**North Korea and Weapons of Mass Destruction**

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| **North Korea** | |
| [Location of North Korea](http://en.wikipedia.org/wiki/File:Locator_map_of_North_Korea.svg) | |
| **Nuclear program start date** | 1956 |
| **First nuclear weapon test** | October 9, 2006 |
| **Last nuclear test** | May 25, 2009 |
| **Largest yield test** | 2~6 kt (The yield is disputed. The North-Korean government never announced the exact yield.) |
| **Total tests** | 2 |
| **Current stockpile** | 6–8 nuclear weapons (estimated) |
| **Maximum missile range** | 4,000 km (BM25 Musudan) |
| **NPT signatory** | *Yes*, but withdrew in 2003 |

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| Weapons of mass destruction |
| [WMD world map](http://en.wikipedia.org/wiki/File:WMD_world_map.svg) |
| **By type** |
| Biological, Chemical, Nuclear, Radiological |
| **By country** |
| |  |  | | --- | --- | | Albania Algeria Argentina Australia Brazil Bulgaria Burma Canada China (PRC) France Germany India Iran Iraq Israel Japan | Libya Mexico Netherlands **North Korea** Pakistan Poland Romania Russia Saudi Arabia South Africa Sweden Syria Taiwan (ROC) Ukraine United Kingdom United States | |
| **Proliferation** |
| Biological, Chemical, Nuclear, Missiles |
| **Treaties** |
| List of treaties |
| **Wikipedia bookBook ·Category Category** |
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| **Nuclear weapons** |
|  |
| History Warfare Arms race Design Testing Effects Delivery Espionage Proliferation Arsenals Terrorism Opposition |
| Nuclear-armed states |
| United States · Russia United Kingdom · France China · India · Israel Pakistan · **North Korea** South Africa (former) |
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| **North Korea and weapons of mass destruction** |
| [North Korea and weapons of mass destruction](http://en.wikipedia.org/wiki/File:North_Korea_nuclear.svg) |
| Events  Missile tests  1993  1998  2006  2009  2006 nuclear test  2009 nuclear test  Weapons  Taepodong-1  Taepodong-2  See also  Musudan-ri  Ryanggang explosion  Yongbyon  Korean People's Army  Songun |
|  |

North Korea (officially the Democratic People's Republic of Korea or DPRK) has declared that it has nuclear weapons and is believed by many to have nuclear weapons. The CIA assesses that North Korea also has a substantial arsenal of chemical weapons. North Korea was a party to the Nuclear Non-Proliferation Treaty but withdrew in 2003, citing the failure of the United States to fulfill its end of the Agreed Framework, a 1994 agreement between the states to limit North Korea's nuclear ambitions, begin normalization of relations, and help North Korea supply some energy needs through nuclear reactors.

On October 9, 2006, the North Korean government issued an announcement that it had successfully conducted a nuclear test for the first time. Both the United States Geological Survey and Japanese seismological authorities detected an earthquake with a preliminary estimated magnitude of 4.3 in North Korea, corroborating some aspects of the North Korean claims.

In April 2009, reports surfaced that North Korea has become a "fully fledged nuclear power", an opinion shared by IAEA Director General Mohamed ElBaradei. On May 25, 2009, North Korea conducted another nuclear test, which is believed to have been the cause of a magnitude 4.7 seismic event. Although there is no official information about the test's location, it is believed that it happened in the north-eastern region near Kilju, the site of North Korea's first nuclear test.

**Nuclear weapons**

**Background**

Korea has been a divided country since 1945, when it was liberated from the defeated Japan after World War II. The Korean War was fought from June 25, 1950, until an Armistice Agreement was signed on July 27, 1953. As part of the Armistice, both sides, including U.S. forces, conduct military patrols within the Korean Demilitarized Zone (DMZ).

Tensions between North and South have run high on numerous occasions since 1953. The deployment of the U.S. Army's Second Infantry Division on the Korean peninsula and the American military presence at the DMZ are publicly regarded by North Korea as an occupying army. In several areas, North Korean and American/South Korean forces operate in extreme proximity to the border, adding to tension. This tension has led to numerous clashes, including the Axe Murder Incident of 1976.

According to newly declassified documents from the archives of former communist allies of North Korea, Pyongyang first began to pursue nuclear technology as early as 1956. In the early 1960s security concerns in the region and an apparent Soviet dismissal of these concerns hastened the DPRK's efforts to acquire the technology to produce nuclear weapons. In the wake of the student-led April 19 movement in 1960 that overthrew the South Korean president Rhee Syngman and the May 16, 1961, military coup d'état that brought General Park Chung-hee to power in the south, North Korea sought a mutual defense treaty with the Soviet Union and China.

