

Recent Missile & Nuclear Development of North Korea

March 2024

Japan Ministry of Defense

Recognition concerning North Korea's Capabilities of Nuclear Weapons and Ballistic Missiles

- North Korea probably aims to **acquire the means to be able to respond in armed conflict that could occur between itself and the United States and ROK forces in which conventional forces or tactical nuclear weapons are used**, and to **take an initiative to manage the situation at every stage of escalation** in addition to acquiring nuclear deterrent capabilities through the possession of nuclear weapons and long-range ballistic missiles for the maintenance and survival of the regime.
- It is assessed that **North Korea has already achieved necessary miniaturization of its nuclear weapons to fit ballistic missiles, whose range includes Japan**, given the North Korean technological maturity that is estimated to have been reached through previous six nuclear tests.
- Since May 2019, North Korea has also repeatedly launched **new types of short-range ballistic missiles (SRBMs) capable of flying at low altitudes with irregular trajectories** and other missiles. North Korea is believed to be planning to rapidly improve its related technology and operational capabilities. North Korea intends to make identification of signs of launch, detection and interception difficult by launching them from various platforms such as Transporter-Erector-Launchers (TEL), submarines and railway cars. In this way, North Korea has been striving to **expand more actual warfighting-oriented missile capabilities**.
- Furthermore, North Korea has also sought to operationalize its **long-range cruise missiles** and to realize **hypersonic missiles** and **solid fuel-propelled ICBMs**, etc. North Korea has repeatedly disclosed that a plan called the **"five-year plan for the development of the defense science and the weapon system"** was presented at the Congress of the KWP in January 2021. It is expected to **continue to focus efforts on the development of various missiles and other weapons in line with this plan**.



(Image: "Rodong Sinmun")

The military goals presented by Chairman Kim Jong-un at the 8th Congress of the KWP (January 2021)

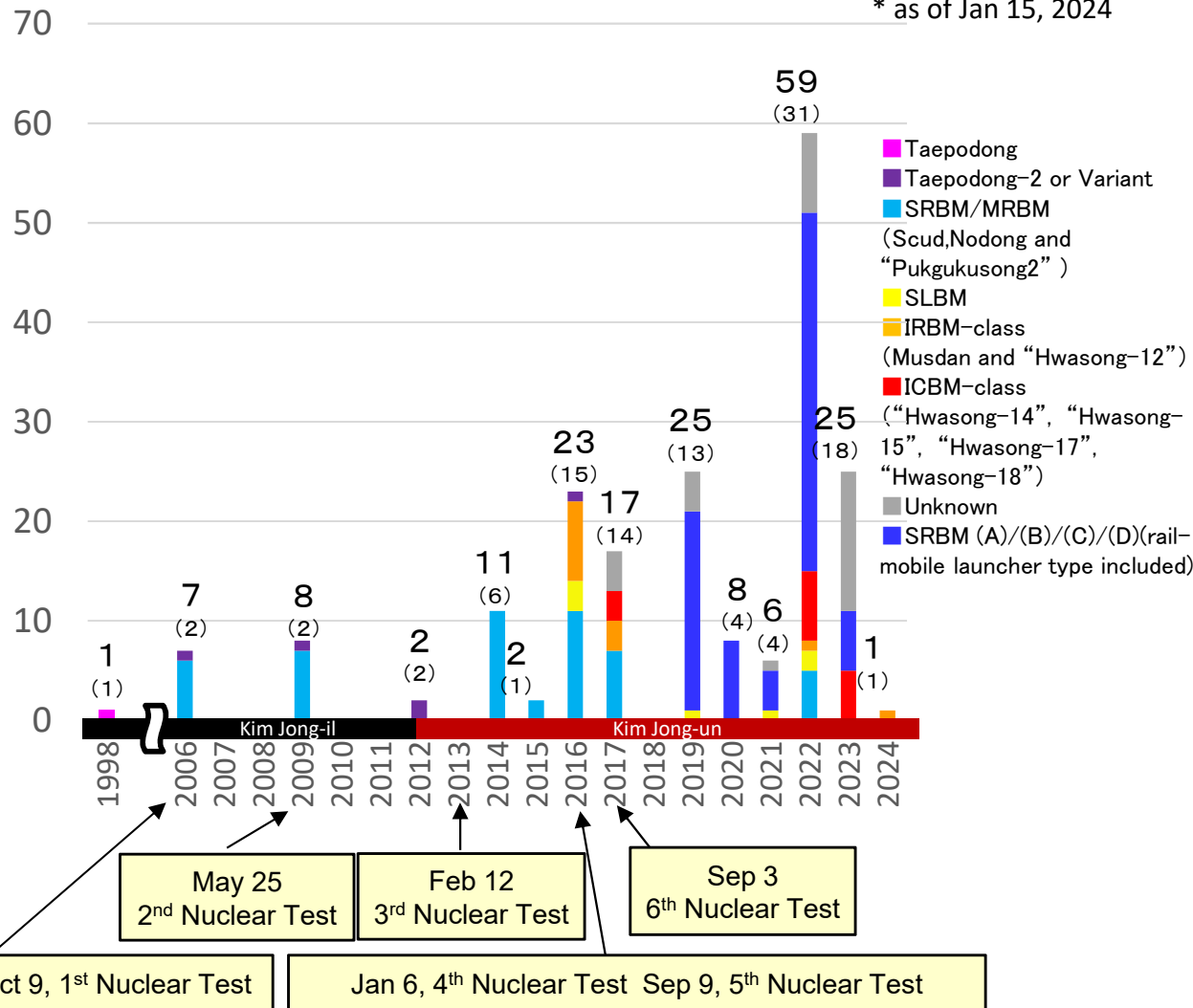
- Further advancement of nuclear technology
- Further development of smaller and lighter nuclear weapons for tactical uses
- Continuous promotion of the production of super-sized nuclear warheads
- Advancement of nuclear preemptive and retaliatory strike capabilities by further improving the accuracy rate of striking any strategic targets within a range of 15,000 km with pinpoint accuracy
- Development and introduction of "hypersonic gliding flight warheads" within a short time period
- Promotion of underwater and land-based solid fuel-propelled intercontinental ballistic missile development projects
- Possession of nuclear-powered submarines and underwater-launched nuclear strategic weapons
- Operation of military reconnaissance satellites in the near future
- Development of various reconnaissance means, including unmanned reconnaissance aircraft capable of reconnoitering up to 500km deep into the front

