

FOREIGN NUCLEAR DEVELOPMENTS: A GATHERING STORM



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INTRODUCTION

While Western leaders, particularly in the United States and the United Kingdom, continue to advocate policies supporting the goal of ultimately eliminating nuclear weapons, the nuclear postures of Russia, China, and other states appear to be heading in precisely the opposite direction. This disconnect is growing and worrisome.

Despite the fact that many in the West believe nuclear weapons are Cold War relics with diminishing utility and relevance in the 21st century, Russian military and civilian leaders increasingly brandish nuclear threats and declare nuclear weapons to be of growing importance. Moreover, despite an approximately 80 percent reduction in the number of U.S. nuclear weapons and a planned 50 percent drop in the number of UK nuclear weapons since the end of the Cold War, Russia has made nuclear weapons the centerpiece of its military modernization program, while China continues to aggressively increase the size and quality of its nuclear arsenal.

Russia is seeking to reinforce its great power status, establish influence and control along its periphery, and undermine Western influence and alliances. Its national security policy and military doctrine emphasize nuclear forces. Russia is engaged in an extensive and comprehensive nuclear modernization program, developing and deploying modern and more sophisticated nuclear weapons, and upgrading all elements of its strategic nuclear delivery systems. Russian leaders have threatened to launch nuclear attacks on NATO members and have conducted frequent and unprecedented military exercises involving nuclear forces and bomber patrols in Europe, Asia, and the Western Hemisphere exceeding the scope and breadth of what was witnessed during the darkest days of the Cold War. And Russia is knocking down one of the last barriers to a full-scale nuclear buildup by violating its nuclear arms control commitments.

These developments suggest that Russia's nuclear posture is evolving in ways diametrically opposite those of the United States and the United Kingdom. Aggressive Russian behavior, coupled with Russia's brandishing of nuclear threats against the United States, the United Kingdom, their allies and friends, and simulated first use of nuclear weapons in many of its military exercises, are a cause of serious concern.

At the same time, China is engaged in an extensive nuclear weapons buildup, developing a range of new capabilities intended to underpin Beijing's dominant role in the Far East and challenge the U.S. presence in the Asia-Pacific region. China's modernized nuclear capabilities – including both strategic and non-strategic nuclear systems – serve as the backdrop for its aggressive geostrategic moves to assert sovereignty over territories claimed by its neighbors, including U.S. friends and allies. China has the largest ballistic missile program in the world today and is building up its conventional force projection capabilities, backed by significant increases in military spending.

In addition to Russia and China, North Korea is improving its nuclear weapons and ballistic missile capabilities as its leadership becomes increasingly bellicose in its rhetoric. Threats to target nuclear weapons against U.S. allies in the region, as well as against the U.S. homeland itself, are being enabled by the development of new nuclear and missile capabilities. North Korea's efforts to assist Iran in the development of its nuclear capabilities are ongoing, despite the negotiation of a Framework Agreement intended to limit Tehran's nuclear breakout potential. Iran appears to be seeking ways to preserve the capability to develop nuclear weapons as a counter to U.S. influence in the region and a means of intimidating U.S. allies and friends like Israel.

In the face of these developments, it may be time for a serious reassessment of the nuclear policies of the United States and its allies.

This brochure is intended to inform and facilitate serious discussion of the challenges to U.S. and international security posed by Russian, Chinese, North Korean, and Iranian nuclear developments.

RUSSIA

RUSSIAN MILITARY DOCTRINE

Russia's military doctrine places primacy on nuclear forces, including sanctioning their use preemptively against conventional threats to the Russian Federation. The latest version of Russia's military doctrine, approved by President Vladimir Putin in December 2014, notes:

- "The Russian Federation reserves the right to utilize nuclear weapons in response to the utilization of nuclear and other types of weapons of mass destruction against it and (or) its allies, and also in the event of aggression against the Russian Federation involving the use of conventional weapons when the very existence of the state is under threat."
- "Nuclear weapons will remain an important factor" for preventing not only nuclear war but "military conflicts with the use of conventional weapons (large-scale war, regional war)" and Russia's strategic nuclear forces will guarantee "unacceptable damage to the aggressor in any situation."



Russia's new military doctrine reinforces the main tenets of its 2010 military doctrine, in which the use of nuclear weapons in conflict – even of a conventional

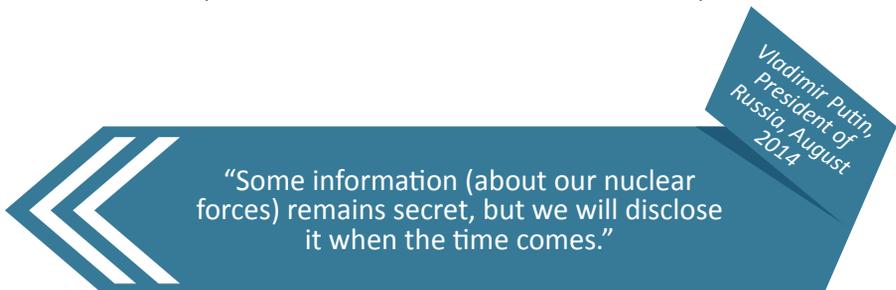
nature – is justifiable under certain conditions. Russian officials have also spoken of the use of nuclear weapons as a means of ending conflict on terms favorable to the Russian Federation, and this is reflected in their exercises.

This doctrinal emphasis on the important role of nuclear weapons is backed by a significant investment of fiscal resources in nuclear weapons and infrastructure.