Soviet leaders reportedly did not even consider such a pact necessary, despite the military posture of the anti-communist Park regime, as long as the Soviets improved relations with the United States.

Perhaps the two most important factors in North Korea's attempts to obtain nuclear weapons and become militarily self-reliant were the Cuban Missile Crisis of October 1962 and the prospect of a US–Japan–ROK alliance following the 1965 establishment of diplomatic relations between the ROK and Japan. Kim Il-sung reportedly did not trust that the Soviets would live up to the conditions of the mutual defense pact and guarantee North Korea's security since they betrayed Castro by withdrawing nuclear missiles in an effort to improve relations with the United States. As a North Korean official explained to Soviet Premier Alexei Kosygin in 1965, "the Korean leaders were distrustful of the CPSU and the Soviet government, they could not count on that the Soviet government would keep the obligations related to the defense of Korea it assumed in the Treaty of Friendship, Cooperation and Mutual Assistance, Kim Il-sung said, and therefore they were compelled to keep an army of 700,000 and a police force of 200,000." In explaining the cause of such mistrust, the official claimed that "the Soviet Union had betrayed Cuba at the time of the Caribbean crisis." However, as recently declassified Russian, Hungarian, and East German materials confirm, no communist governments were willing to share the technology with the North Koreans, out of fear that they would share the technology with China.

With the collapse of the Soviet Union, North Korean leaders recognized the need for a new security relationship with a major power since Pyongyang could not afford to maintain its military posture. North Korean leaders therefore sought to forge a new relationship with the United States, the only power strong enough to step into the vacuum left by the collapse of the Soviet Union. From the early 1990s, throughout the first nuclear crisis, North Korea sought a non-aggression pact with the United States.

The U.S. rejected North Korean calls for bilateral talks concerning a non-aggression pact, and stated that only six-party talks that also include the People's Republic of China, Russia, Japan, and South Korea are acceptable. The American stance was that North Korea had violated prior bilateral agreements, thus such forums lacked accountability. Conversely, North Korea refused to speak in the context of six-party talks, stating that it would only accept bilateral talks with the United States. This led to a diplomatic stalemate.

On October 9, 2006, the North Korean government issued an announcement that it had successfully conducted a nuclear test for the first time. Both the United States Geological Survey and Japanese seismological authorities detected an earthquake with a preliminary estimated magnitude of 4.3 in North Korea, corroborating some aspects of the North Korean claims.

On November 19, 2006, North Korea's *Minju Joson* newspaper accused South Korea of building up arms in order to attack the country, claiming that "the South Korean military is openly clamoring that the development and introduction of new weapons are to target the North." Pyongyang accused South Korea of conspiring with the United States to attack the isolated and impoverished state, an accusation made frequently by the North and routinely denied by the U.S. The United Nations Security Council condemned the test in Resolution 1874.

On May 25, 2009, North Korea conducted a second test of a nuclear weapon at the same location as the original test (not confirmed). The test weapon was of the same magnitude as the atomic bombs dropped on Japan in the 2nd World War, (confirmed South Korea and Russia). At the same time of the test North Korea tested two short range missiles (reported a South Korean News Network YTN – not officially confirmed).

In July 2011, Abdul Qadeer Khan, the key figure in Pakistan's nuclear weapons development, allegedly claimed that North Korea had gained access to Pakistan's nuclear technology in the late 1990s by paying bribes to Pakistan's senior military officials, a claim Pakistan's senior officials disputed. Khan stated that he had personally helped transfer $3 million in gratuities to senior Pakistan's military officers, though he neither provided any proofs to his claims.

**Chronology of events**

Main article: Timeline of North Korea nuclear program

**Plutonium**

[](http://en.wikipedia.org/wiki/File:Yongbyon_5MWe_Magnox_reactor.jpg)

5 MWe experimental reactor at Yongbyon Nuclear Scientific Research Center

North Korea has had two operating reactors, both located at the Yongbyon Nuclear Scientific Research Center. The older reactor is a Russian supplied IRT-2000 research reactor completed in 1967. Uranium irradiated in this reactor was used in North Korea's first plutonium separation experiments in 1975. Nevertheless, the primary purpose of the reactor is not to produce plutonium and North Korea has had trouble acquiring enough fuel for constant operation. The U.S. Department of Energy estimated that this reactor could have been used to produce up to 1–2 kg of plutonium, though the Joint Atomic Energy Intelligence Committee said that the amount was no more than a few hundred grams.