Nuclear Tests and Ballistic Missile Launches by North Korea(Overview)

- From 2016 to 2017, North Korea has conducted **3** nuclear tests and launched as many as **40** ballistic missiles.
- Especially in the latter half of 2017, it repeatedly launched **long-range** ballistic missiles, including **new types**.
- Since May 2019, it repeatedly launched new types of **short-range ballistic missiles capable of flying at low altitudes with irregular trajectories**.
- Since September 2021, it successively launched **what it calls "hypersonic missile"** and **a new type of submarine-launched ballistic missile(SLBM) presumed to fly with irregular trajectory**, etc. and is diversifying their launch modes to include rail-launched and submarine-launched types. In addition, since 2022, North Korea has repeatedly launched missiles –including **ICBM-class ballistic missiles- at an unprecedented high frequency**, unilaterally escalating its provocations against international community.

Nuclear Tests and Ballistic Missile Launches by North Korea

* as of Jan 15, 2024



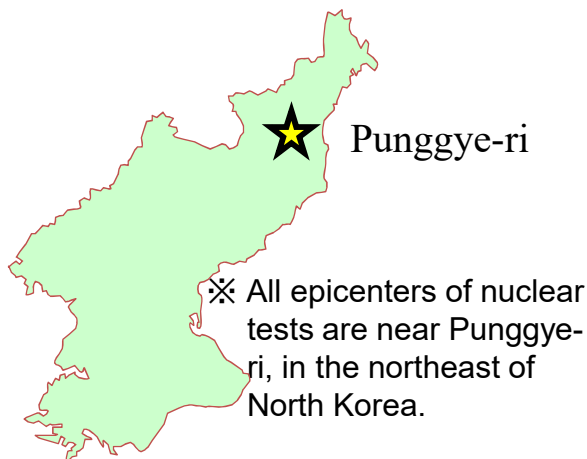
Number of Nuclear Tests and Ballistic Missile Launches by North Korea

Leader	Year	Missile Launches	Nuclear Tests
Kim Il Sun 	1993	Unknown	—
Kim Jong-il 	1994 to 2011	16 (Launched in 1998, 2006, and 2009)	2
Kim Jong-un 	2012 to present	179	4

(Image: ROK Ministry of Unification North Korea Information Portal)

Nuclear Development of North Korea

Nuclear Tests by North Korea



Larger yield than those of the past five tests

	Oct 2006	May 2009	Feb 2013	Jan 2016	Sep 2016	Sep 2017
Size of earthquake (released by CTBTO)	M4.1	M4.52	M4.9	M4.85	M5.1	M6.1
Estimated yield	Approx. 0.5-1kt	Approx. 2-3kt	Approx. 6-7kt	Approx. 6-7kt	Approx. 11-12kt	Approx. 160kt

【Ref】 Hiroshima: approx. 15kt(Uranium) Nagasaki: approx. 21kt(Plutonium)

H-bomb acquisition

○ After the 6th nuclear test on Sept 3, 2017, North Korea announced that it **successfully carried out a test of H-bomb.**

➔ It is **difficult to deny the possibility that North Korea conducted a H-bomb test according to the estimated yield.**

Miniaturization/ Warhead acquisition






○ After the 5th nuclear test on Sept 9, 2016, North Korea announced that it was **the first successful test explosion of a nuclear warhead**, and after the 6th nuclear test it announced that it **successfully carried out a test of H-bomb for ICBM.**

