Korean Crisis, 1994
Military Geography, Military Balance, Military Options

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with South Korea, asserted that, "if a war breaks out, Seoul will turn into a sea of fire."

U.N., U.S., and South Korean decisionmakers currently are considering what mix of political, economic, and military responses might be most likely to resolve the resultant crisis peacefully. This brief report in that regard serves three purposes. First, it describes the geographic context within which any future Korean armed conflict would occur. Next, it assesses the military balance between DPRK and U.S./ROK forces. Finally, it reviews military options that each adversary might consider singly or in some combination. Sequences selected constitute a rough escalation ladder with unevenly spaced rungs. Appraisals summarize prominent strengths and shortcomings of each course, but do not predict outcomes. Neither do they address unexpected military intervention by China or Russia, which would radically alter every evaluation.

MILITARY GEOGRAPHY

The Korean peninsula, 600 miles long and 105 miles wide at the waist, embraces about the same area as Utah, but is shaped more like Florida. It shares an 850-mile border with China, along the Yalu and Tumen Rivers, and bounds Russia for 11 miles in the extreme northeast. The Sea of Japan (Eastern Sea) abuts its eastern shore; the Yellow Sea and Korea Bay wash the west (see Orientation Map).

A nearly uninhabited Demilitarized Zone, 2.5 miles wide and tilted slightly from southwest to northeast across the 38th Parallel, presently separates North from South Korea. Fifty-five percent of the peninsula lies in DPRK territory; the Republic of Korea occupies the rest.  

TOPOGRAPHY AND CLIMATE

Mountains and rugged hills cover 80 percent of Korea. Major ranges crisscross the DPRK and begin a "backbone" that extends southward along the east coast, decreasing gradually in elevation until it terminates 50 miles north of Pusan. Offshoots form a spectacular array of "ribs." Rivers that flow east

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from the watershed follow short, precipitous courses to the sea. Those that flow west are relatively long, slope less sharply, and eventually meander across wide flood plains until they reach an irregular coast that is studded with hundreds of islands. The Han and Imjin Rivers, which empty near Seoul, are among the largest.

The Sea of Japan is very deep and maritime approaches to Korea from the east contain few obstacles. The Yellow Sea, by contrast, is shallow. The world’s second greatest tidal range, which averages 30 feet or more, alternately covers and exposes mud flats, shoals, and low-lying islands along the west coast.

Korean winters are long and cold (more so in the DPRK than in the ROK), while summers are hot and humid. Spring and fall are short seasons. Frigid air masses from Siberia often freeze rivers solid enough to support motor vehicle traffic. Warm monsoon winds that sweep westward across Korea from the Pacific Ocean bring most precipitation in July and August. Torrential rains accompany occasional typhoons.

POPULATION AND MAN-MADE STRUCTURES

The physical setting just described was precisely the same in 1950, when North Korea invaded the ROK. Population patterns and man-made structures, however, differ in several important respects.

Populations have more than doubled since 1950, when the DPRK contained approximately 9 million people and South Korea 21 million. Current estimates credit those two countries with 22.7 and 44.6 million respectively. Perhaps 70 percent of all inhabitants on both sides of the 38th Parallel formerly engaged in agriculture. Half that many presently claim farming or forestry as their primary occupation in North Korea; the ROK counts 21 percent. The remainder now reside in towns and cities (Seoul, for example, has expanded from 1.1 to more than 11 million). Kyonggi Province, which surrounds that capital and Inchon, is the most densely populated region in either nation, but five other urban centers exceed one million: Pusan, Taejon, Taegu, Kwangju (all in South Korea) and the DPRK capital at Pyongyang.

Few paved roads serve North Korea. The best ones connect Pyongyang with the DMZ and Nampo with Wonsan. Some have been widened enough in spots to accommodate fighter-bombers based at adjacent airfields. Two standard gauge railways, one on each coast, carry most traffic. East-west connections are interspersed. South Korea also relies extensively on railroads, but less so than in the recent past: Four-lane superhighways now link Seoul with all provincial cities, reducing motor vehicle travel times to a day or less.

There are few good natural harbors in either country, despite long, indented coasts. Five much improved ports handle most maritime cargo for South Korea, of which Pusan and Inchon are the best. Nampo services Pyongyang. Wonsan is the most important naval port on North Korea’s eastern shore. Chongjin handles commercial traffic for the DPRK.
otherwise forbidding terrain. Precision guided munitions and missile delivery systems make hard targets more vulnerable than they were in 1950-53.