North Korea's main reactor, where practically all of its plutonium has been produced, is a 5MWe gas-graphite moderated Magnox type reactor. A full core consists of 8,000 fuel rods and can yield a maximum of 27–29 kg of plutonium if left in the reactor for optimal burnup. Often, North Korea has unloaded the reactor before reaching the maximum burnup level. There are three known cores which were unloaded in 1994 (under IAEA supervision in accordance with the Agreed Framework), 2005, and 2007. A secret core, Core 0, may have been unloaded between 1989 and 1990 and verification is needed to confirm North Korean claims that such an unloading or partial unloading did not take place. Under normal operation, the reactor can produce about 6 kg of plutonium per year although the reactor would need to be shut down and the fuel rods extracted to begin the plutonium separation process. Hence, plutonium separation takes place in campaigns. Reprocessing (also known as separation) is known to have taken place in 2003 for the first core and 2005 for the second core. The reprocessing of the third core was halted by the six party talks and resumption will be delayed due to the disablement efforts.

North Korea also had two additional graphite moderated reactors being built, but that have since become unsalvageable since maintenance of their construction sites was not allowed under the Agreed Framework. The first of these two partially constructed reactors was also in the Yongbyon Nuclear Scientific Research Center. It was to be 50MWe and able to produce 60 kg of plutonium per year, enough for approximately 10 weapons. The second partially constructed reactor was in nearby Taechon. It was to be 200 MWe and able to produce roughly 220 kg of plutonium annually, enough for approximately 40 weapons.

On March 12, 1993, North Korea said that it planned to withdraw from the Nuclear Non-Proliferation Treaty (NPT) and refused to allow inspectors access to its nuclear sites. By 1994, the United States believed that North Korea had enough reprocessed plutonium to produce about 10 bombs with the amount of plutonium increasing. Faced with diplomatic pressure after UN Security Council Resolution 825 and the threat of American military air strikes against the reactor, North Korea agreed to dismantle its plutonium program as part of the Agreed Framework in which South Korea and the United States would provide North Korea with light water reactors and fuel oil until those reactors could be completed. Because the light water reactors would require enriched uranium to be imported from outside North Korea, the amount of reactor fuel and waste could be more easily tracked, making it more difficult to divert nuclear waste to be reprocessed into plutonium. However, with bureaucratic red tape and political obstacles from the North Korea, the Korean Peninsula Energy Development Organization (KEDO), established to advance the implementation of the Agreed Framework, had failed to build the promised light water reactors because the United States failed to uphold their end of the agreement by providing energy aid, and in late 2002, North Korea returned to using its old reactors.

In 2006, there were eight sites identified as potential test explosion sites for current (and future) tests according to a statement by the South Korean Parliament. These sites are distinguished from a number of other nuclear materials production facilities in that they are thought to be most closely identified with a military, or potentially military purpose:

1. Hamgyong Bukdo (North Hamgyong) Province – 2 Sites:

* Chungjinsi – Nuclear fuel storage site, military base & unidentified underground facility
* Kiljugun – Extensive military buildup with motorized troop formations and construction of new advanced underground facility – Site of May 25, 2009 Nuclear Test.
* Phunggyere – Site of October 9, 2006 Nuclear Test

2. Chagangdo Province – 1 Site: Kanggyesi – Production center of North Korea's advanced equipment & munitions since 1956. Also, extensive intelligence of highly advanced underground facility.

3. Pyongan Bukdo (North Pyongan) Province – 4 Sites:

* Yongbyonsi – 2 Sites – Location of Yongbyon Nuclear Research Center, and the facility's Experimental Test Explosion facility and two unidentified underground facilities. In addition, there is a gas-graphite reactor, HE test site, nuclear fuel fabrication site, nuclear waste storage site
* Kusungsi – Between 1997 and September 2002, approximately 70 text explosions of North Korean munitions took place. Also, existence of underground facility
* Taechongun – 200MWe Nuclear Energy Plant construction site. Location of unidentified underground facility and nuclear arms/energy related facilities known to exist

4. Pyongan Namdo (South Pyongan) Province – 1 Site: Pyongsungsi – Location of National Science Academy and extensive underground facility whose purpose is not known.

