detailed articulation of how the military might be employed to accomplish U.S. objectives on the Korean Peninsula, and a reasonable level of confidence about how the conflict might proceed, it is difficult to assess with any precision the likely fiscal costs of a military campaign, or even just heightened presence. Still, with the possible exception of full withdrawal, any other course of action listed in this report is likely to incur significant additional costs. Factors that might influence the level of expenditure required to conduct operations include, but are not limited to, the following:

- **The number of additional forces,** and associated equipment, deployed to the Korean Peninsula or the Asia-Pacific theater more broadly. In particular, deploying forces and equipment from the continental United States (if required) would likely add to the costs of such an operation due to the logistical requirements of moving troops and materiel across the Pacific.
- **The mission set that U.S. forces are required to prosecute and its associated intensity.** For example, those options leading to an increase of the U.S. posture on or around the Korean Peninsula for deterrence or containment purposes might require upgrading existing facilities or new construction of facilities and installations. By contrast, those options that require the prosecution of combat operations would likely result in significant supplemental and/or overseas contingency operations requests, particularly if U.S. forces are involved in WMD eradication or cleanup missions, or postconflict stabilization operations.
- **The time required to accomplish U.S. objectives.** As demonstrated by operations in Iraq and Afghanistan, the period of anticipated involvement in a contingency is a critical basis for any cost analysis. On one hand, a large stabilizing or occupying ground force to perform stabilization and reconstruction operations, for example, would likely require the expenditure of significant U.S. resources. On the other hand, a limited strike that does not result in conflict escalation would likely be relatively less expensive to the United States.

Postconflict Reconstruction

The aftermath of a full-scale war on the Korean Peninsula could generate significant manpower requirements for U.S. forces. Department of Defense Instruction (DODI) 3000.0 *Stability Operations* specifies that the U.S. military has a critical role to play in "maintaining or reestablishing a safe and secure environment, providing essential government services, emergency infrastructure reconstruction, and humanitarian relief."[129] U.S. forces have also provided logistical and communications support to affected governments in the wake of past humanitarian crises, such as the 2005 Pakistan earthquake and the 2004 Asian tsunami. Applied to a postconflict situation on the Korean Peninsula, the United States military might have to respond to a number of issues in both North and South Korea.

[128] Questions from congressional clients on DOD budget matters may be directed to Lynn Williams, Specialist in U.S. Defense Budget.

[129] Department of Defense, "DOD Instruction 3000.0 Stability Operations," June 29, 2017, http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/300005p.pdf.

North of the Demilitarized Zone,[130] as many as 25 million North Koreans could be affected by a conflict, which could reduce already-scarce food and other essential supplies available to the general public. Further, approximately 80,000 to 120,000 prisoners in prison camps could be released and may need immediate attention. South of the DMZ, the Republic of Korea could need significant assistance recovering and reconstructing key infrastructure, such as fuel and electricity services, contending with casualties, delivering emergency supplies, and much more. Depending on the circumstances, U.S. forces might be asked to assist their ROK counterparts in disarming and demobilizing North Korea's military.[131] Some analysts suggest that the ROK might also have to prepare for and counter sabotage and attempts to foment insurgency by any remaining North Korean SOF.[132] Should the DPRK target other U.S. allies in the region, or U.S. installations in Japan or Guam, U.S. forces could be required to assist with postconflict reconstruction in those locations as well.

An additional factor that could affect both sides of the DMZ would be the use of weapons of mass destruction, including chemical, biological, and nuclear weapons. Beyond the costs involved, decontaminating affected areas would likely require significant manpower and medical support. Given the possible spread of WMD contamination in the atmosphere, assistance with cleanup might be required in other countries as well. In addition to performing cleanup operations, which could require significant manpower, U.S. personnel might be directed to help locate and eliminate DPRK WMD stockpiles north of the DMZ.

Coalition Support

Another factor affecting the possible costs of operations—before, during, and after a conflict—is the willingness and availability of other states, such as Japan or even China, to contribute financial or military resources toward prosecuting a war and stabilizing the Korean Peninsula. Such contributions could bring international legitimacy to U.S./ROK military efforts, especially if some states in the international community advance the view that any U.S. action, intended or inadvertent, was preventive rather than preemptive in nature.

Another dynamic worth considering is the role of Beijing in postconflict stabilization and/or eradicating DPRK weapons of mass destruction programs. Such activities, as mentioned earlier, would likely require significant troop deployments north of the DMZ. Assuming China chooses not to become involved militarily in a conflict on the peninsula, and given that China has indicated its strong preference to maintain a buffer state and existing political structures in North Korea, China may consider deploying forces across its border to stabilize the DPRK. Alternatively, China may also consider *assisting* U.S. military operations. However, it is not known whether China possesses the capability to eliminate WMD facilities, particularly those that might be underground.

These factors, and others, would likely face Congress should the President submit a request for additional monies to support increased military activity on or around the Korean Peninsula. With that in mind, Congress could consider the following:

---

[130] U.S. leaders have indicated that the United States has no interest in permanently stationing its forces in North Korea. Still, one can envision U.S. military support temporarily deployed north—possibly with other international support—to help alleviate human suffering in the aftermath of a conflict. Alternatively, China might take the lead in North Korean postconflict reconstruction.

[131] Sethi, Priya. "If North Korea Collapsed ...," *The National Interest,* July 14, 2014.

[132] Anthony Cordesman, *The Military Balance in the Koreas and Northeast Asia*, (Washington, DC: Center for Strategic and International Studies, 2017), pp. 167-168.

- The potential costs of heightened U.S. operations on the Korean Peninsula, particularly if they lead to full-scale war and significant postconflict operations.
- The need for the United States to reconstitute its forces and capabilities, particularly in the aftermath of a catastrophic conflict.
- The impact of the costs of war and postconflict reconstruction on U.S. deficits and government spending.
- The costs of a conflict on the Korean Peninsula to the global economy.
- The extent to which regional allies, and the international community more broadly, might contribute forces or resources to a military campaign or its aftermath.

Availability of Forces for Other Contingencies

Particularly should hostilities escalate into a full-scale war between the DPRK and the U.S./ROK, the force for conducting such a military campaign and then managing its aftermath could be considerable. Given ongoing U.S. military commitments elsewhere, conducting these conflict and postconflict operations could cause significant strain on U.S. forces. It might be difficult to redirect forces from the Korean theater to other contingencies such as Iraq, Syria, Eastern Europe, or elsewhere, should they arise. Other key inventories, such as missile defenses, might need to be regenerated.

Separate but related is the matter of multiple efforts that would need to be conducted and resourced simultaneously on the Korean Peninsula alone. For example, noncombatant evacuation operations—for upwards of 500,000 U.S. citizens—might need to be conducted alongside logistic operations to flow additional forces into theater. Should these two competing requirements result in a higher demand for naval and other capabilities than supply permits, difficult tradeoffs in terms of global force management might need to be made.

Congress might consider, among others, the following questions:

- What might be the order of priority for U.S. operations in the event of a conflict? What might be the priority of combat operations relative to other critical missions that might tax U.S. military capabilities, such as noncombatant evacuation operations?
- What, if any, impact has the Budget Control Act[133] had on the readiness of U.S. forces to engage in hostilities on the Korean Peninsula?
- How might force requirements for a Korean scenario be balanced against those for other pressing national security concerns in other theaters? Does DOD have sufficient force structure to adequately fulfill responsibilities elsewhere while conducting expanded operations in Korea?
- Is the Department of Defense making appropriate planning and force structure decisions to be able to respond to multiple contingencies if necessary? Does DOD need to adjust its force planning construct?

[133] CRS Report R44039, *The Budget Control Act and the Defense Budget: Frequently Asked Questions*, by Lynn M. Williams.

Prospectus

Few analysts believe that North Korea would launch an unprovoked attack on U.S. territory. Nonetheless, as the crisis on the Korean peninsula continues to evolve, Congress could confront significant questions regarding its role in shaping U.S. policy in the region. Ultimately, Congress may have face two determinations. First, whether or not it believes the United States could or should manage and deter a nuclear-armed North Korea if it becomes capable of attacking the U.S. homeland. Second, whether taking decisive action to prevent the emergence of such a DPRK capability, including the use of military forces, might be necessary. Such determinations potentially carry considerable risks for the United States, its allies, regional stability, and global order.

Particularly given emerging questions about the U.S. role in the world,[134] how the United States chooses to contend with the DPRK nuclear weapons and ICBM programs also raises broader strategic questions with which Congress may grapple:

- How would any particular course of action impact U.S. interests, both regionally and globally?
- How would allies and partners perceive U.S. efforts to accomplish denuclearization, and would that affect their willingness to accept the United States as a global leader?
- What might be the economic, international political, and strategic effects of an erosion of U.S. standing in the global order, if any?
- What impacts would U.S. action regarding North Korea have on alliances around the world, such as those the United States maintains with Australia and NATO?
- What effects would the outbreak of war on the Korean peninsula have upon the U.S. economy?
- What implications would U.S. Korean policy choices have for existing nuclear, chemical, and biological weapons nonproliferation regimes?

[134] See CRS Report R44891, *U.S. Role in the World: Background and Issues for Congress*, by Ronald O'Rourke and Michael Moodie.

Appendix A. **In Detail: The Military Balance on the Korean Peninsula**

Estimating the military balance in the region, and how military forces might be employed during wartime, requires accounting for numerous variables and as such is an inherently imprecise endeavor. As an overall strategic approach, the DPRK has emphasized quantity over quality, as well as asymmetric capabilities including weapons of mass destruction and special operations forces, in building and maintaining its military. The Republic of Korea, by contrast, has emphasized quality over quantity, and maintains a highly skilled, well-trained, and capable conventional force. Not counted in this assessment are the capabilities of China, Russia, or other regional U.S. allies (such as Japan or Australia) who could play a role in a conflict on the Korean Peninsula or its aftermath.

Sources

CRS consulted a number of sources in preparing this analysis of the military balance, including Department of Defense reports, congressional testimony, Ministry of National Defense of the Republic of Korea white papers, and expert commentary from institutions, including the Center for Strategic and International Studies, the International Institute for Strategic Studies, and the Center for Strategic and Budgetary Assessments.