MILITARY BALANCE

Quantitative and qualitative assessments herein compare the combat power of North Korea with that of the U.S./ROK coalition. They do not speculate about possible United Nations participation or the unanticipated emergence of DPRK allies.6

COMPARATIVE FORCE LEVELS

Military balance assessments begin with statistical summaries (see table on facing page).6 North Korea’s armed services contain almost twice as many active military personnel as South Korean and forward deployed U.S. forces combined. Reserve figures reflected on the table seem grossly inflated for most practical purposes. Ready reserves, reasonably well equipped, trained, and expeditiously mobilizable, perhaps total no more than 500,000 apiece.

The DPRK and ROK both emphasize ground forces. North Korea is quantitatively superior in most respects: twice as many active uniformed personnel; a comparable number of divisions, but 58 more independent brigades; more than twice as many main battle tanks (3,700 vs. 1,800), plus 500 light tanks designed for river crossings; almost one-third more artillery, with a much larger share of self-propelled tubes (4,500 vs. 900); sixteen times as many multiple rocket launchers; five times as many surface-to-surface missiles; and air defense suites that dwarf South Korean analogues. The South Korean Army is quantitatively superior only in armored personnel carriers, armored infantry fighting vehicles, and helicopters. The U.S. 24 Infantry Division, deployed near the DMZ, does little to redress those imbalances.

Neither Korea possesses a large Navy. South Korea is quantitatively superior in surface combatants (9 destroyers, 29 frigates, and 4 corvettes vs. 3 DPRK frigates and 3 corvettes), but North Korea outclasses the ROK in every other category. Its 25 submarines, 175 torpedo boats, and 145 antiship missile craft are especially well suited for operations in and near coastal waters. The ROK Navy consequently would rely heavily on a U.S. carrier battle group based in Japan for early reinforcement.

Neither Korea possesses a large air force. Numbers of fixed-wing aircraft are nearly equal. North Korea has half as many helicopters in its Air Force as

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South Korea has in its Army. The overall rotary-wing balance thereby favors the ROK somewhat less than described above. U.S. fighter/attack and Airborne Warning and Control System (AWACS) aircraft based in Korea and Japan tip the numerical scales slightly in favor of the U.S./ROK coalition.

North Korea’s armed services exclude Marines. Two ROK marine divisions and a U.S. Marine Expeditionary Force (MEF) on Okinawa accordingly afford amphibious assault and other capabilities that far exceed those of the DPRK.

Additional formations from the U.S. Army, Navy, Air Force, and Marine Corps comprise a strategic reserve ready to augment U.S. forward deployed forces if so directed. A light infantry division, a tactical fighter squadron, and assorted naval combatants in Hawaii are closest to the scene (3,975 miles from Pusan). The next nearest supplements are stationed along the U.S. west coast, nearly 5,000 miles away. One Maritime Prepositioning Squadron at Diego Garcia, another on Guam, are prepared to help on short notice.

QUALITATIVE FACTORS

It is true that quantity has a quality all its own, because large forces retain stronger capabilities than otherwise would be possible after suffering heavy losses and possess flexibilities not otherwise obtainable. The full significance of numbers, however, is revealed only in context with qualitative factors, many of them intangible, that contribute to combat power. Typical considerations include education, training, and combat experience; discipline, loyalty, morale, adaptability; technological competence; logistic systems; command, control, communications, and intelligence (C3I); dispositions; and leadership.

There is little to choose between DPRK and ROK military personnel. Both sides are well organized, thoroughly professional, dedicated, tough mentally as well as physically, and are thoroughly convinced that their cause is just, although one may question how large a share of North Korea’s rank and file would welcome orders to initiate large-scale offensive operations.

North Korean armed forces enjoy several advantages. They get 20 percent ($4.6-5 billion) or more of a small GNP (now about $22 billion) year after year. The DPRK remains a backward, impoverished country in all other regards. Much of the DPRK weapon inventory is outmoded, especially combat aircraft, but all services are completing a long-term improvement plan that commenced in the late 1970s. The best units (about 60 percent) are positioned within 60 miles or less of the DMZ. Hardened facilities in forward positions, many

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progress will take a long time to complete. Many senior military commanders and Members of Congress moreover question whether available U.S. airlift and sealift would be sufficient to deploy and sustain two major regional contingencies simultaneously.10

U.S. and South Korean forces both lack proven defenses against DPRK ballistic missiles, because upgraded Patriot batteries have never seen combat. Chemical warfare defense and countermine capabilities are deficient.