**Enriched uranium and foreign assistance**

With the abandonment of its plutonium program, U.S. officials claimed North Korea began an enriched uranium program. Prime minister Benazir Bhutto of Pakistan, allegedly, through Pakistan's former top scientist, Dr. Abdul Qadeer Khan, supplied key data, stored in CDs, on uranium enrichment and information to North Korea in exchange for missile technology around 1990–1996, according to U.S. intelligence officials. President Pervez Musharraf and Prime minister Shaukat Aziz acknowledged in 2005 that Khan had provided centrifuges and their designs to North Korea. On May 30, 2008, ABC News reported that Khan, who previously confessed to his involvement with Iran and North Korea, now denies involvement with the spread of nuclear arms to those countries. He claimed in an interview with ABC News that the *Pakistan Government, under Shaukat Aziz, and President Pervez Musharraf forced him to be a "scapegoat" for the "national interest"*. He also denied ever traveling to Iran or Libya, and claimed that North Korea's nuclear program was well advanced before his visit.

This program was publicized in October 2002 when the United States asked North Korean officials about the program. Under the Agreed Framework, North Korea explicitly agreed to freeze plutonium programs (specifically, its "graphite moderated reactors and related facilities"). The agreement also committed North Korea to implement the Joint Declaration on the Denuclearization of the Korean Peninsula, in which both Koreas committed not to have enrichment or reprocessing facilities. The United States argued North Korea violated its commitment not to have enrichment facilities.

In December 2002, the United States persuaded the KEDO Board to suspend fuel oil shipments, which led to the end of the Agreed Framework. North Korea responded by announcing plans to reactivate a dormant nuclear fuel processing program and power plant north of Pyongyang. North Korea soon thereafter expelled United Nations inspectors and withdrew from the Non-Proliferation Treaty.

In 2007 reports emanating from Washington suggested that the 2002 CIA reports that North Korea was developing uranium enrichment technology had overstated or misread the intelligence. U.S. officials were no longer making this a major issue in the six-party talks.

WikiLeaks has dropped a bombshell cache of U.S. diplomatic cables, ripping the cloak off scores of secret deals, including clandestine North Korean support for Iran and the North Korea, now embroiled in a knife’s edge confrontation with South Korea and the United States, was able to smuggle 19 advanced, Russian-designed missiles, capable of delivering nuclear payloads, to Iran, according to a February 24, 2010 cable detailing a meeting between Russian officials and a State Department nonproliferation expert. The shipment of some R-27 components was widely known in intelligence circles, but the WikiLeaks disclosures represent the first confirmation that Iran now possesses complete missile systems.

**North Korea – United States relations**

Main article: North Korea – United States relations

Under the 1994 Agreed Framework, the U.S. government agreed to facilitate the supply of two light water reactors to North Korea (which were never completed) . Such reactors are considered "more proliferation-resistant than North Korea's graphite-moderated reactors," but not "proliferation proof." The Swiss based company ABB in 2000 signed a $200 million contract to deliver equipment and services for two nuclear power stations at Kumho, on North Korea's east coast. Donald Rumsfeld, who later became the U.S. Secretary of Defense, was on the board of ABB when it won this deal, but a Pentagon spokeswoman, Victoria Clark, said that Rumsfeld did not recall it being brought before the board at any time.

Even though U.S. President George W. Bush had named North Korea as part of an "Axis of Evil" following the September 11, 2001 attacks, U.S. officials stated that the United States was not planning any immediate military action.

According to John Feffer, co-director of the Foreign Policy in Focus, in 2006

The primary problem is that the current U.S. administration fundamentally doesn’t want an agreement with North Korea. The Bush administration considers the 1994 Agreed Framework to have been a flawed agreement. It doesn’t want be saddled with a similar agreement, for if it did sign one, it would then be open to charges of "appeasing" Pyongyang. The Vice President has summed up the approach as: "We don’t negotiate with evil; we defeat evil."

American ire at North Korea was further inflamed by allegations of state-sponsored drug smuggling, money-laundering, and wide-scale counterfeiting.

Diplomatic efforts at resolving the North Korean situation are complicated by the different goals and interests of the nations of the region. While none of the parties desire a North Korea with nuclear weapons, Japan and South Korea are especially concerned about North Korean counter-strikes following possible military action against North Korea. The People's Republic of China and South Korea are also very worried about the economic and social consequences should this situation cause the North Korean government to collapse.

**Nuclear deterrence**

Former South Korean Government sources, as well as some scholars and analysts, have argued that North Korea is using nuclear weapons primarily as a political tool to begin re-establishing normal relations with the U.S., Japan and South Korea, and to end the long-standing economic embargo against North Korea. They point out that the threat of nuclear weapons is the only thing that has brought the U.S., Japan and South Korea into serious negotiations. In a lecture in 1993, Bruce Cumings asserted that based on information gathered by the CIA, the activity around the Yongbyon facility may have been done expressly to draw the attention of U.S. satellites. He also pointed out that the CIA had not claimed North Korea had nuclear weapons, but that they had enough material to create such weapons should they choose to do so. Others argue that North Korea is developing nuclear weapons for the same reason most other countries develop them—namely to give their nation a sense of power in the world, enabling them to further their goals without fear of reprisal.