An Overview of DPRK Military Capabilities

Although the Korean People's Army (KPA)—a large, ground force-centric organization comprising ground, air, naval, missile, and SOF—has over 1 million soldiers in its ranks, making it the fourth-largest military in the world, it has some significant deficiencies, particularly with respect to training and aging (if not archaic) equipment.[135] A number of analysts attribute that degradation of capability to food and fuel shortages, economic hardship, and an inability to replace aging equipment, among other factors.[136]

As such, particularly in recent years, the KPA appears to have invested heavily in asymmetric capabilities, both on the high and low end of the capability spectrum. These high and low capabilities are in addition to the considerable DPRK inventory of long-range rockets, artillery, short-range ballistic missiles, and chemical weaponry aimed at targets in the Republic of Korea.[137] U.S. military facilities and the Seoul region, with a population of approximately 23 million, are within range of DPRK conventional artillery situated along the border. Reports indicate that the DPRK has made mobile its missile launchers and at least some of its artillery batteries, arguably making them more difficult to target.[138] Further, reports suggest the DPRK has hardened many of its key facilities through an extensive network of underground tunnels, a further challenge to fully understanding the DPRK's military capabilities.[139]

[135] Cordesman, p. 85.

[136] DNI Clapper, February 10, 2011.

[137] U.S. Congress, Senate Committee on Armed Services, *United States Pacific Command and United States Forces Korea: Testimony by Harry Harris, Commander, United States Pacific Command*, 115th Cong., 1st sess., April 27, 2017.

[138] Department of Defense, *Military and Security Developments Involving the Democratic People's Republic of Korea*, Department of Defense, 2015. p. 11.

[139] Ibid., p. 11.

Conventional Forces[140]

Of North Korea's 24 million people, 4% to 5% serve on active duty, and another 25% to 30% are assigned to a reserve or paramilitary unit and would be subject to wartime mobilization. Conscripts are required to serve for 10 years. With approximately 70% of its ground forces and 50% of its air and naval forces deployed within 100 kilometers of the DMZ, the KPA poses a continuous threat to the ROK and U.S. forces stationed there. The KPA primarily fields legacy equipment, either produced in or based on designs from the Soviet Union and China dating back to the 1950s, 1960s, and 1970s. Although a few of its weapons systems are based on modern technology, the KPA in general has not kept pace with regional military capability developments. The KPA has not acquired new fighter aircraft in decades, relies on older air defense systems, and lacks ballistic missile defense. Its Navy does not train for blue water operations, but the KPA does conduct regular military exercises. Analysts question whether its conventional force training scenarios are sufficiently realistic, especially since the KPA has not been combat tested in over six decades. Taken together, some question whether the conventional component of the KPA would be able to translate its quantitative supremacy into meaningful military advantage.

Component-Specific Capabilities[141]

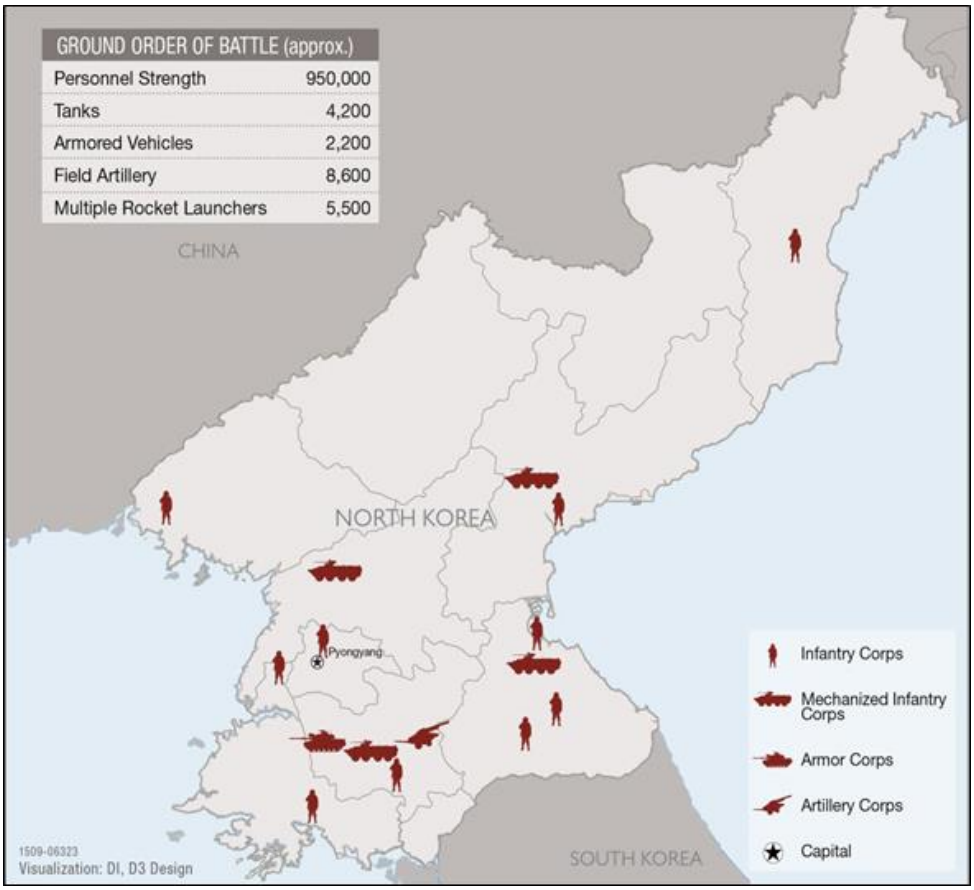
Ground. The KPA's ground forces are predominantly regular and light-infantry units, supported by armor and mechanized units and heavy concentrations of artillery. These forces are forward-deployed, fortified in several thousand underground facilities, and include long-range cannon and rocket artillery forces capable of reaching targets in Seoul from their garrisons.

The ground forces possess numerous light and medium tanks, and many armored personnel carriers. The KPA's large artillery force includes long-range 170 mm guns and 240 mm multiple rocket launchers (MRL), many deployed along the DMZ, posing a constant threat to northern parts of the ROK. In recent years, North Korea has unveiled other new ground force equipment, including tanks, artillery, armored vehicles, and infantry weapons.

[140] Much of the material on DPRK conventional capabilities included in this section was directly drawn from the *Military and Security Developments Involving the Democratic People's Republic of Korea*, Department of Defense, 2015. This information is from 2015—the most recent available to CRS—and underlies CRS's analysis in this appendix.

[141] Ibid., pp. 11-12.

Figure A-1. DPRK Ground Force Locations



Source: *Military and Security Developments Involving the Democratic People's Republic of Korea*, Department of Defense, 2015.

Note: According to DOD, most of North Korea's ground forces are forward-deployed along the DMZ, "fortified in several thousand underground facilities, and include long-range cannon and rocket artillery capable of reaching Seoul from their garrisons" (p. 11).

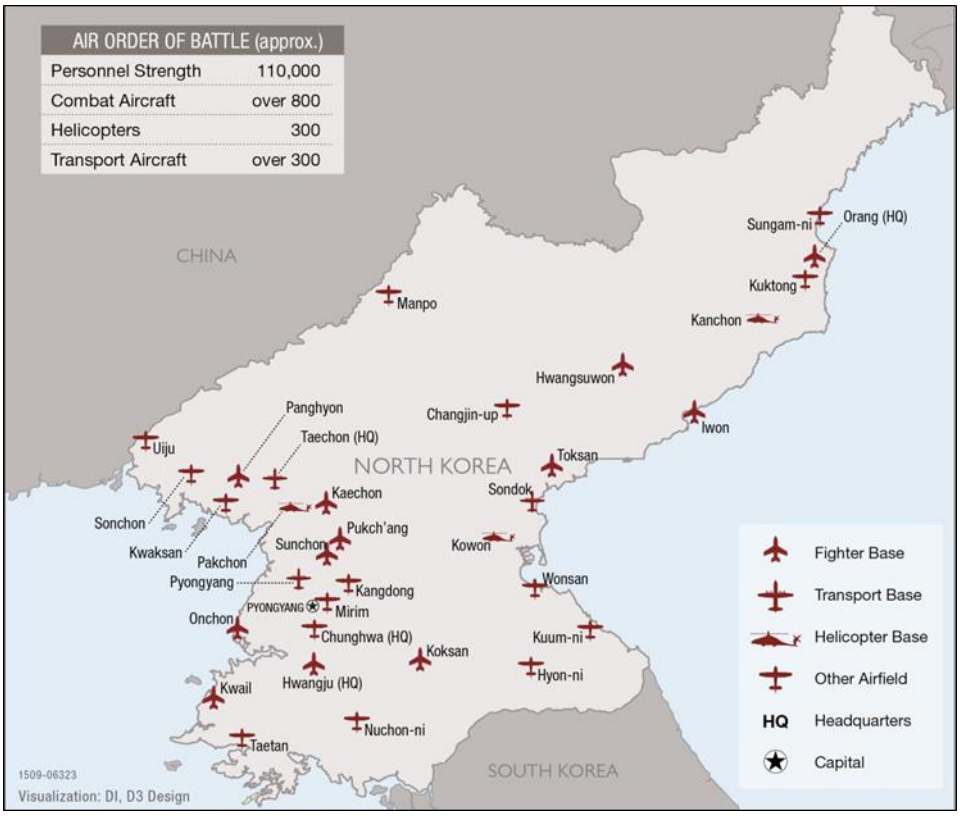
Air and Air Defense. The North Korean Air Force (NKAF), a fleet of more than 1,300 aircraft—mostly legacy Soviet models—is primarily responsible for defending North Korean air space. Its other missions include SOF insertion, transportation and logistics support, reconnaissance, and tactical air support for KPA ground forces. However, because of the technological inferiority of most of its aircraft fleet and rigid air defense command and control structure, much of North Korea's air defense is provided by surface-to-air missiles (SAMs) and anti-aircraft artillery (AAA).

The NKAF's most capable combat aircraft are its MiG-29 FULCRUMs, procured from the Soviet Union in the late 1980s; its MiG-23 FLOGGERs; and its SU-25 ground-attack FROGFOOT aircraft. However, the majority of its aircraft are less capable MiG-15s, MiG-17s, MiG-19s (F-6s), and MiG-21s. The NKAF operates a large fleet of An-2 COLT aircraft, which are 1940s vintage single-engine, 10-passenger biplanes, likely tasked with inserting SOF into the ROK. The Air Force is rounded out with several hundred helicopters, which would be used for troop transport and ground attack, including predominantly Mi-2/HOPLITE and some U.S.-made MD-500 helicopters obtained by circumventing U.S. export controls in 1985.