NORTH KOREAN OPTIONS

At least six distinctive military courses of action are open to the Democratic People's Republic of Korea if its leader elects to defy the world community. Distinctive objectives, advantages, and disadvantages accompany each:

- Option A: Minimize Military Risks
- Option B: Destabilize South Korea
- Option C: Conduct Incursions
- Option D: Intensify Transnational Terrorism
- Option E: Launch Conventional and Unconventional Invasions
- Option F: Employ Nuclear Weapons

OPTION A: MINIMIZE MILITARY RISKS

The status quo may seem militarily attractive to Kim Il Sung in some respects. Perpetuation of the perennial confrontation between North Korea and the U.S./ROK coalition could minimize any immediate risk of major war and permit DPRK forces to further improve their posture. Nuclear weapon projects perhaps could proceed unimpeded indefinitely until they reach fruition, if the world community confined countermeasures to talk instead of action. North Korea thereafter would possess infinitely greater coercive/offensive power and might market nuclear weapons to any buyer willing to pay a high price.

The price of stalling for time, however, could be high. Option A, which minimizes military risks, also minimizes potential opportunities for great gains. Chances would be slim that 82-year-old Kim Il Sung could achieve any important objectives before he dies, becomes incapacitated, or transfers power to his son, Kim Jong Il, whose authority seems uncertain. Unification of Korea on DPRK terms would become an empty dream if North Korea's mismanaged economy, already deprived of support from the former Soviet Union

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stress; to stoke sentiments for early political solutions favorable for North Korea; to provoke responses that could be politically counterproductive for the United States and its South Korean partner. Success could achieve a great deal at little cost, but most such operations thus far have been counterproductive.  

**OPTION D: INTENSIFY TRANSNATIONAL TERRORISM**

The U.S. Department of State brands North Korea a terrorist state, along with Iraq, Iran, and Libya, with which the DPRK maintains close ties. Highly publicized atrocities that span the last quarter century include two assassination attempts against ROK President Park Chung Hee (1968; a second botched attack in 1974 killed his wife); an attempt to assassinate President Chun Doo Hwan in Rangoon (17 ROK officials, including six cabinet ministers and aides, died, 1983); axe murders during a tree-trimming incident in the DMZ (1976); and the obliteration of a South Korean airliner with 115 passengers and crew aboard (1987). North Korea is not known to have sponsored any terrorist act since then, but it provides technicians, trainers, weapons, and other support to renegade groups and states that do.

The resurgence of North Korean terrorism might support Option B to intensify fear and suffering within South Korea, and thereby convince ROK officials that major concessions would be preferable to continued chaos. North Korean terrorists alternatively might wage an unconventional war against U.S. and allied people, enterprises, and property worldwide, including the United States proper, perhaps with assistance from other "outlaws." The objective in such event would be to weaken U.S. national will and crack the U.S./ROK coalition. Transnational terrorism, however, also could convince previously reluctant members of the United Nations that economic sanctions and, if necessary, stronger actions against North Korea were both advisable and unavoidable.

**OPTION E: LAUNCH CONVENTIONAL AND UNCONVENTIONAL INVASIONS**

Kim Il Sung has rationally avoided a full-scale shooting war since 1953, probably because risks in his judgment seemed to outweigh gains. He declined to strike south when most U.S. long-haul airlift and sealift forces were required to deploy and sustain military operations in Southeast Asia (1965-1972) and during Desert Shield and Desert Storm (1990-1991). Prospects of early economic collapse and desperation, however, conceivably might make him change his mind. Overly ambitious and poorly informed generals moreover could seize control after his demise and, through miscalculation, conclude that war was preferable to gradual weakening or absorption by a vibrant South Korea and that a quick victory at acceptable costs was possible.

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combat capabilities. North Korean infantry and armored elements accordingly would be exposed to U.S./ROK air strikes soon after they enter South Korea. Failure to win quickly would seem fatal unless large allied forces unexpectedly intervened on North Korea’s behalf, as they did in 1950.