Further to this argument is the observation that many parties have a vested interest in the claim that North Korea has nuclear weapons. For North Korea, it has been a bargaining tool for opening diplomatic discussions. The nuclear development program can be manipulated in exchange for foreign aid. Nuclear posturing has also been seen as a threat that could force the re-unification of the Korean peninsula. The Grand National Party, currently the ruling party in South Korea, have stated that they will not return to the Sunshine policy before North Korea gives up their nuclear weapons. South Korean newspapers have warned that North Korea's nuclear arsenal could destroy South Korea's conventional forces, and that the strategic military balance has irrevocably shifted in the aftermath of North Korea's nuclear test. Finally, the threat of a nuclear-armed North Korea has fed South Korea's perceived need for a larger standing army and defense force.

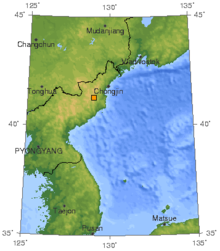
Some LDP politicians in Japan have openly expressed a desire to change Article 9 of the Japanese Constitution, which prohibits the use of force as a tool for resolving international disputes. This desire has become increasingly relevant given the ability of North Korea's Rodong-1 missile to strike Tokyo, and it has gained increasing support as a result. Some estimates have claimed that as many as 3 of the 200 Rodong-1 missiles currently deployed may be fitted with nuclear warheads. Further fears about North Korea's ability to generate weapons-grade fissile materials in its projected civilian nuclear reactors have led to the consideration of the threat posed by the entire Rodong-1 missile fleet being armed with nuclear warheads and targeted on the Japanese home islands. (The missiles are able to cover 90% of Japanese territory. Moreover, their accuracy is so poor that they are only valid delivery systems when targeted on very large military installations or cities.)

Because it is impossible to be certain of shooting down every ballistic missile, it is preferable to ensure that the weapons cannot be manufactured in the first place. An attack on a plutonium production reactor, such as that carried out by the Israelis on the Iraqi reactor complex at Osirak (Operation Opera), may prevent or delay later nuclear attacks, though such an act could be seen as an act of war and subject to retaliation (albeit with conventional weaponry). Perhaps because of this both the Clinton and Bush administrations did not attempt an attack on North Korean nuclear facilities. Other avenues leading to the same result have failed: during the 2006 negotiations, North Korea rejected the suggestion that it demolish its two larger reactors. American interest in the region has waned, since the September 11, 2001 attacks, the Bush administration in the United States has made "terrorism" the focus of its foreign policy. Although the United States maintains a force of 28,500 troops in South Korea (the second largest U.S. troop deployment in East Asia), it is likely that that deployment would be considerably decreased if the political situation changed significantly in Korea, something expected to reduce U.S. influence in the region.

On March 17, 2007, North Korea told delegates at international nuclear talks that it is preparing to shut down its main nuclear facility. The agreement was reached following a series of six-party talks, involving North Korea, South Korea, China, Russia, Japan and the U.S begun in 2003. According to the agreement, a list of its nuclear programs will be submitted and the nuclear facility will be disabled in exchange for fuel aid and normalization talks with the U.S. and Japan. This had been delayed from April due to a dispute with the United States over Banco Delta Asia, but on July 14, International Atomic Energy Agency inspectors confirm the shutdown of North Korea's Yongbyon nuclear reactor.

North Korea's ability to fulfill its energy needs has been deteriorating since the 1990s. Although North Korea's indigenous nuclear power-generating capacity is insignificant, the two light-water moderated plants would be an important source of electricity in a nation with scant resources. Donald Rumsfeld demonstrated the severe lack of electricity for the entire nation in a photograph released in October 2006.

**Reactivation**

[](http://en.wikipedia.org/wiki/File:2009_North_Korean_nuclear_test.png)

USGS image of the earthquake caused by the nuclear test.

During 2008 tensions resurfaced between North Korea and the U.S. due to disagreements over the six-party talks disarmament process. According to one account, the talks began to break down after the United States insisted on more intrusive verification measures than North Korea was prepared to accept. On October 8, 2008, IAEA inspectors were forbidden by the North Korean government to conduct further inspections of the site. But two days later, the U.S. removed North Korea from the U.S. State Sponsors of Terrorism list and the Yongbyon deactivation process was expected to resume.