North Korea possesses a dense, overlapping air defense system of SA-2, SA-3, and SA-5 SAM sites, mobile SA-13 SAMs, mobile and fixed AAA, and numerous man-portable air-defense systems like the SA-7. As the NKAF's aircraft continue to age, it increasingly relies on its ground-based air defenses and on hiding or hardening assets to counter air attacks.

To help make up for these deficiencies in its air forces, the DPRK has acquired drones that are thought to be capable of delivering chemical and biological payloads, as well as performing reconnaissance missions.[142]

Figure A-2. Disposition of DPRK Air Assets



Source: *Military and Security Developments Involving the Democratic People's Republic of Korea*, Department of Defense, 2015.

Naval.[143] The North Korean Navy (NKN) is the smallest of the KPA's three main services. This coastal force is composed primarily of numerous, though aging, small patrol craft that carry a variety of anti-ship cruise missiles, torpedoes, and guns. The NKN maintains one of the world's numerically largest submarine forces, with around 70 attack-, coastal-, and midget-type submarines. In addition, the NKN operates a large fleet of air-cushioned hovercraft and conventional landing craft to support amphibious operations and SOF insertion. The force is

[142] Ankit Panda, "North Korea's Drones: Threat or No Threat?" The Diplomat, April 5, 2014 https://thediplomat.com/2014/04/north-koreas-drones-threat-or-no-threat/; Yonhap News Agency, "N.K. estimated to have some 1,000 drones: report," March 29, 2017, http://english.yonhapnews.co.kr/northkorea/2017/03/29/73/0401000000AEN20170329002100315F.html.

[143] *Military and Security Developments Involving the Democratic People's Republic of Korea*, Department of Defense, 2015, p. 12.

divided into East and West Coast Fleets, which each operate a variety of patrol craft, guided-missile patrol boats, submarines, and landing craft.

Figure A-3. Disposition of DPRK Naval Assets

Source: *Military and Security Developments Involving the Democratic People's Republic of Korea*, Department of Defense, 2015.

North Korean Nuclear Capabilities

North Korea has recently made considerable strides toward acquiring strategic nuclear capabilities. North Korea has tested six nuclear devices—one in 2006, one in 2009, one in 2013, two in 2016, and one in 2017—and has declared itself to be a nuclear-armed state. Since the Six-Party nuclear talks broke down in 2009, North Korea has restarted its plutonium-production reactor and has openly built a uranium enrichment plant (and may have clandestine enrichment facilities).[144] Some nongovernmental experts estimate that North Korea could have potentially produced enough material for 13-21 nuclear weapons, and could now produce enough nuclear material for an additional seven warheads per year.[145] A *Washington Post* report from August 2017 quotes one component of the intelligence community, the U.S. Defense Intelligence Agency (DIA), as assessing that North Korea had achieved this step. The same report said the DIA had asserted that North Korea may have a stockpile of up to 60 nuclear warheads, much higher than

[144] CRS In Focus IF10472, *North Korea's Nuclear and Ballistic Missile Programs*, by Steven A. Hildreth and Mary Beth D. Nikitin. The Six-Party Talks involved the United States, North Korea, China, South Korea, Japan, and Russia.

[145] David Albright, "Future Directions in the DPRK'S Nuclear Weapons Program: Three Scenarios for 2020," February 2015, http://38north.org/2015/02/dalbright022615/.

most open-source estimates.[146] North Korea has also threatened to use its nuclear weapons in an electromagnetic pulse (EMP) attack, which involves detonating a nuclear warhead above the earth's atmosphere, potentially disrupting and damaging critical infrastructure.[147]

Ballistic Missile Technology

Over the past 20 years, North Korea attempted six satellite launches using long-range ballistic missile technology. There is reported evidence that each held a small satellite payload. The first four launches failed, but the latest two (in 2012 and 2016) placed satellites in orbit.[148] The U.S. intelligence community has assessed that DPRK space launch capabilities share many of the same technologies that could be used in an ICBM program.

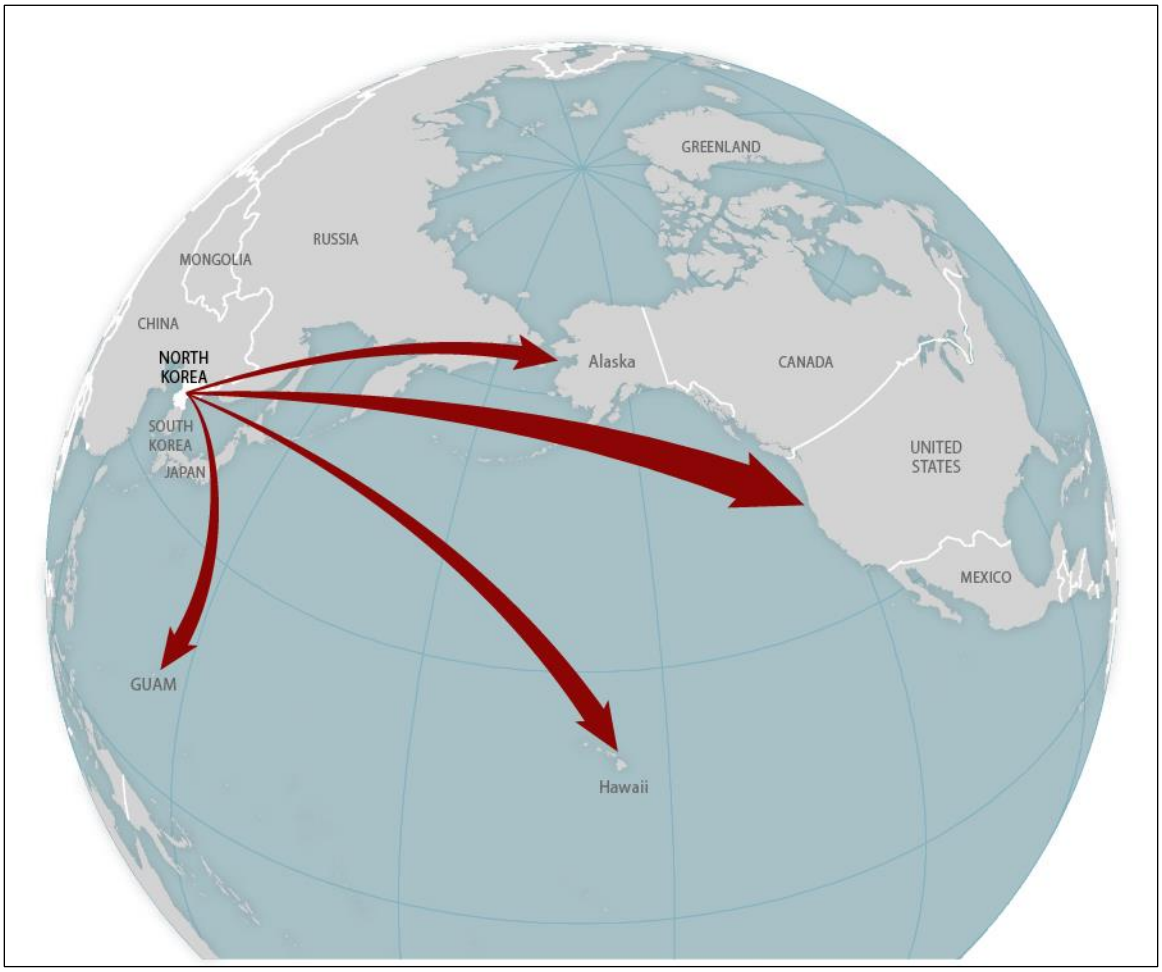
In addition, Pyongyang tested both medium-range (estimated 3,000-kilometer range) "Musudan" missiles and a submarine-launched ballistic missile in 2016. Improvements in medium-range missiles suggest that North Korea could credibly threaten large U.S. bases and population centers in Japan and South Korea. See **Figure 2** and **Appendix C** for the population centers and military bases that could be within range of these missiles in Korea, Japan, and Guam.

[146] Ellen Nakashima, Anna Fifield and Joby Warrick, "North Korea could cross ICBM threshold next year, U.S. officials warn in new assessment," *The Washington Post,* July 25, 2017, https://web.archive.org/web/20170908131324/https://www.washingtonpost.com/world/national-security/north-korea-could-cross-icbm-threshold-next-year-us-officials-warn-in-new-assessment/2017/07/25/4107dc4a-70af-11e7-8f39-eeb7d3a2d304_story.html?utm_term=.cb73110bcbed. As a final step, North Korea would need to develop the capability for its ICBMs to survive reentry into the atmosphere at intercontinental ranges, something that it has not yet demonstrated. See https://www.washingtonpost.com/world/national-security/north-korea-now-making-missile-ready-nuclear-weapons-us-analysts-say/2017/08/08/e14b882a-7b6b-11e7-9d08-b79f191668ed_story.html?hpid=hp_hp-top-table-main_nkorea-1212p%3Ahomepage%2Fstory&utm_term=.331174b000b0.

[147] Tom Porter, "Could a North Korean EMP attack on the U.S. really cause mass starvation and societal collapse?" *Newsweek,* October 25, 2017, http://www.newsweek.com/could-north-korean-emp-attack-could-cause-mass-starvation-and-societal-691736; Jack Liu, "A North Korean Nuclear EMP Attack? … Unlikely," *38North,* May 5, 2017, http://www.38north.org/2017/05/jliu050517/; Peter V. Pry, "North Korea Nuclear EMP Attack: An Existential Threat," Testimony to the U.S. House of Representatives Committee on Homeland Security, Subcommittee on Oversight and Management Efficiency Hearing on "Empty Threat or Serious Danger: Assessing North Korea's Risk to the Homeland," October 12, 2017.

[148] Director of National Intelligence, "Worldwide Threat Assessment 2017," p. 10, https://www.dni.gov/files/documents/Newsroom/Testimonies/SSCI%20Unclassified%20SFR%20-%20Final.pdf.

Figure A-4. Range Estimates Based on North Korea's July 2017 Missile Tests



Sources: Graphic created by CRS. Information generated by Hannah Fischer and Ylli Kellici using data and input from CRS analysis (2017); the Department of State (2015); Esri (2016); DeLorme (2016).