**OPTION F: EMPLOY NUCLEAR WEAPONS**

The Democratic People’s Republic of Korea currently possesses no more than one or two "primitive" nuclear weapons, if it has any at all, according to most open source estimates. Neither do North Korean armed forces have any credible aerial delivery vehicles. The U.S. Director of Central Intelligence suggests that truck transportation might be feasible, given the probable size and weight of DPRK weapons.¹⁷ Commercial boats and ships might infiltrate South Korean ports with one or more atomic bombs embarked. The DPRK may someday acquire man-portable suitcase size bombs for use by SOF but Seoul, sometimes mentioned as a lucrative target, meanwhile seems safe (it is not clear why Kim II Sung would want to destroy Seoul rather than preserve its skilled manpower and economic treasures for his own use).

One realistic and potentially devastating alternative remains. North Korea could position one or more nuclear weapons in tunnels beneath the Demilitarized Zone and detonate them when windborne fallout from a subsurface burst would drift south. A huge crater and radioactive cloud would instantaneously breach U.S./ROK coalition lines which hug the DMZ. Electromagnetic pulse would disrupt radio communications and computers. North Korean troops then could pour south over safe routes while confusion reigned following the first use of nuclear weapons against armed forces in world history. Military planners in Pyongyang might speculate that a shocked and sickened world would simply look away. Catastrophic failure, however, would follow initial success if the President of the United States ordered nuclear retaliation against the DPRK (see U.S./ROK Option H) or, with U.N. assistance, applied overwhelming conventional military power.

**U.S./SOUTH KOREA OPTIONS**

The U.S./ROK coalition, which has been in a deterrent and defensive mode since 1953, could exercise a mix of offensive and defensive options. Options A-C pertain in peacetime. Options D-H involve some form of armed combat:

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outweigh gains. Ruinous results nevertheless could occur if North Korea survived economic sanctions and other nonmilitary pressures, took full advantage of available time to complete an ambitious nuclear weapon program with appropriate delivery systems, used products thereof for "blackmail" purposes, supplied some weapons to other rogue states, and/or employed them against South Korea.

OPTION C: IMPROVE DETERRENT/DEFENSE POSTURE

Low profile augmentation of U.S. forces in Korea and Japan is in progress. A Patriot air defense battalion soon will help protect military air bases near Seoul. A second battalion in the Continental United States is ready to reinforce if the U.S./ROK coalition faces an emergency. Aircraft maintenance crews and repair parts are bolstering support capabilities in Korea and Japan. Secretary of Defense William J. Perry recently announced that additional unspecified preparations are possible.\(^{20}\) Reintroduction of theater nuclear weapon systems into South Korea and on board neighboring ships for deterrent purposes is one of many possibilities.

Senator Sam Nunn, who is Chairman of the Senate Armed Services Committee, and his colleague Senator Richard Lugar recommend the following precautions "at a minimum if North Korean intransigence forces the world community to impose sanctions:" (1) continue to strengthen our intelligence capabilities, making every effort to gain as much warning as possible of a North Korean attack; (2) accelerate our efforts to correct U.S. and South Korean force structure deficiencies, including theater missile and chemical defenses, counterbattery fire, and countermine capabilities; and (3) reinforce our military forces in South Korea to strengthen deterrence and reduce the dangers of a short-warning attack."\(^{21}\)

Such actions would improve U.S./ROK military posture. Whether they would increase or decrease the likelihood of war depends on reactions in Pyongyang. Effects would be de-escalatory only if DPRK leaders view them as nonprovocative.

OPTION D: CONDUCT FORWARD DEFENSE

Secretary of State Dean Acheson, in a speech to the National Press Club on January 12, 1950, diagrammed a U.S. insular defense perimeter from the Aleutian Islands through Japan and the Ryukyus to the Philippines. It excluded Formosa (Taiwan) and Korea because, he claimed, "it must be clear that no person can guarantee these areas against military attack." Poorly armed, poorly equipped, poorly trained, and poorly motivated U.S. and ROK forces met the

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\(^{21}\)Senator Sam Nunn and Senator Richard Lugar, *Statement on the Korean Peninsula*, p. 3.
combat; ammunition expenditures, consumption rates, and equipment losses will be inordinately high. Thus...there will be requirements for immediate and substantial augmentation by U.S. land- and carrier-based air; for equally prompt and substantial material assistance, initially by air lift and subsequently by sea; and for [U.S.] Seventh Fleet support in protecting the water approaches to ROK ports.26 North Korean armed forces could fold quickly, as Iraqi forces did during Desert Storm, but the U.S./ROK coalition cannot count on it.