On April 25, 2009, however, the North Korean government announced that the country's nuclear facilities have been reactivated, and that spent fuel reprocessing for arms-grade plutonium has been restored.

On May 25, 2009, North Korea confirmed to have performed a "successful" underground nuclear test. It was the second such test and it was said to be much more powerful than the first. The same day a successful short range missile test was also conducted. The confirmation came little more than an hour after the U.S. Geological Survey reported a magnitude 4.7 seismic disturbance on the proximity of the site of North Korea's first nuclear test conducted in October 2006, other agencies such as the International Data Center of the CTBTO, and the Japanese Meteorological Center, also registered the seismic variations. North Korea's Korean Central News Agency said the test was conducted as part of the measures to bolster up its nuclear deterrent for self-defense in every way.

**Nuclear fusion claims**

In May 2010, the Rodong Sinmun announced in an article that North Korea had successfully carried out a nuclear fusion reaction. The aforementioned article, referring to the alleged test as "a great event that demonstrated the rapidly developing cutting-edge science and technology of the DPRK", also makes mention of efforts by North Korean scientists to develop "safe and environment-friendly new energy", and made no mention of plans to use fusion technology in its nuclear weapons program.

Later analysis of the nuclear isotope fallout by Swedish scientist Lars-Erik De Geer led him to suggest a theory that indicates two explosions in the range of 50–200 tonnes of TNT equivalent deemed to have taken place in mid-April and around May 11, 2010. The South Korean and U.S. governments had earlier dismissed this possibility due to the lack of any seismic data indicating such tests.

**Suspension of uranium enrichment**

In February 2012, North Korea announced that it would suspend uranium enrichment at the Yongbyon Nuclear Scientific Research Center and not conduct any further tests of nuclear weapons while productive negotiations involving the United States continue. This agreement included a moratorium on long-range missiles tests. Additionally, North Korea agreed to allow IAEA inspectors to monitor operations at Yongbyon. The U.S. reaffirmed that it does not have hostile intent toward the DPRK, and is prepared to improve bilateral relationships. U.S. President Barack Obama's administration called the move "important, if limited". The U.S. agreed to ship humanitarian aid to North Korea. The United States said it would proceed cautiously and that talks would resume only after North Korea made steps toward fulfilling its promise.

**Biological and chemical weapons**

North Korea acceded to the Biological Weapons Convention in 1987, and the Geneva Protocol on January 4, 1989, but has not signed the Chemical Weapons Convention. The country is believed to possess a substantial arsenal of chemical weapons. It reportedly acquired the technology necessary to produce tabun and mustard gas as early as the 1950s.

**Delivery systems**

**History**

The DPRK first received shipments of short-range ballistic missiles from its main ally, the Soviet Union. The first weapons of this kind to be delivered were the tactical FROG-series, capable of carrying either a conventional or WMD warhead for battlefield usage. Later the DPRK received shipments of longer range Scud-B missiles from Egypt (which in turn received those missiles from the USSR, Bulgaria and Poland). A local production basis was established, and the first modified copy was named Hwasong-5. With time, more advanced types of missiles were developed. Eventually North Korea equipped itself with ballistic missiles, capable of reaching Japan.

**Testing**

**Early 2000s**

North Korea's ability to deliver weapons of mass destruction to a hypothetical target is somewhat limited by its missile technology. As of 2005, North Korea's total range with its No Dong missiles is 1,400 km, enough to reach South Korea, Japan, and parts of Russia, and China, although they could potentially reach islands in the Pacific Ocean such as the Northern Mariana Islands and possibly even the state of Hawaii.

It is not known if this missile is actually capable of carrying the nuclear weapons North Korea has so far developed. The BM-25 is a North Korean designed long-range ballistic missile with range capabilities of up to 1,550 miles (2,490 km), and could carry a nuclear warhead. North Korea has also developed the Taepodong-1 missile, which has a range of 2,500 km, but it is not yet in full deployment. With the development of the Taepodong-2 missile, with an expected range of 5,000–6,000 km, North Korea could hypothetically deliver a warhead to almost all countries in Southeast Asia, as well as the western side of North America.

The Taepodong-2 missile was unsuccessfully tested on July 4, 2006. U.S. intelligence estimates that the weapon will not be operational for another 11 years. The Taepodong-2 could theoretically hit the western United States and other US interests in the Western hemisphere. The current model of the Taepodong-2 could not carry nuclear warheads to the United States. Former CIA director George Tenet has claimed that, with a light payload, Taepodong-2 could reach western parts of Continental United States, though with low accuracy.