RUSSIAN LEADERSHIP STATEMENTS

Russian military and civilian leaders have been remarkably open and candid about their views on the utility of nuclear weapons. The following are examples of these statements.

- “I want to remind you that Russia is one of the leading nuclear powers... It’s best not to mess with us.” (President Vladimir Putin, August 2014)
- “The threat of a nuclear conflict is higher today than it was during the Cold War.” (Igor Ivanov, former Russian Foreign Minister and Security Council Secretary, January 2015)
- “In my view, our primary enemy is the U.S. and the North Atlantic bloc.” (Gen. Yuri Yakubov, Senior Defense Ministry official, September 2014)
- “In a situation critical for national security, we don’t exclude a preventive nuclear strike at the aggressor.” (Gen. Nikolai Patrushev, head of Russia’s Security Council, June 2010)
- “...to defend the sovereignty and territorial integrity of Russia and its allies, military forces will be used, including preventively, including with the use of nuclear weapons...” (Gen. Yuri Baluyevsky, then-Chief of the General Staff, January 2008)
- “The nuclear deterrent and missiles is our absolute priority and we have funded that programme 100%...” (Then-Prime Minister Vladimir Putin, February 2012)
- Regarding plans to add more than 50 intercontinental ballistic missiles to the strategic nuclear forces in 2015: “You can imagine what a powerful force this is.” (President Vladimir Putin, December 2014)



RUSSIAN NUCLEAR WEAPONS DEVELOPMENTS

Russia is embarked on a massive strategic modernization program to deploy new nuclear weapons and delivery systems. Since the late 1990s, Russia has developed and deployed:

- two new types of intercontinental ballistic missiles (ICBMs), including a new road-mobile missile and a silo-based variant (Topol-M Variant 2 and Yars);
- a new type of sea-launched ballistic missile (SLBM), the Bulava-30, and two upgraded versions of an existing SLBM (Sineva and Lirer);
- a new class of ballistic missile submarine (Borey);
- modernized heavy bombers, including the Tu-160 (Blackjack) and Tu-95 (Bear); and
- a new long-range strategic cruise missile (Raduga).

Russia is also developing additional strategic nuclear weapons systems, including:

- a new road-mobile ICBM (Rubezh) and a new rail-mobile ICBM (Barguzin);
- a new heavy ICBM (Sarmat) with multiple independently targetable reentry vehicles (MIRVs);
- a new “fifth generation” missile submarine to carry ballistic and cruise missiles; and
- a new stealthy heavy bomber to carry cruise missiles and reportedly hypersonic missiles.



This aggressive modernization program is the beneficiary of a significant influx of fiscal resources. Russian officials have stated that funding the modernization of Russia’s nuclear weapons complex is the nation’s top priority. Despite economic difficulties, Russian leaders have shown no willingness to scale back their extensive nuclear force modernization program.

QUANTITATIVE AND QUALITATIVE ADVANCES

Department of Defense officials cite unclassified estimates that Russia has a total of 4,000-6,500 nuclear weapons. Russian press estimates are frequently higher.

Russia has retained 10 times as many tactical nuclear weapons as NATO, which includes virtually every Cold War tactical nuclear weapon type, despite the United States withdrawing and destroying the vast majority of its tactical nuclear arsenal in the 1990s. Significantly, Russia retains battlefield nuclear weapons that are directly related to deciding the outcome of local and regional wars with which Russia is threatening NATO.

Russia is developing and reportedly deploying new and improved nuclear warheads, including low-yield and low-collateral damage designs.

In December 2010, Yuri Solomonov (chief ICBM and SLBM designer) stated that the single warhead and MIRVed versions of the new Topol-M and Yars ICBMs will get new nuclear warheads by 2016.

Then-Defense
Minister
Sergei Ivanov,
January 2005

“We will develop, improve and deploy new types of nuclear weapons. We will make them more reliable and accurate.”

RUSSIAN NUCLEAR FORCE EXPANSION

In January 2011, during the New START ratification hearings in Moscow, then-Russian Defense Minister Sergei Serdyukov stated Russia intended to increase its nuclear forces. He said, “By all parameters, even missile launchers, we will only reach the level set by the treaty by 2028. As for warheads we will reach [the ceilings] by 2018.”

In March 2015, Russian Foreign Minister Sergey Lavrov changed the timetable: “Our priority under the [New START] treaty is to achieve the limits stipulated for strategic arms and delivery vehicles by 2018.” He did not mention that this means Russia is increasing, not decreasing, the number of its deployed warheads and delivery vehicles that existed at the time of the New START Treaty’s entry into force in February 2011.

Halfway through the New START Treaty reduction period, Russia had increased its numbers in all treaty categories (i.e., deployed warheads, deployed delivery vehicles and deployed and non-deployed delivery vehicles).

Putin has stated Russia will produce 400 new ICBMs by 2020, including 40 MIRVed Yars ICBMs in 2014-2015. The heavily-MIRVed Russian ICBM force will undergo a nearly complete modernization by 2021. Russian press reports indicate that Moscow plans to deploy 46 Sarmat heavy ICBMs and 30 Barguzin rail-mobile ICBMs starting in 2018-2020. Some 50 strategic nuclear missiles (ICBMs and SLBMs) will be put in service in 2015.

NUCLEAR SYSTEMS PRODUCED OR EXPECTED 2009-2019



★ Modification of an existing SLBM; not a new missile

Information extracted from USSTRATCOM Briefing Slide, “Modernization of Strategic Capabilities,” October 17, 2014.