Several potentially serious problems confront U.S. and ROK defenders:

- The expeditious arrival of adequate U.S. reinforcements and supplies would appear problematic if U.S. armed forces became heavily involved in a major regional contingency elsewhere (say in Bosnia or Iraq) shortly before war commenced in Korea.

- The security of ROK ports and airfields against ballistic missile attacks could be assured only if upgraded Patriot batteries, untested in combat, prove to be highly effective.

- U.S./ROK forward deployment dilemmas exist, because ground forces massed just south of the DMZ to block conventional assaults are vulnerable to nuclear attack. Greater dispersal would better enable them to survive nearby nuclear detonations, but would make it more difficult to stop a conventional invasion.

- Much of South Korea's civilian population is poorly protected against chemical warfare, which the DPRK could wage deep in ROK territory with ballistic missiles and special operations forces.

- B-52 bombers will remain inconveniently positioned for operations against North Korea unless they return to Guam or some other relevant forward base. Round trips from Minot AFB, ND and Barksdale AFB, LA, for example, presently take approximately 27 and 34 hours respectively.

- A range of objectives and war termination strategies that cover a range of unpredictable circumstances still seems advisable. The status quo ante bellum and unconditional surrender represent possible ends; a negotiated settlement and forceable reunification of Korea on U.S. and ROK terms are possible means.

**OPTION E: BLOCKADE NORTH KOREA**

The United States and South Korea could conduct a naval blockade of North Korea if diplomatic measures and economic sanctions fail to produce desired results. Capabilities to do so are more than adequate. A strictly enforced cordon could break North Korea's economic back; prevent pariahs like Iran and Libya from shipping oil to North Korea if they refuse to abide by a

26Ibid., p. 44-45.
Success would not be assured, even if intelligence were perfect and air strikes achieved pinpoint accuracy against exposed targets. Direct hits that breached the core of North Korea’s 5 megawatt reactor at Yongbyon, 60 miles north of Pyongyang, could cover Seoul with radioactive fallout within a few hours and southern Japan the next day (no such effect occurred in Iraq after Israeli aircraft demolished an inactive reactor in 1981; structural damage to Iraqi nuclear facilities during Desert Storm left radioactive cores intact).

U.S. and ROK special operations forces could attack North Korean nuclear installations using different techniques. Whether better results might be expected, perhaps using nonlethal, "soft kill," capabilities, are not discussed in open sources. DPRK responses would be unpredictable in any event.

OPTION G: LAUNCH PREEMPTIVE ATTACK

Extreme provocation (DPRK sponsorship and participation in high-intensity transnational terrorism, for example) or belief that a North Korean invasion seemed imminent might tempt political leaders of the U.S./ROK military coalition to preempt. Such an unexpected move in the latter event might catch enemy forces off balance before their assault formations finished taking shape, upset their plans, short-circuit their timing, catch many units in the open, and otherwise increase prospects for a quick victory.

Option G, however, is politically unattractive in the United States and South Korea. It also seems very risky for pragmatic military reasons. Combat power now in place is insufficient, if one subscribes to widespread beliefs that frontal assaults by land forces against first-rate foes in formidable defenses demand quantitative superiority on the order of 3:1 (a little less or a lot more, depending on circumstances). Steps to bolster U.S. and ROK land capabilities enough to create a favorable balance near the DMZ could convince North Korea that it had nothing to lose and perhaps something to gain by striking before the buildup was complete. The same response most likely would ensue if the U.S./ROK coalition punished North Korean transgressions with air and missile strikes. The need for war termination objectives and strategies described in Option D once again would apply.

OPTION H: EMPLOY NUCLEAR WEAPONS

Political leaders of the U.S./ROK military coalition in extremis might seriously consider the use of nuclear weapons to avoid defeat or terminate what otherwise would be a protracted war accompanied by exorbitant economic and human costs. Inability of the United States to introduce adequate reinforcements and supplies into the Area of Operations because of deep U.S. military involvement in a major regional contingency elsewhere or because South Korean seaports were too badly damaged could create such conditions. So could DPRK use of nuclear weapons.

U.S. nuclear fire power unquestionably could quickly and cost-effectively obliterate North Korean abilities to continue the conflict. All might go well as a result. The first use of nuclear weapons in combat since 1945, however, might