In July 2017, North Korea test-launched two long-range ballistic missiles that some observers characterized as having intercontinental range, achieving a capability milestone years earlier than predicted.[149] The liquid-fueled missiles flew in a lofted or very high trajectory, demonstrating a theoretical range that could include Hawaii, Alaska, Guam, or even the continental United States.[150] **Figure A-4** illustrates the areas within potential reach of these missile tests had they not been lofted, according to a range of observers. It is not known what payload was used, but the actual range of those missiles using a nuclear warhead would likely be significantly shorter (because of the weight of an actual warhead). Regardless, almost all observers agree that North Korea appears intent on deploying an operational nuclear ICBM capability. Few analysts believe that North Korea would launch an unprovoked attack on U.S. territory.

Some, such as Russia, argue that this test was more accurately a medium-range ballistic missile with potential range of 3,500-5,500 km. Other technical experts have pointed out a fairly clear

[149] Defense Department, "U.S. Condemns North Korean Missile Launch," July 4, 2017.

[150] Terri Moon Cronk, "U.S., South Korea Conduct Exercise Following North Korean Missile Launch," *DoD News*, July 5, 2017.

Soviet/Russian technology heritage in the major missile components used in these tests, as well as smaller components that observers believe were acquired illicitly through a range of Chinese entities. Such cooperation among these countries on ballistic missile development goes back decades.[151]

Unconventional Warfare Capabilities

Pyongyang has also invested in its special operations forces, which some believe could be employed against U.S./ROK targets—particularly to conduct sabotage, launch terrorist attacks, and wage unconventional warfare—in the event of an outbreak of hostilities on the Korean Peninsula. North Korean SOF are considered among the most highly trained, well-equipped, best-fed, and highly motivated forces in the KPA.[152] As North Korea's conventional capabilities decline relative to the ROK and United States, North Korea appears increasingly to regard SOF capabilities as essential for asymmetric coercion. Estimates vary on the size of DPRK SOF, although U.S. and ROK intelligence and military sources maintain that its end strength may be as high as 200,000, including 140,000 light infantry and 60,000 in the 11th Storm Corps. The latter is primarily focused on training and undertaking special and unconventional warfare.[153]

According to the Department of Defense

> SOF units dispersed across North Korea appear designed for rapid offensive operations, internal defense against foreign attacks, or limited attacks against vulnerable targets in the ROK as part of a coercive diplomacy effort. They operate in specialized units, including reconnaissance, airborne and seaborne insertion, commandos, and other specialties. All emphasize speed of movement and surprise attack to accomplish their missions. SOF may be airlifted by AN-2 COLT aircraft or helicopters (and possibly Civil Air Administration transports), moved by maritime insertion platforms, or travel on foot over land or via suspected underground, cross-DMZ tunnels to attack high-value targets like command and control nodes or air bases in the ROK.[154]

Some also believe that SOF sleeper agents have been planted in South Korea.[155]

Cyber Capabilities[156]

Among governments that pose cyber threats to the United States, some analysts consider the North Korean threat to be exceeded only by those posed by China, Russia, and Iran.[157] North Korea appears to be engaging in increasingly hostile cyber activities, including theft, website vandalism, and denial of service attacks. Whether North Korea has the capability to go beyond

---

[151] Joby Warrick, "The secret to Kim's success? Some experts see Russian echoes in North Korea's missile advances," *The Washington Post*, July 8, 2017; Joby Warrick, "Kim Jong Un's rockets are getting an important boost—from China," *The Washington Post*, April 13, 2017.

[152] *Military and Security Developments Involving the Democratic People's Republic of Korea*, Department of Defense, 2015, p. 12.

[153] Cordesman, pp. 165-166.

[154] *Military and Security Developments Involving the Democratic People's Republic of Korea*, Department of Defense, 2015, p. 12.

[155] For more information on the possible employment of DPRK SOF, see Blaine Harden, "North Korea Massively Increases Its Special Forces," *The Washington Post*, October 9, 2009, http://www.washingtonpost.com/wp-dyn/content/article/2009/10/08/AR2009100804018.html.

[156] For more information, see CRS Report R44912, *North Korean Cyber Capabilities: In Brief*, by Emma Chanlett-Avery et al.

[157] Will Edwards, "North Korea as a Cyber Threat," *The Cypher Brief*, July 1, 2016.

mere nuisance to more destructive cyberattacks on critical infrastructure is a matter of debate. Some reports suggest that North Korea has a sophisticated and burgeoning offensive cyber capability. Others assess North Korea as lacking the infrastructure and native technical skill necessary to undertake destructive cyberattacks. Still others note that some of the attacks ascribed to North Korea appear relatively unsophisticated and enabled by the targets' poor network security.

In 2014, General Curtis M. Scaparrotti, then-Commander, United Nations Command and the Republic of Korea Combined Forces, offered the following assessment:

> North Korea employs computer hackers capable of conducting open-source intelligence collection, cyber-espionage, and disruptive cyber-attacks. Several attacks on South Korea's banking institutions over the past few years have been attributed to North Korea. Cyber warfare is an important asymmetric dimension of conflict that North Korea will probably continue to emphasize—in part because of its deniability and low relative costs.[158]

Relying on Korean and English resources, the Center for Strategic and International Studies concluded in a 2015 report:

> Left unchecked and barring any unpredictable power shift, North Korea is likely to continue to place strategic value in its cyber capabilities. Future North Korean cyberattacks are likely to fall along a spectrum, with one end being continued low intensity attacks and the other end characterized by high intensity attacks from an emboldened North Korea. Concurrently, the DPRK will likely deepen the integration of its cyber elements into its conventional military forces.[159]

Some observers suggest that, because there is little visibility into North Korea's activities, the possible threats from North Korean cyber activities are often inflated. An assessment released by the Korea Economic Institute found that the international community's "fears of the unknown increase the risk of threat inflation dramatically."[160] These analysts contend that although North Korea may have the capability to undertake global cyber nuisance or theft-motivated activities, the nation lacks the ability to undertake operations that are "complex or as devastating as the Stuxnet attack, a computer virus that disrupted Iran's nuclear program."[161]

In November 2014, Sony Pictures Entertainment experienced a cyberattack that disabled its information technology systems, destroyed data, and accessed internal emails and other documents that were then leaked to the public.[162] Hackers then sent emails, threatening "9/11-style" terrorist attacks on theaters scheduled to show the film *The Interview*.[163] The Federal

---

[158] U.S. Congress, House Committee on Armed Services, Statement of General Curtis M. Scaparrotti, Commander, United Nations Command; Commander, United States -Republic of Korea Combined Forces Command, United States Forces Korea, 113th Cong., 2nd sess., April 2, 2014, http://docs.house.gov/meetings/AS/AS00/20140402/101985/HHRG-113-AS00-Wstate-ScaparrottiUSAC-20140402.pdf.

[159] James Lewis, Victor Cha, and Jun, LaFoy, Sohn, "North Korea's Cyber Operations: Strategy and Responses," *Center for Strategic and International Studies, Office of the Korea Chair*, November 23, 2015, https://www.csis.org/analysis/executive-summary-north-koreas-cyber-operations-strategy-and-responses.

[160] Dr. Alexandre Mansourov, "North Korea's Cyber Warfare and Challenges for the U.S.-ROK Alliance," *Korea Economic Institute of America -ACADEMIC PAPER SERIES*, December 2, 2014, http://keia.org/sites/default/files/publications/kei_aps_mansourov_final.pdf.

[161] Will Edwards, "North Korea as a Cyber Threat," *The Cipher Brief*, July 1, 2016, https://www.thecipherbrief.com/article/asia/north-korea-cyber-threat-1092.

[162] Ibid.

[163] "U.S. Weighs Options to Respond to Sony Hack, Homeland Security Chief Says," *Wall Street Journal*, December 18, 2014.

Bureau of Investigation (FBI) publicly attributed[164] the 2014 hacking of Sony Pictures Entertainment to the North Korean government. Starting in 2009, North Korea is alleged to have conducted multiple cyberattacks on South Korean financial institutions and media outlets. The Department of Homeland Security issued a bulletin in June 2017 suggesting that North Korea is targeting the media, aerospace, financial, and critical infrastructure sectors in the United States.[165]

An Overview of ROK Military Capabilities

The Republic of Korea has steadily improved its conventional forces, increasing their lethality through improvements in command, control and communications, advanced technology, and by incorporating lessons from its experience in Operation Iraqi Freedom.[166] Still, the size of the ROK active duty military is approximately half that of the DPRK's, leading some analysts to conclude that South Korea may not be able to mass enough force to meet its needs. To date the ROK has decided not to acquire its own nuclear weapons, due to its reliance on U.S. security assurances, including in particular the American extended deterrent nuclear umbrella. There have been recent calls to redeploy U.S. tactical nuclear weapons to South Korea.[167]

Component-Specific Capabilities

Ground Forces. The ROK Army (ROKA) has primary responsibility for defending the Republic of Korea, and it has an end strength of approximately 490,000, and an active reserve force of 600,000.[168] ROKA consists of the Army Headquarters; two Field Army Commands, tasked with defense of their respective areas of responsibility, which includes terrain up to the South Korean border of the Demilitarized Zone; the Second Operations Command, with the role of maintaining rear-area stability and war-sustaining capabilities; the Capital Defense Command, which is responsible for the protection of key facilities and infrastructure in Seoul; and other commands, which are responsible for Special Operations, aviation operations, personnel and logistics support, and education and training.[169]

Naval Forces. The ROK Navy, which is organized under the Navy headquarters, has an approximate end strength of 70,000, including 29,000 in its Marine Corps. It comprises the Naval Operations Command, which has command authority over naval operations overall, including anti-surface operations, anti-submarine operations, mine and counter-mine operations, and amphibious operations. The ROK's three Fleet Commands, which are subordinate to the Naval Operations Command, conduct defensive missions by deploying surface combatants such as destroyers, frigates, patrol vessels, and patrol craft. Submarine Force Command, also subordinate to Naval Operations Command, carries out operations involving submarine use. ROK's Marine Corps Headquarters, which operates ROK's Quick Task Forces and Quick Reaction Forces, is in charge of amphibious operations and has a mission set that includes defense operations in assigned areas, including coastal islands. Finally, the Northwest Islands Defense Command is

[164] "FBI Head Details Evidence That North Korea Was Behind Sony Hack," *Los Angeles Times*, January 7, 2015.