In addition, Russia will have three operational Borey-class ballistic missile submarines in 2015, and will increase this number to eight by 2020. The strategic bomber force is also being upgraded, as are the nuclear armaments these bombers carry.

Because of loopholes that did not exist in the original START Treaty, under New START Russia may actually increase the number of its strategic nuclear warheads to 2,000-2,500 by the early 2020s. The New START bomber weapon counting rule alone allows numbers in this range, as an entire bomber load of weapons counts as only one warhead. Moreover, the New START Treaty does not prohibit the deployment of rail-mobile ICBMs or new heavy ICBMs, which Russia plans to develop and deploy as part of its comprehensive strategic force modernization program.

“Nuclear ambitions in the US and Russia over the last 20 years have evolved in opposite directions. Reducing the role of nuclear weapons in US security strategy is a US objective, while Russia is pursuing new concepts and capabilities for expanding the role of nuclear weapons in its security strategy.”

***National Intelligence Council, Global Trends 2030:
Alternative Worlds, December 2012***

A FORCE FOR INTIMIDATION AND COERCION

Since 2007 Russia has repeatedly made brazen nuclear threats against the United States and its NATO allies in an effort to exert its influence, split the alliance and undermine the U.S. security relationship with its strategic partners. This type of verbal saber-rattling is unprecedented since the Cold War. Examples include the following:

- If Ukraine joins NATO or agrees to host U.S. missile defense assets on its soil, then “Russia... will target its offensive missile systems at Ukraine.” (President Vladimir Putin, February 2008)
- “Poland is making itself a target. This is 100 per cent certain. It becomes a target for attack.” (Gen. Anatoly Nogovitsyn, then-Deputy Chief of Staff, commenting on Poland’s agreement to host U.S. missile defenses, August 2008)
- “I cannot rule out that should the country’s military-political leadership make such a decision, some of our ICBMs could be targeted at missile defense sites in Poland and the Czech Republic, and subsequently at other such facilities.” (Col. Gen. Nikolai Solovtsov, then-Commander of Russia’s Strategic Missile Forces, September 2008)
- Regarding the annexation of Crimea, “We were ready to do this [put nuclear forces on alert].... It was a frank and open position. And that is why I think no one was in the mood to start a world war.” (President Vladimir Putin, March 2015)

- “If Denmark joins the American-led missile defense shield... then Danish warships will be targets for Russian nuclear missiles.” (Mikhail Vanin, Russian Ambassador to Denmark, March 2015)

Russian bombers have penetrated NATO airspace and overflown Japan, and Russian nuclear forces have practiced mock drills involving coordinated strikes against the United States and its allies. As noted, Russia had even seriously considered placing its nuclear weapons on alert during the crisis in Ukraine.

A March 2015 European Leadership Network (ELN) report identified 66 air and maritime incidents involving Russian forces during the prior 12 months, many of which were characterized as “serious” or “high risk.” ELN concluded, “These events add up to a highly disturbing picture of violations of national airspace, emergency scrambles, narrowly avoided mid-air collisions, close encounters at sea, simulated attack runs and other dangerous actions happening on a regular basis over a very wide geographical area.”

With respect to Ukraine, Russia has been particularly threatening. In commenting on the Ukraine crisis, President Putin declared “Let me remind you that Russia is one of the world’s biggest nuclear powers. These are not just words—this is the reality.” In a documentary marking the one-year anniversary of Russia’s annexation of Crimea, Putin noted, “Our nukes are always ready for action.” The former Ukrainian Minister of Defense Col. Gen. Valeriy Heletey commented, “The Russian side has threatened on several occasions across unofficial channels that, in the case of continued resistance they are ready to use a tactical nuclear weapon against us.”

Russia has deployed nuclear-capable Iskander-M missiles to Kaliningrad. In addition, Russia has deployed Backfire bombers and Iskander-M missiles to Crimea, and there are reports that nuclear weapons have been deployed there as well.



RUSSIA’S THREATENING NUCLEAR EXERCISES

Russian nuclear exercises, and the substantial publicity given to them by the Russian government, are unique in the world and appear consistent with their nuclear escalation strategy. The large strategic nuclear exercises are announced by the Kremlin, presided over by the President and involve live missile launches. A main purpose of these exercises is training, but they are also intended to intimidate Russia’s neighbors, the United States, and NATO.