In 2007 North Korea's Taepodong-X/Nodong-B Mobile Ballistic Missile (now named "Musdan Missile") was deployed. This missile's design is based on the USSR's submarine launched R-27 and extended the fuel tank to the 20 ton loading limit of the MAZ-543 transporter erector launcher, and the estimated range is 3000–4000 km, which can strike Guam.

**2009**

On April 5, 2009, North Korea launched the Unha-2 space booster (allegedly based on the long-range Taepodong-2). Although the launch was more successful than the 2006 test, the third stage still failed to separate properly. A missile test or a satellite attempt, the launch still violates the UN Security Council's decision. Because the Unha-2's first stage engine is the Musudan (Nodong-B / Taepodong-X), North Korea claims they have demonstrated the 4000 km range and reliability of its new Musudan missile.

This means North Korea may be able to develop/deploy mobile ICBMs, which can survive a US first strike, within 7–10 years.

On July 2, 2009, North Korea test fired a series of at least four surface-to-ship cruise missiles into the Sea of Japan (East Sea). Two days later, on July 4, they proceeded to test fire a further seven Scud-type ballistic missiles into the same sea. The tests are seen by world powers as a symbol of defiance to the United Nations set over North Korea after their nuclear test on May 25, 2009. These launches come only a week after US President Barack Obama extended US economic sanctions against North Korea. This is also a response to the UN's sanctions that were imposed in June 2009, after Pyongyang's atomic test in May 2009, as well as the new UN resolution that any nation can inspect a North Korean vessel that the investigating nation believes is carrying weaponry. It has been suggested that the test firing of missiles is an act of defiance against the United States national holiday, Independence Day.

Japan Ministry of Defense's analyst Takesada points out that North Korea's desire of unification is similar to North Vietnam, and warns of the possibility of North Korea's compulsory merger with South Korea by threats of nuclear weapons, taking advantage of any possible decrease in the US military presence in South Korea, after North Korea deploys several hundred mobile ICBMs aimed at the US.

**Aims**

These increases of missiles and nuclear tests may have dual purposes:

* Internal: A source of prestige and legitimacy for the party and the leadership, affirming its power before the coming succession, thus strengthening internal security. A successful missile, nuclear and space program would also increase internal national pride and the international prestige of the regime.
* International: USA, Japan, and South Korea are possibly the main diplomatic targets for these tests, but scholarsalso note that a resurgent China may be the ultimate diplomatic target. North Korea's aim might also be to eventually get more assistance from all these countries, in exchange for the reduction of missile and nuclear programs. This also secures a long term security need: preventing undue Chinese influence.

However, the true aims of North Korea remain officially unstated, and therefore open to speculation.

**Delivery Systems**

There is no evidence that North Korea has been able to miniaturize a nuclear warhead for use on a ballistic missile.

**Successfully tested**

* **KN-1** – a short-range anti-ship cruise missile. Its range is estimated to be around 160 kilometers, and is most probably an improved version of the Soviet Termit missile (NATO codename "*Styx*").
* **KN-2 Toksa** – a short-range, solid-fueled, highly accurate mobile missile, modified copy of the Soviet OTR-21. Unknown number in service, apparently deployed either in the late 1990s or early 2000s (decade).
* **Hwasong-5** – initial Scud modification. Road-mobile, liquid-fueled missile, with an estimated range of 330 km. It has been tested successfully. It is believed that North Korea has deployed some 150–200 such missiles on mobile launchers.
* **Hwasong-6** – later Scud modification. Similar to the Hwasong-5, yet with an increased range (550–700 km) and a smaller warhead (600–750 kg). Apparently, this is the most widely deployed North Korean missile, with at least 400 missiles in use.
* **Nodong-1** – larger and more advanced Scud modification. Liquid-fueled, road-mobile missile with a 650 kg warhead. First production variants had inertial guidance, later variants featured GPS guidance, which improves CEP accuracy to 190–250 m. Range is estimated to be between 1,300 and 1,600 km.
* **Nodong-2** – further improved variant of the Nodong-1, successfully tested in 2006. Range is estimated at about 2,000 km.
* **Taepodong-1** – two-stage Scud-derived missile. Has been tested with a satellite payload in 1998. The satellite failed, but the missile apparently flew without significant problems, therefore it is North Korea's longest-ranged operational missile with its 2,500 km maximum range. According to some analysts, the Taepodong-1 could have an intercontinental range of nearly 6,000 km with a third stage and a payload of less than 100 kg.
* **Musudan-1** – a modified copy of the Soviet R-27 Zyb SLBM.It was tested successfully as the first or second stage of Unha. Despite the failure of the satellite the first and second stages of the missile apparently flew without problems. The missile, also known under the names Nodong-B, Taepodong-X and BM25, has a range of 4,000 kilometers.