[165] https://www.us-cert.gov/ncas/alerts/TA17-164A.

[166] Cordesman, p. 155.

[167] CRS Report R44950, *Redeploying U.S. Nuclear Weapons to South Korea: Background and Implications in Brief*, by Amy F. Woolf and Emma Chanlett-Avery

[168] Active end strength numbers derived from Ministry of National Defense of the Republic of Korea, Defense White Paper 2016, p. 49. Reserves derived from IHS Jane's, "Korea, South–Army," Jane's World Armies, September 7, 2017.

[169] Ministry of National Defense of the Republic of Korea, *Defense White Paper 2016*, p. 49.

responsible for the defense of the northwestern islands and provides logistics and training support to the Navy.

Air Forces. Organized under the Headquarters, the ROK Air Force comprises approximately 65,000 personnel and has three primary commands: Operations Command, Logistics Command, and Evaluation and Training Command. Air Force Operations Command has command authority over all air operations, including counter-air, air interdiction, and close-air support operations, and has four subordinate commands: (1) Air Combat Command; (2) Air Mobility and Reconnaissance Command; (3) Air Defense Missile Command, which carries out air defense missions against airborne attacks by enemy aircraft and missile attacks; and (4) Air Defense Control Command, which is responsible for air control in the Korean Peninsula theater, air surveillance, aircraft identification, and air support.

ROK Missile Defenses

Since 2010, the United States has engaged its allies in the Asia-Pacific, specifically Japan, South Korea, and Australia, to develop and implement an integrated regional BMD capability to deter and counter North Korea ballistic missile threats.[170] Over the past 15 years, the United States has learned how its own BMD capabilities are significantly enhanced by integrating them into a much larger global BMD System (BMDS). The U.S. contribution to NATO's territorial defense against possible ballistic missile threats from Iran, for example, has led to a phased capability to deploy THAAD radar, sea-based Aegis BMD, and Aegis Ashore capabilities in Europe, and to fully integrate those with the current and prospective range of NATO European BMD capabilities. The concerted effort to develop a similar capability in Northeast Asia has not been as successful, primarily because of outstanding historical and political issues between South Korea and Japan. The inability to fully integrate regional BMD systems among U.S., Korean, and Japanese BMD systems results in an unrealized potential that could prove significant if conflict erupts.

Aegis Ballistic Missile Defense (BMD). The South Korean Navy has three Aegis destroyers that are similar to U.S. Navy Arleigh Burke (DDG-51)-class Aegis destroyers. The ships, which entered service in 2008, 2010, and 2012, are known as the Sejon Daewang (KDX-3) class. Three additional KDX-3 ships are planned and may enter service in 2023-2027, according to the 2016-2017 edition of *IHS Jane's Fighting Ships*. The three additional ships, according to this source, may be built with a BMD-capable version of the Aegis system. The three existing ships are equipped with a version of the Aegis system that is not BMD capable. The Aegis system on the three existing ships can be modified to become BMD sensor-capable, and South Korea reportedly has plans to do this, but that modification is to be done in the future.[171] The three existing Aegis destroyers have participated in U.S.-South Korean-Japanese military exercises. Given their current lack of BMD capability, their potential contribution to any near-term BMD mission would be an indirect one—they could help defend U.S. and Japanese BMD-capable ships from North Korean submarines, surface ships, aircraft, and anti-ship cruise missiles.

Terminal High Altitude Air Defense (THAAD). South Korea agreed to host a U.S. THAAD battery in 2016. That battery was deployed earlier this year in south central South Korea with four of the eight intended launchers. Until recently, the remaining four launchers had been held up due to outstanding political and environmental challenges. The operational status of the battery is

[170] See CRS Report R43116, *Ballistic Missile Defense in the Asia-Pacific Region: Cooperation and Opposition*.

[171] CRS Report RL33745, *Navy Aegis Ballistic Missile Defense (BMD) Program: Background and Issues for Congress*, by Ronald O'Rourke, p. 58.

classified, but observers believe the battery is already fully operational, with its eight launchers and its 48 interceptors.

THAAD is widely considered to be highly effective against short-range ballistic missiles (SRBM) and medium-range ballistic missile (MRBM) threats based on its operational test performance over the past many years.[172] THAAD has not been used in conflict, so its wartime performance is untested. THAAD is designed to protect larger areas, such as parts of South Korea including Camp Humphreys and other military assets, for example. It is unclear, however, whether THAAD could counter ballistic missiles targeted against Seoul, because that city lies just outside the unclassified operational effectiveness range from where this THAAD battery is located.

Patriot. South Korea currently has a Patriot Advanced Capability-2 missile defense system at the Osan military base in Seoul. South Korea is in the process of receiving upgrades to Patriot Advanced Capability-3, which then-U.S. Army Secretary Eric Fanning said in 2016 would be completed by 2018. The Patriot PAC-2 has demonstrated limited wartime capability against SRBM threats, and while the PAC-3 system has performed well in operational tests according to DOD, it has not been used in conflict.[173]

South Korea has been developing an indigenous BMD capability against SRBMs called Korean Air and Missile Defense (KAMD). In 2016, Korea Defense Minister Han Min-Koo stated that the PAC-3 capability would be deployed in 2020 and 2022 as a part of the KAMD system. In April 2017, the Ministry of National Defense released the 2018-2022 Mid-Term National Defense Plan. This plan includes KAMD as part of a "three-axis system," which also includes a "kill chain" for a preemptive strike in response to signs of an imminent North Korean missile attack and a Korean Massive Punishment and Retaliation (KMPR) system for retaliating directly against the North Korean leadership in the event of a nuclear attack. As a part of efforts to move up development of these capabilities, the South Korean military is working to hasten performance improvements in its medium-range surface-to-air missile (M-SAM) system. These capabilities are currently not available in the near term.

Cyber Capabilities

The Republic of Korea is one of the world's most wired countries, making it potentially vulnerable to cyberattacks. In contrast, North Korea has one of the smallest Internet presences in the world and lacks the same widespread dependence on networked technologies. The Republic of Korea has been seeking to develop its own offensive cyber capabilities since 2014, moving from a doctrine of more defensive cyber measures. According to Yonhap News Agency, an anonymous military source stated that "[To date] the military had focused on monitoring-based operations to deter enemies' hacking attempts, but now we will proactively detect hosts of such attacks online and launch preemptive strikes to prevent them from victimizing us from the outset."[174] The Defense Ministry also announced plans to bring its total cyber force to approximately 1,000 troops, operating under the South Korean Ministry of Defense's Cyber Command created in 2010. In 2016, it was reported that the South Korean Cyber Command was hacked by North Korea.

---

[172] CRS In Focus IF10541, *Defense Primer: Ballistic Missile Defense*, by Steven A. Hildreth Office the Secretary of Defense, Office of the Director, Operational Test and Evaluation "FY 16 Ballistic Missile Defense Systems: Terminal High-Altitude Area Defense," http://www.dote.osd.mil/pub/reports/FY2016/pdf/bmds/2016thaad.pdf.

[173] Office the Secretary of Defense, Office of the Director, Operational Test and Evaluation, "FY16 Army Programs: Patriot Advanced Capability-3 (PAC-3)," http://www.dote.osd.mil/pub/reports/FY2016/pdf/army/2016patriot.pdf.

[174] Yonhap News, "S. Korea to get proactive in cyber warfare," October 8, 2014, http://english.yonhapnews.co.kr/full/2014/10/08/82/1200000000AEN20141008011400315F.html.

In April 2015, then-U.S. Secretary of Defense Ashton Carter and Korean Defense Minister Han held a press conference in which they noted the achievements of close ROK-U.S. coordination on the cyberattacks on Sony, and the intent to reinforce this cooperation in response to North Korean and international cyber threats. U.S.-ROK cyber defense coordination predates the Sony attacks (discussed above). In 2014, a new facility for cybersecurity was created to allow U.S. Forces Korea to coordinate efforts with other U.S. commands as well as Republic of Korea civilian government and military forces. The U.S. Forces Korea Joint Cyber Center serves as the focal point for increasing international cooperation between U.S. and Korean forces in their defensive measures against increasing cyber aggression from North Korea. Also in 2014, Korean and U.S. forces held the first bilateral cyber tabletop exercise.

U.S. Support to the Republic of Korea

There are 28,500 U.S. troops and their families currently stationed in the Republic of Korea, primarily playing a deterrent role by acting as a tripwire in case of DPRK hostilities south of the DMZ.[175] U.S. forces also train with their ROK partners to better prepare them to participate in coalition operations in other theaters. The United States reportedly also provides the ROK with several key enablers, including military intelligence.[176] Since 2004, the U.S. Air Force has increased its presence in ROK through the regular rotation into South Korea of advanced strike aircraft. These rotations do not constitute a permanent presence, but the aircraft often remain in South Korea for weeks and sometimes months for training. Due to these conventional capabilities, as well as the U.S.-ROK Mutual Defense Treaty, the United States has extended its deterrent umbrella to South Korea, including nuclear deterrence.

Under current U.S./ROK operational plans (OPLANS), the United States plans to deploy units to reinforce the ROK in the event of military hostilities. In the event of wartime and depending on those circumstances, up to 690,000 additional U.S. forces could be called upon to reinforce U.S./ROK positions, along with 160 naval vessels and 2,000 aircraft.[177] These units and their estimated arrival date in theater are listed in the Time-Phased Force Deployment List (TPFDL). These units include both Active and Reserve Component units from all services and arrival dates can range from days to weeks or months, depending on (1) the operational need for the unit, (2) the readiness status of the unit, and (3) the availability of strategic air and sealift. Furthermore, according to reports, since 2015 the U.S. and ROK militaries have prepared and exercised new war plans to strike North Korean WMD facilities and top leadership in an emergency situation.[56] According to the Ministry of Defense of the Republic of Korea,

> augmentation forces are to be increased progressively based on how the crisis situation develops, in two different modes: namely, the Flexible Deterrence Options (FDO) and the Time Phased Force Deployment Data (TPFDD). The FDO are enacted during the initial stages of a conflict when the level of crisis rises in the Korean peninsula, to deter war and mitigate the crisis situation by deploying designated forces. If the attempt to deter war fails, combat and support forces, as pre-planned under the TPFDD, will be deployed to execute the ROK-US combined operations plan.[178]

---

[175] Jim Garamone, "Dunford: U.S.-South Korean Alliance Ready to Defend Against North Korean Threat," *DOD News*, August 14, 2017, https://www.defense.gov/News/Article/Article/1277384/.