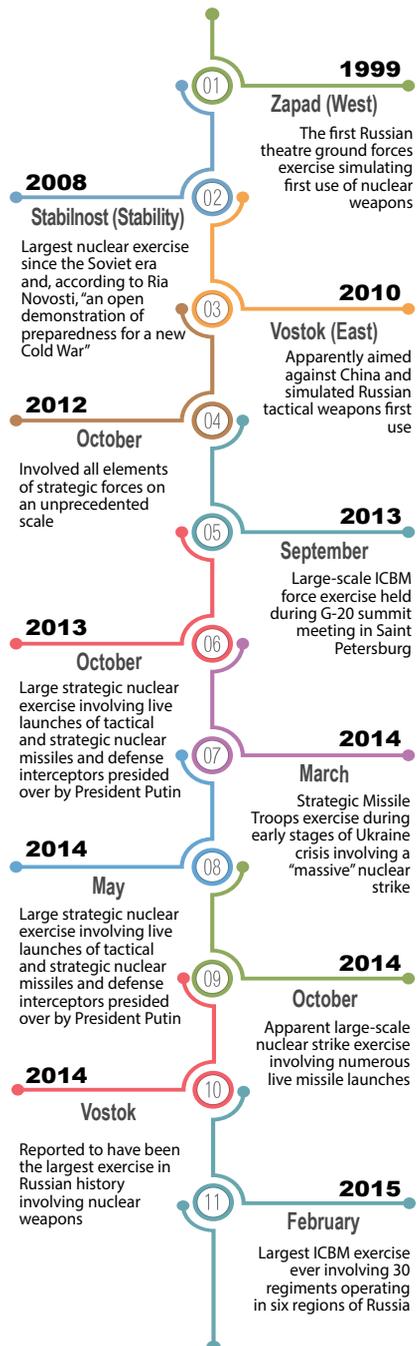
Russia’s nuclear exercises have gotten larger and more frequent since the return of Vladimir Putin to the presidency in 2012. Exercises of all types and what Russia calls “snap drills” have reached astounding levels. Russia says it will conduct 4,000 military exercises in 2015, including 120 involving the ICBM force.

As one expert has observed, “...Russia’s exercises since 2006 conclusively show, Moscow sees nuclear weapons as war fighting weapons to be used offensively.”

RUSSIAN ARMS CONTROL VIOLATIONS

Russia’s arms control behavior is troubling, as it continues to violate its legal obligations. The unfortunate reality is that Russia has violated every significant arms control treaty to which it is a party. For example:

- In August 2014, the U.S. State Department formally declared Moscow to be “in violation of its obligations under the INF [Intermediate-range Nuclear Forces] Treaty not to possess, produce, or flight-test a ground-launched cruise missile (GLCM) with a range capability of 500 km to 5,500 km, or to possess or produce launchers of such missiles.”
- In addition, Russia’s development of the Rubezh “ICBM” - an intermediate-range missile masquerading as an ICBM – violates a Treaty interpretation provided to the U.S. Senate by the Reagan Administration.
- Russia has also violated other agreements, including: the START Treaty; Russian political commitments (the Presidential Nuclear Initiatives or PNIs), including the commitment to eliminate many battlefield tactical nuclear weapons; the Istanbul commitments; the Budapest Memorandum; the Chemical Weapons Convention; the Biological Weapons Convention; and the Helsinki Accords. And, Russia has suspended implementation of the Conventional Forces in Europe (CFE) Treaty.
- Russia has tested a multiple-warhead version of the Topol-M Variant 2 ICBM, despite a START Treaty prohibition against multiple warheads on ICBMs declared to carry single warheads, and has now deployed this MIRVed missile.



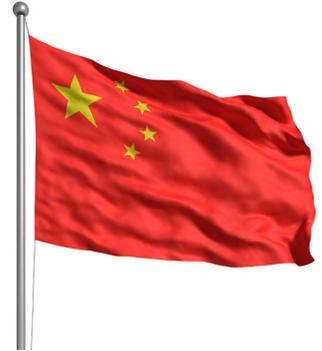
CHINA

CHINA'S STRATEGIC AIMS

The People's Republic of China clearly intends to become the dominant power in the Far East and challenge the U.S. presence in the Asia-Pacific region. China has outstanding territorial disputes with several of its neighbors, including nations that are U.S. friends or treaty partners, such as Japan, South Korea, Taiwan, the Philippines and India.

China has declared an "air defense identification zone" over much of the East China Sea, intended to assert sovereignty over a large ocean area and its associated resources including the Senkaku Islands which are administered by Japan.

China is also precipitating incidents at sea and in the air that have increased tensions and could lead to conflict. This includes the seizing of disputed reefs in the South China Sea and building them into military bases. China also continues to threaten war over Taiwan "independence," including nuclear war.



The threat from China is growing due to a significant increase in Chinese defense spending and the buildup of its military forces with the objective of winning "short-duration, high-intensity regional contingencies." As China's nuclear and conventional powers increase, the risks associated with Chinese expansionism are also likely to grow.

CHINA'S VIEWS OF THE ROLE AND IMPORTANCE OF NUCLEAR FORCES

China's nuclear forces play an important role in Chinese military strategy, which China calls "active defense." (In the West it is generally called an "anti-access/area-denial" strategy.) The Chinese call their nuclear weapons "trump cards." They also refer to them as "assassin's mace," which could defeat a superior enemy.

The Chinese military recently released its white paper titled, "Chinese Military Strategy," which outlined China's nuclear modernization: "China will optimize its nuclear force structure, improve strategic early warning, command and control, missile penetration, rapid reaction, and survivability and protection, and deter other countries from using or threatening to use nuclear weapons against China." The Maoist legacy on nuclear weapons entails the belief that China could survive a nuclear war even if it lost hundreds of millions of people.

While Chinese officials claim to be transparent on the subject of their nuclear forces, they often employ a strategy of intentional "strategic ambiguity" because they see advantages in the lack of transparency.

The U.S. Department of Defense notes that while “China has consistently asserted that it adheres to a ‘no first use’ (NFU) policy... there is some ambiguity over the conditions under which China’s NFU would apply.” For example, in 1996, Chinese U.N. Ambassador Sha Zukang stated, “As far as Taiwan is concerned, it is a province of China, not a state. So the policy of no first use [of nuclear weapons] does not apply.” Indeed, it appears that China states its adherence to a NFU policy solely for declaratory policy purposes.