**Not tested / failed tests**

* **Taepodong-2** – North Korea's domestic ICBM attempt. First test occurred in 2006, when the missile failed 40 seconds after launch. On April 5, 2009, a space booster variant was launched with a satellite on board. As in 1998, the satellite itself failed to reach orbit, but the missile flew several thousand kilometers before falling in the Pacific Ocean. Estimates of the range vary widely – from 4,500 to 10,000 kilometers (most estimates put the range at about 6,700 km).

**Exports**

In April 2009 the United Nations named the Korea Mining and Development Trading Corporation (aka KOMID) as North Korea's primary arms dealer and main exporter of equipment related to ballistic missiles and conventional weapons. The UN lists KOMID as based in Central District Pyongyang. However it also has offices in Beijing and sales offices worldwide which facilitate weapons sales and seek new customers for North Korean weapons.

KOMID has sold missile technology to Iran and has done deals for missile related technology with the Taiwanese. KOMID representatives were also involved in a North Korean deal to mass produce Kornet anti-tank guided missiles for Syriaand KOMID has also been responsible for the sale of equipment, including missile technologies, gunboats, and multiple rocket artilleries, worth a total of over $100 million, to Africa, South America and the Middle East.

North Korea's military has also used the company Hap Heng to sell weapons overseas. Hap Heng was based in Macau in the 1990s to handle sales of weapons and missile and nuclear technology to nations such as Pakistan and Iran. Pakistan's medium-range ballistic missile, the Ghauri, is considered to be a copy of North Korea's Rodong 1. Even in 1999, intelligence sources said North Korea had sold missile components to Iran. Listed directors of Hap Heng include Kim Song In and Ko Myong Hun. Ko Myong Hun is now a listed diplomat in Beijing and may be involved in the work of KOMID.

A UN sanctions committee report stated that North Korea operates an international smuggling network for nuclear and ballistic missile technology, including to Burma, Syria, and Iran.

**Export partners**

These are countries which allegedly operate North Korean ballistic missiles, allegedly bought such or received assistance for establishing local production.

Pakistan

North Korean entities continued to provide assistance to Pakistan's ballistic missile program during the first half of 1999. Such assistance is critical for Islamabad's efforts to produce ballistic missiles. In April 1998, Pakistan flight-tested the Ghauri MRBM, which is based on North Korea's Nodong missile. Also in April 1998, the US imposed sanctions against Pakistani and North Korean entities for their role in transferring Missile Technology Control Regime Category I ballistic missile-related technology.

Cuba

No confirmed information for North Korea shipping Hwasong-6 missiles to Cuba.

Egypt

Egypt has received technologies and assistance for making both the Hwasong-5 and Hwasong-6, and may have as well provided guidance systems or information on longer-range missiles to North Korea from its Condor program.

Ethiopia

Unconfirmed information for possessing Hwasong-5 missiles.

Iran

One of the first buyers of North Korean missiles. Iran has established local production for the Hwasong-5 (Shahab-1), Hwasong-6 (Shahab-2) and the Rodong-1 (Shahab-3). Also possesses some 18 land-based BM25 missiles. North Korean weapons sales to Iran are estimated to total $2 billion annually.

Libya

Libya during the reign of Muammar Gaddafi had been known to receive technological assistance, blueprints and missile parts from North Korea.

Nigeria

In January 2004, the Nigerian government announced that North Korea agreed to sell it missile technology, but a month later Nigeria rejected the agreement under US pressure.

Republic of the Congo

There is some (although unconfirmed) information, that the Republic of the Congo has acquired Hwasong-5 missiles.

Sudan

There is some information that Syria shipped some of its North Korean designed Scud missiles to Sudan in 2004.

Syria

Uses two types of North Korean missiles – the Hwasong-6 and Rodong-1.

United Arab Emirates

25 Hwasong-5s purchased from North Korea in 1989. The Military of the United Arab Emirates were not satisfied with the quality of the missiles, and they were kept in storage.

Vietnam

Acquired Hwasong-5/6 missiles in 1998.

Yemen

Known to have bought Hwasong-5 missiles from the DPRK in the 1990s – a total of 15 missiles, 15 TELs with 15 HE warheads.