[176] https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/130513_KMB_volume2.pdf, p. xiv.

[177] Ministry of National Defense of the Republic of Korea, *Defense White Paper 2016*, p. 53. Available at http://www.mnd.go/kr/user/mnd/upload/pblictn/PBLICTNEBOOK_201705180311469090.pdf., p. 53.

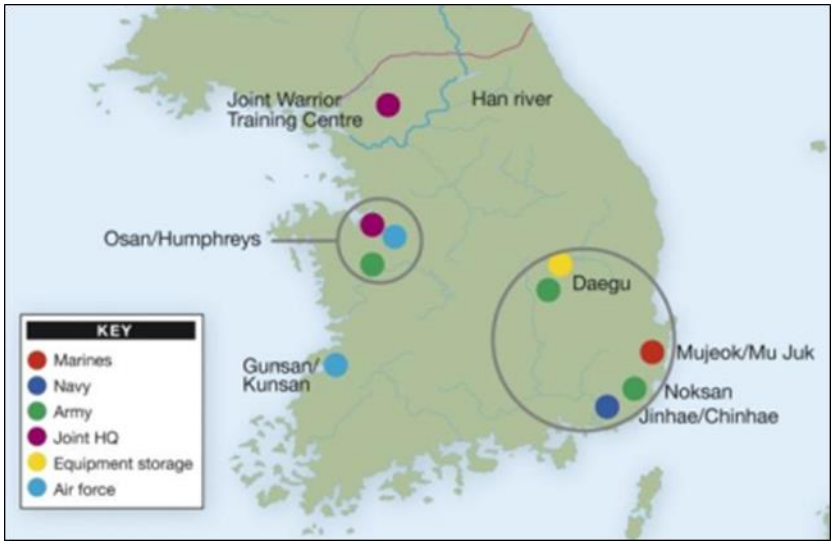
[178] Ibid, 53.

Should activating the Reserve Component units become necessary, some form of mobilization would be required, involving Congress, the President, the Secretary of Defense, or military department Secretaries, depending on the specific mobilization category.[179] Also, most Reserve Component units (as well as some Active units) could require additional personnel, equipment, and training before being certified ready for deployment, and these considerations are factored into the TPFDL as well.

U.S. Posture on the Korean Peninsula

The U.S. military is in the process of relocating its forces farther south from bases near the border with North Korea, with South Korea paying $9.7 billion for construction of new military facilities. The realignment plan reflects the shift toward a supporting role for U.S. Forces Korea (USFK) and a desire to resolve the issues arising from the location of the large U.S. Yongsan base in downtown Seoul. Some observers contend that another initial rationale for the move, which was discussed as early as 2003, was to remove U.S. forces from DPRK artillery range. Others, including the DPRK, contend that the consolidation of the U.S. footprint has actually made American forces more vulnerable, as larger massed locations are easier to target than smaller, dispersed installations.[180]

Figure A-5. U.S. Posture on the Korean Peninsula After Basing Realignment



Source: *Jane's Sentinel Security Assessment—China and Northeast Asia*, April 15, 2010.

The USFK base relocation plan has two elements. The first involves transferring a large percentage of the 9,000 U.S. military personnel at the Yongsan base to U.S. Army Garrison (USAG) Humphreys, which is located near the city of Pyeongtaek some 40 miles south of Seoul. The second element involves relocating about 10,000 troops of the Second Infantry Division from the Demilitarized Zone to areas south of the Han River (which runs through Seoul). The end result would be that USFK sites decline to 96, from 174 in 2002. The bulk of U.S. forces are to be clustered in the two primary "hubs" of Osan Air Base/USAG Humphreys and USAG Daegu that contain five "enduring sites" (Osan Air Base, USAG Humphreys, USAG Daegu, Chinhae Naval

[179] For additional information on Reserve Component Mobilization, see CRS Report RL30802, *Reserve Component Personnel Issues: Questions and Answers*, by Lawrence Kapp and Barbara Salazar Torreon.

[180] Yonhap News Agency, "N.K. Warns U.S. military bases in S. Korea within striking range," July 4, 2017, http://english.yonhapnews.co.kr/northkorea/2017/07/14/41/0401000000AEN20170714005700315F.html.

Base, and Kunsan Air Base). U.S. counter-fires (counter-artillery) forces stationed near the DMZ are the exception to this overall relocation. The United States and South Korea agreed that those U.S. units would not relocate to USAG Humphreys until the South Korean counter-fires reinforcement plan is completed around 2020.[81] The city of Dongducheon, where those soldiers are based, has protested this decision and withdrawn some cooperation with the U.S. Army.[82]

United States Pacific Command (USPACOM)

USPACOM was established on January 1, 1947, and is the oldest of the United States' unified combatant commands. Its Area of Responsibility (AOR) consists of 36 nations and contains some of the world's busiest international sea lanes. USPACOM is commanded by Admiral Harry Harris, USN. USPACOM's headquarters is supported by a number of component and subunified commands, including U.S. Forces Korea, U.S. Forces Japan, U.S. Special Operations Command Pacific, U.S. Pacific Fleet, U.S. Marine Forces Pacific, U.S. Pacific Air Forces, and U.S. Army Pacific. Approximately 375,000 U.S. military and civilian personnel are assigned to USPACOM and its different components across the Indo-Asia-Pacific region. According to USPACOM, those assignments are broken out as follows:[181]

- U.S. Pacific Fleet consists of approximately 200 ships (including five aircraft carrier strike groups), nearly 1,100 aircraft, and more than 130,000 sailors and civilians.
- Marine Corps Forces, Pacific includes two Marine Expeditionary Forces and about 86,000 personnel and 640 aircraft.
- U.S. Pacific Air Forces comprises approximately 46,000 airmen and civilians and more than 420 aircraft.
- U.S. Army Pacific has approximately 106,000 personnel from one corps and two divisions, plus over 300 aircraft assigned throughout the AOR.
- These component command personnel figures also include more than 1,200 Special Operations personnel. Department of Defense civilian employees in the Pacific Command AOR number about 38,000.

Of note, approximately 28,500 U.S. servicemembers and their families are stationed in the Republic of Korea,[182] while U.S. Forces Japan consists of approximately 54,000 military personnel and their dependents.[183] As of September 2016, approximately 5,000 servicemembers and their families were stationed in Guam.[184]

Command and Control

Established on November 7, 1978, the ROK/U.S. Combined Forces Command (CFC) is the warfighting headquarters. Its role is to deter, or defeat if necessary, outside aggression against the ROK.[185] To accomplish that mission, the CFC has operational control over more than 600,000

[181] Department of Defense, "About United States Pacific Command," http://www.pacom.mil/About-USPACOM/.

[182] United Nations Command, Combined Forces Command, U.S. Forces Korea, "Strategic Digest 2016," http://www.usfk.mil/Portals/105/Documents/2016%20Strategic%20Digest.pdf, p. 16; Jim Garamone, "Dunford: U.S.-South Korean Alliance Ready to Defend Against North Korean Threat," *DOD News*, August 14, 2017, https://www.defense.gov/News/Article/Article/1277384/.

[183] U.S. Forces Japan, "About USFJ," http://www.usfj.mil/About-USFJ/.

[184] Defense Manpower Data Center, "Base Report," March 2, 2017.

[185] Taken directly from U.S. Forces Korea Combined Forces Command webpage, http://www.usfk.mil/About/Combined-Forces-Command/, August 2, 2017.

active-duty military personnel of all services, of both countries. In wartime, augmentation could include some 3.5 million ROK reservists as well as additional U.S. forces deployed from outside the ROK. If North Korea attacked, the CFC would provide a coordinated defense through its Air, Ground, Naval, and Combined Marine Forces Component Commands and the Combined Unconventional Warfare Task Force. In-country and augmentation U.S. forces would be provided to the CFC for employment by the respective combat component. The CFC is commanded by a four-star U.S. general, with a four-star ROK Army general as deputy commander.

The United States has agreed to turn over the wartime command of Korean troops to South Korea, but the two sides have postponed this transfer for several years. Under the current command arrangement, which is a legacy of U.S. leadership of the U.N. coalition in the 1950-1953 Korean War, South Korean soldiers would be under the command of U.S. forces if there were a war on the peninsula. The plan to transfer wartime operational control recognizes South Korea's advances in economic and military strength since the Korean War and is seen by many Koreans as important for South Korean sovereignty. Progressive parties in South Korea generally support hastening the transition, arguing that the U.S. presence influences North Korea to accelerate its military buildup.

Under a 2007 agreement, the CFC, which has been headed by the U.S. commander in Korea, is to be replaced with separate U.S. and ROK military commands; the provisional name of the new U.S. command is Korea Command (KORCOM). When the U.S. and ROK militaries operate as a combined force under the new command structure, U.S. forces may be under the operational command of a Korean general officer, but U.S. general officers are to be in charge of U.S. subcomponents.[186] A bilateral Military Cooperation Center would be responsible for planning military operations, military exercises, logistics support, and intelligence exchanges, and assisting in the operation of the communication, command, control, and computer systems. It is unclear what role the U.N. Command, which the USFK Commander also holds, will have in the future arrangement.

In 2014, South Korea's Minister of Defense reportedly announced that the goal was to transfer operational control (Opcon) in 2023, stressing the completion of the Korean Air and Missile Defense System (KAMD) by 2020 as an important step in the transfer process.[187] To that effect, the Ministry of Defense announced that $1.36 billion would be invested in the KAMD system in 2017.[188] In 2010, the Opcon transfer was postponed to 2015 after a series of provocations from North Korea and amid concerns about whether South Korean forces were adequately prepared to assume responsibility. As the new deadline of 2015 grew closer, concerns again emerged about the timing. Reportedly, South Korean officials worried that their military was not fully prepared to cope with North Korean threats and that Pyongyang might interpret the Opcon transfer as a weakening of the alliance's deterrence.[189] Some military experts expressed concern that turning over control would lead to the United States reducing its overall commitment to South Korean security.[190] Questions have also arisen over whether the ROK ground-centric military can effectively lead in a joint and coalition warfighting environment. In October 2014, the United

[186] General Curtis Scaparrotti, U.S. Department of Defense Press Briefing, Washington, DC, October 24, 2014.