FLEXING CHINA’S NUCLEAR MUSCLE

While not as blatant or high-level as Russian nuclear threats, Chinese generals and officials have made repeated threats of nuclear weapons first use against the United States since the 1990s.

For example, in 1996, People’s Liberation Army Lt. Gen. Xiong Guangkai, then a deputy chief of the General Staff, made an implied threat to destroy Los Angeles in the event of a conflict over Taiwan. He was also quoted as saying that to prevent Taiwanese independence,

“China was prepared to sacrifice millions of people, even entire cities in a nuclear exchange...” Ten years later he said that if the Taiwanese declared independence, “We will do the business at any cost.”

Pei Shen,
Global Times,
October 2013

“There is not a dense population in the United States’ midwest region, so to increase the destructive effect, the main soft targets for nuclear destruction in the United States will be the main cities on the west coast, such as Seattle, Los Angeles, San Francisco, and San Diego.”

In 2005, at a press conference while the U.S. Secretary of State was visiting Beijing, Maj. Gen. Zhu Chenghu said if the U.S. responded to a Chinese attack on Taiwan with conventional weapons, “I think we will have to respond with nuclear weapons....We Chinese will prepare ourselves for the destruction of all cities east of Xian [a major city in central China]. Of course the American[s] will have to be prepared that hundreds of cities will be destroyed by the Chinese.”

In August 2007, Chinese Maj. Gen. Cai Yuqiu, Vice Principal of the Nanjing Army Command College, said if China was attacked with conventional weapons repeatedly, “then there should not be a limit for our counter-attack.”

In November 2013, several major Chinese state-owned publications ran essentially the same article which depicted nuclear attacks by Chinese ICBMs and SLBMs on major U.S. cities. These articles noted that a single Chinese submarine could cause 5-12 million American casualties and illustrated the aimpoints and the fallout patterns from the attack.

In December 2013, a similar story ran in the state-run Chinese media about the ability of China's long-range bombers to launch nuclear-armed cruise missiles against U.S. bases in South Korea and Japan.

In 2008, China reportedly conducted a major exercise "to simulate a nuclear war." In addition, the bipartisan congressional Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) Attack reported that China has "considered limited nuclear attack options that, unlike their Cold War plans, employ EMP as the primary or sole means of attack."

CHINA'S NUCLEAR AND MISSILE MODERNIZATION PROGRAMS

After the end of the Cold War, China accelerated development and deployment of new and improved strategic and theater nuclear weapons and their delivery systems. Chinese nuclear modernization is an element of a much broader military modernization program that is aimed "at winning short-duration, high-intensity conflicts against high-tech adversaries..." – considered to be the United States and its Asian allies.



The number of Chinese nuclear weapons has long been disputed due to China's deliberate policy of opacity. Current estimates range from a few hundred to 3,000 or more.

China has the largest ballistic missile program in the world today. There are at least 18 types and variants of Chinese theater-range (short-, medium- and intermediate-range) ballistic missiles, four types of ICBMs and two types of SLBMs that are operational or under testing.

China has at least 1,200 short-range ballistic missiles (SRBMs), 200-500 ground-launched cruise missiles, (GLCMs), 75-100 medium-range ballistic missiles (MRBMs), 20 intermediate-range ballistic missiles (IRBMs) and 50-60 ICBMs. Various Chinese missiles are nuclear-armed, dual-capable (carry nuclear or conventional warheads) or conventional.

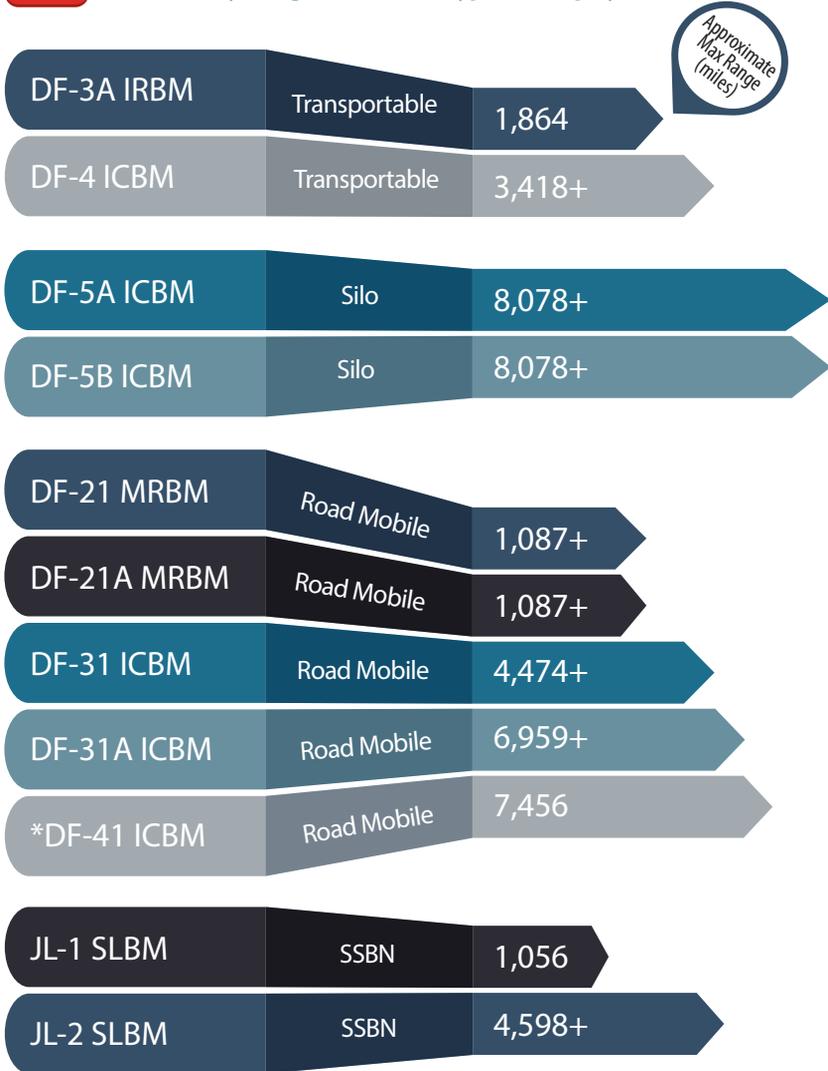
The 2015 Department of Defense report on Chinese military power states:

"...[China] is developing and testing several new classes and variants of offensive missiles, including hypersonic glide vehicles...[and] continues to modernize its nuclear forces by enhancing its silo-based intercontinental ballistic missiles (ICBMs) and adding more survivable, mobile delivery systems."



CHINA'S NUCLEAR BALLISTIC MISSILES

Identified by Designator/Missile Type and Deployment Method



Source: U.S.-China Economic and Security Review Commission, 2014 Report to Congress, pp. 319-321

* Not yet deployed

New nuclear-armed ICBMs and SLBMs now deployed, or which are being deployed, include:

- two silo-based variants of the large DF-5 (CSS-4) — the improved Mod 2 and the MIRVed Mod 3;
- road-mobile DF-31 and DF-31A (CSS-10 Mod 1 and 2) ICBMs; and

- the new JL-2 SLBM carried by a new type of submarine (Type 094), which is now becoming operational. Four of eight planned Type 094 submarines are now operational.

China also has a number of strategic nuclear systems reportedly under development, including:

- an improved ICBM called the DF-31B;
- a large ten warhead DF-41 mobile ICBM;
- a new type of ballistic missile submarine (Type 096); and
- a MIRVed SLBM sometimes referred to as a variant of the JL-2 or the JL-3.

In addition, the Chinese air force has nuclear-capable, long-range bombers and is introducing an improved version, which carries a long-range nuclear capable cruise missile.

China is also developing theater missiles that are nuclear-armed or nuclear-capable. These include:

- a new nuclear-capable anti-carrier ballistic missile;
- a new nuclear-capable, 4,000-km range IRBM;
- a nuclear-armed hypersonic boost glide vehicle;
- a nuclear-capable GLCM; and
- a new nuclear-capable MRBM.

NORTH KOREA

NORTH KOREA'S STRATEGIC AIMS

North Korea (the Democratic People's Republic of Korea) is a highly militarized, hereditary, Stalinist-type dictatorship.

In addition to sustaining the Kim family dictatorship, North Korea's central objectives are to be given the deference due to a "great power" and to reunify Korea under its control. Underpinning these objectives is its military might, which includes nuclear weaponry and one of the world's largest standing armies.

Under its "military first" policy, 30 percent of the North Korean Gross National Product (GNP) goes to the military. Despite the perception by some in the West that Pyongyang would never contemplate nuclear aggression, the North Korean leadership appears at times eccentric and erratic, and the belief that it will always be effectively deterred from taking radical actions cannot be confidently assumed. North Korea is a serious threat not because it could win a war against South Korea and the United States, but because it could kill millions of people with weapons of mass destruction (WMD) in the process of losing one. That number is likely to increase dramatically as North Korea increases its nuclear capability.

THE ROLE AND IMPORTANCE OF NUCLEAR FORCES IN NORTH KOREA'S STRATEGY

North Korea possesses nuclear, chemical and biological weapons. Nuclear weapons are of central importance to the regime in Pyongyang.

As then-Director of the Defense Intelligence Agency Lt. Gen. Michael Flynn stated in 2014, "Because of its conventional military deficiencies, North Korea also has concentrated on improving its deterrence capabilities, especially its nuclear technology and ballistic missile forces." He said further that in 2013 the "Supreme Leader" Kim Jong Un announced a strategy "of simultaneously pursuing the production of nuclear weapons and the development of the national economy."

North Korea sees its security, national pride and self-esteem as critically linked to its nuclear weapons. According to the U.S. Defense Department, it sees its "nuclear weapons and missile capability as essential to its goals of survival, sovereignty, and relevance."



Because of the extreme secrecy of North Korea, Pyongyang's nuclear doctrine and employment concepts are matters of speculation. However, North Korea can inflict mass casualties in the event of conflict. Thus, it seeks to "leverage the perception of a nuclear deterrent to counter technologically superior forces." This includes threats of nuclear attack.

NORTH KOREAN NUCLEAR THREATS AND EXERCISES

Nuclear threats against the United States and its allies are commonplace in the North Korean state media. For over a decade, North Korea has been threatening to turn the capital cities of its neighbors into a "sea of nuclear fire."

This includes threats of nuclear attack on the U.S. homeland and allies, a verbal declaration of war, a statement that the 1953 Korean War armistice has been terminated and that nuclear launch authority has been given to the military.

In January 2014, North Korea's new leader Kim Jong Un said, "the Korean peninsula would be engulfed by 'massive nuclear disaster' if war breaks out," warning the United States that "it will not be safe in the event of a conflict." And in August 2014, North Korea claimed that the United States was staging a nuclear war game in the south and threatened to "decisively respond with nuclear [weapons]" and that the U.S. homeland "will not remain safe."