[187] "Increased Domestic Production Needed for Defense Industry," *KBS News*, October 25, 2014 (in Korean); "Wartime Opcon Transfer to Occur After KAMD and Kill Chain Are Completed," *Yonhap News*, October 24, 2014 (in Korean).

[188] "1.5 Trillion Won to Be Invested in Kill Chain and KAMD Next Year," *Yonhap News*, September 6, 2016.

[189] Song Sang-ho, "Allies Rack Brains over OPCON Transfer," *Korea Herald*, May 6, 2014.

[190] Lee Chi-dong and Roh Hyo-dong, "OPCON Transfer May Usher in Withdrawal of U.S. Troops from Korea: Ex-General," *Yonhap News Agency*, November 18, 2013.

States and South Korea announced in a joint statement that the allies would take a "conditions-based approach" to the Opcon transfer and determine the appropriate timing based on South Korean military capabilities and the security environment on the Korean Peninsula.[191] The decisions to delay the Opcon transfer could be interpreted either as flexible adjustments to changed circumstances on the Korean Peninsula or as emblematic of problems with following through on difficult alliance decisions. In testimony to Congress in April 2015, then-USFK Commander General Curtis Scaparrotti explained the three general conditions for Opcon transfer:[192]

- South Korea must develop the command and control capacity to lead a combined and multinational force in high-intensity conflict,
- South Korea must improve its capabilities to respond to the growing nuclear and missile threat in North Korea, and
- the Opcon transition should take place at a time that is conducive to a transition.

Scaparrotti stated that main areas of attention for improving South Korea's capabilities will be C4 (command, control, computers, and communication systems), BMD, munitions, and ISR (intelligence, surveillance, and reconnaissance) assets. As a result, reportedly the Opcon transfer may not occur until 2020 or later.[193] South Korea's Ministry of National Defense (MND) 2016 White Paper says that the MND will do its utmost to fulfill all necessary requirements to facilitate Opcon transfer by the mid-2020s by making progress toward being able to lead alliance military drills and organizing the potential future headquarters for CFC after the transfer is complete.[194]

[191] "Joint Communique of the 46th ROK-U.S. Security Consultative Meeting," U.S. Department of Defense, Washington, DC, October 23, 2014.

[192] U.S. Congress, House Committee on Armed Services, *Hearing on the Risk of Losing Military Technology Superiority and its Implications for U.S. Policy, Strategy, and Posture in the Asia-Pacific*, 114th Cong., 1st sess., April 15, 2015.

[193] Park Byong-su, "OPCON Transfer Delayed Again, This Time to Early-2020s Target Date," *Hankyoreh*, September 17, 2014.

[194] ROK Ministry of National Defense, *2016 Defense White Paper*, p. 133, http://www.mnd.go.kr/user/mnd/upload/pblictn/PBLICTNEBOOK_201701130411279290.pdf.

Appendix B. **DPRK, ROK, and U.S. Military Capabilities**

Complementing the narrative in **Appendix A**, the table below illustrates some of the differences in force structure between the DPRK and the U.S./Republic of Korea.

Table B-1. Comparison of DPRK, ROK, and U.S. Military Capabilities

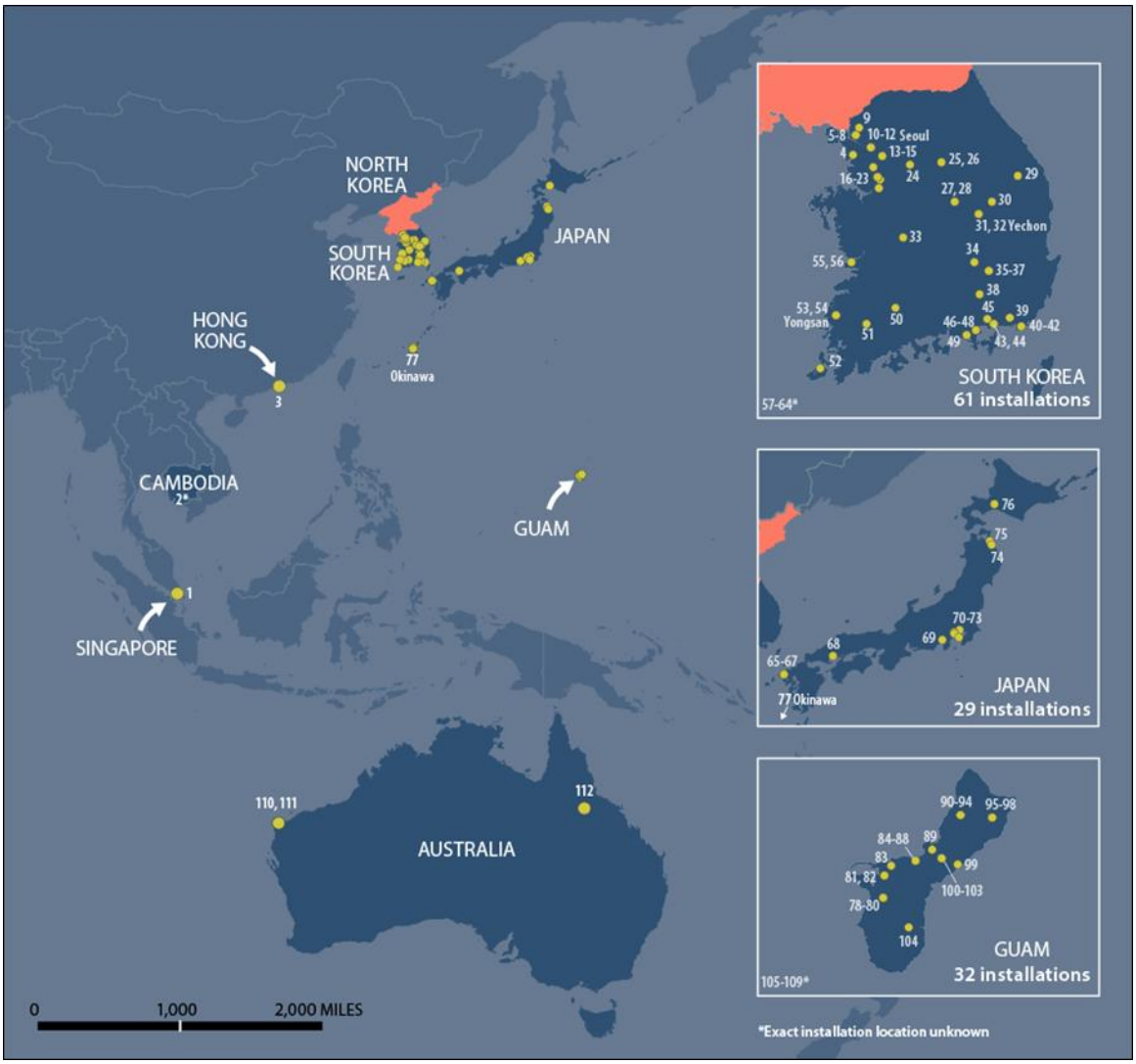
		DPRK	ROK	USA
Army	Active	1,020,000	~490,000	475,350
	Reserve	600,000	2,400,000	542,550
	Workers Peasant Red Guard	~5,700,000	N/A	N/A
	Red Youth Guard	~1,000,000	N/A	N/A
	Paramilitary Units	~320,000	N/A	N/A
	Personnel Carriers	2,500	2,790	26,859
	Artillery	21,100+	11,038+	5,312+
	Anti-Tank	1,700+	58+	1,133+
	Air Defense	11,000+	11,000+	1,207+
	Aircraft	9	Unknown	187
	UAV	Unknown	Unknown	341
	Landing Craft	Unknown	Unknown	73
	Landing Craft Utility	Unknown	Unknown	35
	Helicopter	Unknown	511+	3,883
	Missile	70+	30+	120+
	Bridge Systems	Unknown	Some	60
	Mine-Clearing Vehicles	Unknown	Unknown	Some
	Radar, Land-Based	Unknown	Some	209+
Navy	Active	60,000	70,000	512,000
	Reserve	40,000	230,000	139,700
	Aircraft Carriers	0	Unknown	10
	Cruiser	0	3	23
	Destroyers	0	6	62
	Frigates	2	14	8
	Submarines, Strategic	0	Unknown	14
	Submarines, Tactical	73	23	54
	Patrol and Coastal Combatants	383+	109+	57

		DPRK	ROK	USA
	Mine Warfare, Counter	24	9	11
	Mine Warfare, Layer	0	1	Unknown
	Logistics and Support	23	8	174
	Amphibious	267	213	1590
	Aircraft	0	21	2,519
	(Combat Capable)	Unknown	16	1,875
	Tilt-rotor	Unknown	0	280
	Helicopter	Unknown	45	1,226
	UAV	Unknown	Unknown	254
	Air Defense/Missiles	Unknown	Unknown	some
	Tank (Marines)	4,092+	100	447
	Personnel Carrier (Marines	Unknown	Unknown	4,242
	Reconnaissance	Unknown	Unknown	252
	Artillery	0	Some	1,521
	Anti-Tank	0	Some	106+
	Armored Recce-Recovery Vehicle	Unknown	Unknown	185
	Armored Engineer Vehicle	Unknown	Unknown	80
	Radar, Land-Based	Unknown	Unknown	23
Air Force	Active	110,000	65,000	316,950
	Reserve	Unknown	160,000	174,650
	Aircraft	1,185+	743	4,592
	(Combat Capable)	545	556	2,002
	Helicopter	286	49	171
	Tilt-rotor	Unknown	Unknown	49
	Air Defense	350+	206	Some
	Air-to-Air Missile	Some	Some	Some
	Bombs, Laser/TV/INS/GPS Guided	Unknown	Some	Some
	Missile, Tactical	Some	Some	Some
	UAV	Some	103+	422+

Source: IISS Military Balance 2017; MCIA Unclassified Data.

Appendix C. **U.S. Posture in the Pacific Theater**

Figure C-1. U.S. Bases



Sources: Graphic created by CRS. Information generated by Hannah Fischer using data from the Department of Defense Base Structure Report, FY2015, available at https://www.acq.osd.mil/eie/Downloads/BSI/Base%20Structure%20Report%20FY15.pdf; Department of State (2015); Esri (2016).

Key:

Country	Site	Component	Nearest City	Map #
Australia	Area A-VLF	Navy Active	Exmouth	110
Australia	Area C-HFR	Navy Active	Exmouth	111
Australia	NAVCOMMSTA H E Holt Exmouth	Navy Active	Northwest Cape	112
Cambodia	Other Site	Army Active	Unknown	2
Guam	Agana	Navy Active	Agana	84

Country	Site	Component	Nearest City	Map #
Guam	Andersen Administration Annex	Navy Active	Unknown	105
Guam	Andersen AFB	Navy Active	Andersen AFB	95
Guam	Andersen AFS	Navy Active	Unknown	106
Guam	Andersen Annex	Navy Active	Yigo	96
Guam	Andersen Communications Annex 2	Navy Active	Unknown	107
Guam	Andersen Petrol Product Storage Annex 1	Navy Active	Unknown	108
Guam	Andersen Petrol Product Storage Annex 2	Navy Active	Unknown	109
Guam	Dandan	Navy Active	Agana	85
Guam	Guam US Army Reserve Center	Army Reserve	Barrigada	101
Guam	Harmon Substation	Navy Active	Dededo	93
Guam	Naval Hospital	Navy Active	Agana	86
Guam	NAVBASE Guam	Navy Active	Agana	87
Guam	NAVBASE Guam Apra Heights	Navy Active	Apra	89
Guam	NAVBASE Guam Barrigada	Navy Active	Barrigada	100
Guam	NAVBASE Guam Finegayan	Navy Active	Finegayan	90
Guam	NAVBASE Guam Finegayan, South	Navy Active	Finegayan	91
Guam	NAVBASE Guam Harmon	Navy Active	Dededo	92
Guam	NAVBASE Guam Magazine Reservoir, Naval Magazine	Navy Active	Santa Rita	78
Guam	NAVBASE Guam Marbo	Navy Active	Mangilao	99
Guam	NAVBASE Guam Naval Magazine	Navy Active	Santa Rita	79
Guam	NAVBASE Guam Talofofo	Navy Active	Talofofo	104
Guam	NAVBASE Guam Tiyan	Navy Active	Agana	88
Guam	NAVBASE Guam, Naval Magazine	Navy Active	Santa Rita	80
Guam	NG Fort Juan Muna	Army Guard	Barrigada	102
Guam	NG Guam Barrigada Complex	Army Guard	Barrigada	103
Guam	Nimitz Hill	Navy Active	Nimitz Hill	83
Guam	Santa Rosa Parcel B	Navy Active	Andersen AFB	97
Guam	Sasa Valley	Navy Active	Piti	81
Guam	Tanguisson Point	Navy Active	Dededo	94
Guam	Tenjo Vista	Navy Active	Piti	82
Guam	WAR DOG CEMETERY	Navy Active	Andersen Ab	98
Hong Kong	Other Site	Unknown	Hong Kong	3
Japan	Akasaka Press Center	Army Active	Tokyo	71
Japan	Akasaki POL Dep	Navy Active	Sasebo	65
Japan	Akizuki Ammunition Depot	Army Active	Akizuki	68

Country	Site	Component	Nearest City	Map #
Japan	Awase	Navy Active	Okinawa	77
Japan	Camp Courtney	Marine Corps Active	Tengan	77
Japan	Camp Courtney FH Annex	Air Force Active	Okinawa	77
Japan	Camp Foster	Marine Corps Active	Zukeran	77
Japan	Camp Foster FH Annex	Air Force Active	Okinawa	77
Japan	Camp Fuji Japan	Marine Corps Active	Fuji	69
Japan	Camp Gonsalves	Marine Corps Active	Okinawa	77
Japan	Camp Hansen	Marine Corps Active	Okinawa	77
Japan	Camp Kinser	Marine Corps Active	Okinawa	77
Japan	Camp Kinser	Air Force Active	Okinawa	77
Japan	Camp Kuwae FH Annex	Air Force Active	Okinawa	77
Japan	Camp Lester	Marine Corps Active	Okinawa	77
Japan	Camp McTureous	Marine Corps Active	Tengan	77
Japan	Camp McTureous FH Annex	Air Force Active	Okinawa	77
Japan	Camp Schwab	Marine Corps Active	Okinawa	77
Japan	Camp Shields	Navy Active	Okinawa	77
Japan	Camp Shields FH Annex	Air Force Active	Okinawa	77
Japan	Camp Zama	Army Active	Sagamihara	70
Japan	Camp Zama Communications Station	Air Force Active	Zama	73
Japan	Chitose Administration Annex	Air Force Active	Chitose	76
Japan	COMFLEACT Kadena Okinawa	Navy Active	Okinawa	77
Japan	COMFLEACT Sasebo	Navy Active	Sasebo	67
Japan	COMFLEACT Yokosuka	Navy Active	Yokosuka	72
Japan	Draughon Training Range	Air Force Active	Misawa	75
Japan	Drydock Area-5030	Navy Active	Sasebo	66
Japan	Hachinohe POL Dep	Navy Active	Hachinohe	74
Singapore	Singapore Area Coordinator	Navy Active	Singapore	I
South Korea	Bayonet Training Area	Army Active	Unknown	57
South Korea	Camp Ames	Army Active	Unknown	58

Country	Site	Component	Nearest City	Map #
South Korea	Camp Carroll	Navy Active	Yechon	32
South Korea	Camp Carroll	Army Active	Waegwan	34
South Korea	Camp Casey	Army Active	Tong Du Chon	46
South Korea	Camp Castle	Army Active	Tong Du Chon	47
South Korea	Camp Eagle	Army Active	Wonju	26
South Korea	Camp Henry	Army Active	Taegu	35
South Korea	Camp Henry (Brooklyn Hill)	Army Active	Yongsan	54
South Korea	Camp Henry (Dartboard Site)	Army Active	Unknown	59
South Korea	Camp Henry (Pier 8)	Army Active	Pusan	40
South Korea	Camp Hovey	Army Active	Camp Hovey	21
South Korea	Camp Humphreys	Army Active	Pyeongtack	22
South Korea	Camp Humphreys (High Point)	Army Active	Chechon	50
South Korea	Camp Humphreys (Richmond)	Army Active	Taejon	33
South Korea	Camp Jackson	Army Active	Uijong Bu	8
South Korea	Camp Kwangsa Ri	Army Active	Yongju	30
South Korea	Camp Long	Army Active	Wonju	25
South Korea	Camp Market	Army Active	Inchon	4
South Korea	Camp Mu Juk	Marine Corps Active	Pohang	28
South Korea	Camp Red Cloud	Army Active	Uijong Bu	7
South Korea	Camp Red Cloud (Bullseye 01)	Army Active	Yongchon	24
South Korea	Camp Red Cloud (Bullseye 02)	Army Active	Paju	9
South Korea	Camp Red Cloud Communications Site	Air Force Active	Uijong Bu	5
South Korea	Camp Stanley	Army Active	Uijong Bu	6
South Korea	Camp Walker	Army Active	Taegu	36
South Korea	Camp Yongin	Army Active	Yongin	52
South Korea	Chang San	Army Active	Pusan	41
South Korea	DRMO APO	Army Active	Kimchon	38
South Korea	Far East Dist Engr	Army Active	Seoul	11
South Korea	Fleet Activities Chinhae	Navy Active	Chinhae	43
South Korea	Gun Training Area	Army Active	Unknown	60
South Korea	H220 Heliport	Army Active	Tong Du Chon	48
South Korea	K-16 AB	Army Active	Songnam	13
South Korea	Kamaksan ASA	Army Active	Unknown	61
South Korea	Kimhae Storage Annex	Air Force Active	Kimhae	39
South Korea	Kunsan AB	Air Force Active	Kunsan	55

Country	Site	Component	Nearest City	Map #
South Korea	Kunsan POL Terminal Site	Army Active	Kunsan	56
South Korea	Kwang-Ju AB	Air Force Active	Kwangju	51
South Korea	Madison Site	Army Active	Unknown	62
South Korea	Masan Ammunition Depot	Army Active	Masan	45
South Korea	Niblo Barracks	Army Active	Seoul	12
South Korea	Osan AFB	Air Force Active	Osan AFB	17
South Korea	Osan Ni Ammunition Storage Annex	Air Force Active	Osan	18
South Korea	Osan Site 2	Air Force Active	Osan AFB	19
South Korea	Osan Site 3	Air Force Active	Osan AFB	20
South Korea	Pil-Sung Air Range	Air Force Active	Pil-Sung	29
South Korea	Pohang	Navy Active	Pohang	27
South Korea	Pusan Storage Facility	Army Active	Pusan	42
South Korea	Pyongtaek Cpx Area	Army Active	Pyong Taek	23
South Korea	ROK Navy Base	Navy Active	Chinhae	44
South Korea	Shinbuk Relay	Army Active	Unknown	63
South Korea	Sungnam Golf Course	Army Active	Songnam	14
South Korea	Suwon AB	Air Force Active	Suwon	16
South Korea	Taegu AB	Air Force Active	Taegu	37
South Korea	Tango	Army Active	Songnam	15
South Korea	Watkins Range	Army Active	Unknown	64
South Korea	Yechon	Navy Active	Yechon	31
South Korea	Yong Pyong	Army Active	Yong Pyong	49
South Korea	Yongsan Garrison	Army Active	Seoul	10
South Korea	Yongsan Garrison	Navy Active	Yongsan	53

Author Information

Kathleen J. McInnis, Coordinator
Analyst in International Security

Andrew Feickert
Specialist in Military Ground Forces

Mark E. Manyin
Specialist in Asian Affairs

Steven A. Hildreth
Specialist in U.S. and Foreign National Security Programs

Mary Beth D. Nikitin
Specialist in Nonproliferation

Emma Chanlett-Avery
Specialist in Asian Affairs

Catherine A. Theohary
Specialist in National Security Policy, Cyber and Information Operations

Disclaimer

This document was prepared by the Congressional Research Service (CRS). CRS serves as nonpartisan shared staff to congressional committees and Members of Congress. It operates solely at the behest of and under the direction of Congress. Information in a CRS Report should not be relied upon for purposes other than public understanding of information that has been provided by CRS to Members of Congress in connection with CRS's institutional role. CRS Reports, as a work of the United States Government, are not subject to copyright protection in the United States. Any CRS Report may be reproduced and distributed in its entirety without permission from CRS. However, as a CRS Report may include copyrighted images or material from a third party, you may need to obtain the permission of the copyright holder if you wish to copy or otherwise use copyrighted material.