In addition to the United States, North Korea sees South Korea as its enemy, against which it conducts routine exercises. While those exercises are constrained by economic limitations, North Korea's training has recently exhibited more realism. Usually the North Korean regime is secretive about its exercises, but when expedient, it will talk about military preparations for a nuclear strike. Nuclear threats are sometimes made in the context of the North Korean leader observing or directing military exercises.

NORTH KOREAN NUCLEAR WEAPONS AND BALLISTIC MISSILES

North Korea has had nuclear weapons in small numbers for years, in violation of the Nuclear Nonproliferation Treaty (until its withdrawal from the treaty in 2003). North Korea is also assessed to have ballistic missile-deliverable nuclear weapons. North Korea has staged three announced and possibly five nuclear tests. According to General Jung Seung-jo, the Chairman of the South Korean Joint Chiefs of Staff, the third announced test was probably a "boosted fission weapon," a significant advance in nuclear weapons technology allowing smaller, higher-yield weapons.

Due to the restart of North Korea's nuclear reactor at Yongbyon and its expanding program to produce highly-enriched uranium, the North Korean nuclear arsenal may increase to 20 weapons in 2016 and possibly 100 weapons by 2020.

It is believed North Korea seeks an arsenal of 100-200 weapons by 2020.

North Korea has an extensive missile program ranging from short-range Scud missiles to ICBMs. Among its most important missiles are:

- various versions of the Scud SRBM;
- the No Dong MRBM;
- the BM-25 Musudan IRBM;
- the Taepo Dong-2 ICBM/space launch vehicle which has sent a satellite into orbit; and
- the KN-08 mobile ICBM.

All of these missiles are deployed or rapidly deployable for launch. North Korea is believed to have the capability to threaten the U.S. mainland. In 2013, Director of National Intelligence James R. Clapper, Jr. reported that North Korea has "already taken initial steps...towards fielding this system [the KN-08 road-mobile ICBM], although it remains untested." In April 2015, Commander of US North American Aerospace Defense Command Admiral William Gortney said, "Our assessment is that they have the ability to put a nuclear weapon on a KN-08 [ballistic missile] and shoot it at the homeland. We assess that it's operational today, and so we practice to go against it."

In May 2015, North Korea announced that it had successfully launched an SLBM from a submarine. Photographs released by North Korea suggest the missile was based on the Musudan IRBM.

North Korea is believed to have 200 mobile missile launchers, including 50 for No Dong missiles and 50 for the Musudan intermediate-range missiles. The North

Korean missile inventory was assessed to comprise 800 missiles in 2008 and is reportedly 1,000 today.

IRAN

IRAN'S STRATEGIC AIMS

Iran is an authoritarian theocracy with strong anti-Western sentiments. It seeks to dominate the Persian Gulf region and calls for the destruction of the “Great Satan” (the United States) and the “little Satan” (Israel).

Tehran denies any effort to obtain nuclear weapons. Nevertheless, Iran’s neighbors are seriously concerned about Iran’s prospective acquisition of the required technology. If Iran tests a nuclear weapon or announces that it has such a capability, it could result in a proliferation “cascade” in the Middle East.



While North Korea occasionally launches military attacks on South Korea, Iran supports international terrorist attacks on a routine basis. Terrorism is a tool Iran uses to pursue its broader objectives.

Because of the radical views of the Iranian clerical leadership there is a possibility that deterrence will fail. Thus, preventing an Iranian nuclear capability is the West’s stated objective.

IRAN'S VIEWS OF NUCLEAR WEAPONS

Iran denies it is working to obtain nuclear weapons despite the fact that it has had a substantial nuclear weapons development program since the late 1980s. The Iranian nuclear program is not driven by the need for nuclear energy, as more traditional sources of energy are abundant.

Iran has the largest ballistic missile force in the Middle East. By 2005, Iran had acquired chemical and biological weapons in violation of relevant international conventions.

The possession of nuclear weapons would permit more aggressive Iranian support of terrorism, which is already extensive. It would also provide Tehran a tool for coercion against its perceived enemies, while seeking to deter U.S. or allied actions.

IRANIAN MISSILE EXERCISES

Since Iran denies it has a nuclear weapons program, it does not make overt nuclear threats. However, Iran conducts large military exercises, which include missile launches. These are given considerable publicity, although coverage has been toned down by President Hasan Rouhani. These exercises have involved salvo launches of ballistic missiles, including launches of the Shahab-3 medium-range missile for which there is reportedly evidence of a nuclear warhead program.

In December 2014, the Iranians conducted a “massive” military exercise which it said involved ballistic missiles. Tehran said it was the largest exercise ever conducted by Iran. In February 2015, Iran staged an exercise that involved cruise missile and ballistic missile attacks on a replica of a U.S. aircraft carrier.

IRAN’S NUCLEAR AND MISSILE PROGRAMS

Iran has substantial programs underway aimed at achieving a long-range nuclear strike capability. Due to years of cooperation with North Korea, Iran’s nuclear and missile programs are probably considerably more advanced than might be the case for a purely indigenous program.

Moreover, according to *The New York Times*, a senior Obama administration official concluded the third announced North Korea nuclear test was possibly “testing for two countries.” In September 2012, Iranian and North Korean leaders signed an agreement which committed the two countries to share valuable scientific and technology information. Iran’s Supreme Leader Ayatollah Ali Khamenei said at the time of the signing that the two countries had, “common enemies.”

In November 2009, the London-based *Guardian* newspaper reported that the International Atomic Energy Agency (IAEA) had concluded “...that Iranian scientists have experimented with an advanced nuclear warhead design” known as “a two-point implosion device,” which allowed smaller nuclear warheads. Iran reportedly obtained a Pakistani nuclear warhead design from Pakistani nuclear scientist A.Q. Khan and was attempting to shrink it.



Iran also has a very extensive program for enriching uranium, which may continue under the proposed framework for a Joint Comprehensive Plan of Action on Iran’s Nuclear Program. As former U.S. Secretaries of State Henry Kissinger and George Shultz noted in April 2015, “Under the proposed agreement, for 10 years Iran will never be further than one year from a nuclear weapon and, after a decade, will be significantly closer.” Moreover, this does not even assume Iranian cheating on the agreement, which cannot be discounted in light of verification problems and previous Iranian behavior. Indeed, the end of sanctions against Iran could provide critical resources for more covert nuclear weapons activities.

Iran has an extensive program for the development and deployment of ballistic missiles, ranging from short-range missiles to ICBMs. Iranian missile programs include:

- SRBMs such as the Zalzal-2, Fatah-110, Scud-B and Scud-C;
- MRBMs such as the mobile Shahab-3 (based on the North Korean No Dong and a solid-fuel missile);
- Shahab-3 derivative called the Safir, which has been used to send satellites into orbit;
- a number of BM-25 Musudan IRBMs, reportedly acquired from North Korea; and
- a derivative of the North Korean TD-2 ICBM, the Simorgh missile, which Iran says will be used for space launch.

Iran's ballistic missiles are inherently capable of delivering WMD. Iran is also seeking to improve its missiles' accuracy and has flight-tested missiles of increasing range.

CONCLUSION

As the Cold War recedes further into history, the nuclear threats posed by others to the United States and the West have not. In fact, the opposite appears to be the case.

Russia places the highest priority on nuclear weapons because it believes that its status as a "great power" is based upon them. Russia's statements on nuclear policy, its official doctrine, its extensive across-the-board strategic modernization programs, its direct nuclear threats against others, its unprecedented level of Cold War-type strategic exercises, and its violation of nuclear arms control agreements all suggest a troubling and dangerous move toward a more aggressive overall nuclear posture for the foreseeable future. The implications of these actions, coupled with Russia's increasingly belligerent behavior on the world stage and willingness to use military force – such as its annexation of Crimea, invasion of Ukraine, and incursions into the sovereign airspace of other countries – threaten the very foundations of peace and stability and challenge the notion that Russia can be a reliable partner in ensuring a tranquil world in the 21st century.

While many in the West believe that the end of the Cold War has meant the end of a confrontational and adversarial relationship with Russia, recent events suggest this hoped-for outcome is more the result of wishful thinking than of a sober and realistic assessment of the current geostrategic environment. Under these circumstances, the possibility that Russia may trigger events leading to their actual use of nuclear weapons cannot be dismissed out of hand. Senior Russian officials, including President Putin, have threatened that NATO allies may be targets for Russian nuclear forces, and President Putin has suggested he would have used nuclear weapons, if necessary, in the Russian invasion of Crimea. The invasion of a Baltic state comparable to Russia's military action against Ukraine would trigger

Article V of the NATO Treaty, which declares “an armed attack against one” will be considered “an armed attack against them all.”

Likewise, China has adopted an increasingly belligerent stance in global affairs, challenging the territorial sovereignty of its neighbors and U.S. regional allies while expanding the military means for implementing its strategic objectives – including enhancing its nuclear arsenal both quantitatively and qualitatively. Beijing appears increasingly reliant on its nuclear forces to underpin its aggressive behavior, with increasing concerns in the West about its adherence to the carefully-calibrated policy of “no first use” on issues it considers to be of the utmost national importance.



North Korea’s militarized state, coupled with its seemingly erratic and eccentric leadership, poses a significant threat to U.S. allies as well as the U.S. homeland. North Korea’s nuclear programs are ongoing, and its continuing development of capabilities to launch nuclear weapons on ballistic missiles of sufficient range to travel intercontinental distances is a cause of serious concern. And, with North Korea’s help, Iran’s clerical leadership appears bent on achieving a nuclear weapons capability that can successfully threaten U.S. allies and deter the United States from acting to protect its own interests in the region.

Although the goal of a nuclear weapons-free world remains official U.S. and British policy and has the support of a number of Western leaders, that goal appears further from reality than ever. The growing emphasis and reliance that others appear to place on nuclear weapons as tools of coercion and intimidation – not to mention the possibility of their actual use in conflict – suggest that continued pursuit of a “nuclear zero” option may be both unrealistic and counterproductive.

Proposals by some in the West, particularly in the United States, to eliminate ICBMs (moving from a strategic nuclear triad to a dyad), eliminate all U.S. non-strategic nuclear forces, and substantially reduce investment in nuclear modernization programs, appear to ignore the greater emphasis placed by others on nuclear weapons and their relative importance as a counter to U.S. conventional force dominance, a deterrent to U.S. military actions, and an enabler of their own aggressive policies.

All of this suggests that the nuclear postures of the East and the West are on divergent paths. This cannot bode well for the continued functioning of deterrence in an increasingly uncertain and dangerous world. Western policy makers should take heed of these developments as they craft national security policies appropriate to the challenges and threats of the 21st century.



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