➔ **Considering technical maturity, North Korea is assessed to have already miniaturized nuclear weapons to fit ballistic missile warheads and possess the capability to launch an attack on Japan with a ballistic missile such as Nodong and Scud ER fitted with the nuclear warhead.**



Kim Jong-un inspects an object that North Korea claims to be a "H-bomb" to be loaded into new ICBM

Period and number of tests required for nuclear weapons states to miniaturize nuclear weapons

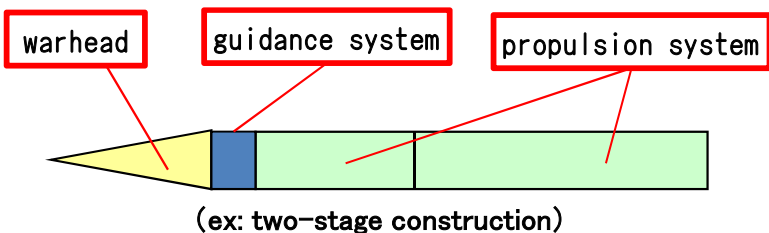
	First time	1 year	2 years	3 years	4 years	5 years	6 years	7 years	
U S 	1945/7/16 (21Kt) Mk-3 weight:4.67t diameter:152cm	12 tests (6 years) (except for drop in Hiroshima and Nagasaki)					1951/4/21 (47Kt) Mk-5 (TX-5D) weight:1.37t diameter:111cm		
former Soviet Union 	1949/8/29 (22Kt) RDS-1 weight:4.7t (presumed)	4 tests (4 years)			1953/8/23 (28Kt) RDS-4 weight:1.4t(presumed)				
U K 	1952/10/3 (25Kt) Blue Danube weight:4.5t diameter:155cm	5 tests (4 years)			1956/9/27 (15Kt) Red Beard weight:0.9t diameter:91cm				
France 	1960/2/13 (65Kt)	5 tests (2 years)	1962/5/1 (40Kt) AN-11 weight:1.5t						
China 	1964/10/16 (22Kt)	3 tests (2 years)	1966/10/27 (12Kt) DF-2 warhead weight:1.5t						

* As for the payload of ballistic missiles held by North Korea, it is pointed out that that of Nodong is 700~1,200kg and that of Scud ER is 300kg. (Jane's)

About Ballistic Missiles

- A **ballistic missile** is a rocket engine-propelled missile that flies on a parabolic trajectory. It is capable of attacking distant targets. It can be used as a **means of delivering WMDs, such as nuclear, biological, and chemical weapons.**
- As such, **effectively countering it requires a highly accurate interceptor missile system.**

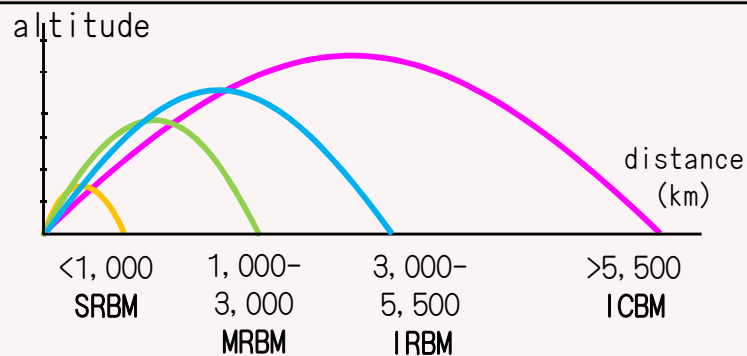
Component of an ordinary ballistic missile



Category of ballistic missiles

Description	Range
Short Range Ballistic Missile, SRBM	Under approx. 1,000 km or less
Medium Range Ballistic Missile, MRBM	Approx. 1,000 to under approx. 3,000 km
Intermediate Range Ballistic Missile, IRBM	Approx. 3,000 to under approx. 5,500 km
Inter-Continental Ballistic Missile, ICBM	Approx. 5,500 km or more

Flight image of ballistic missiles for each category

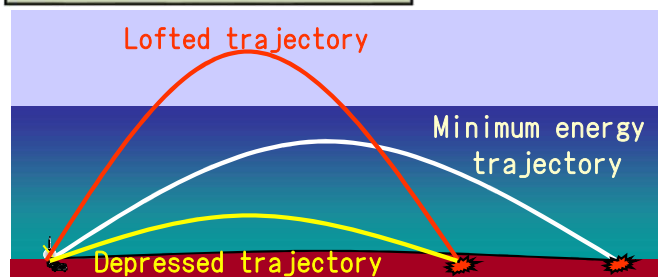


Difference between ballistic missiles and cruise missiles

Ballistic Missiles	Cruise Missiles
<ul style="list-style-type: none"> • A ballistic missile is a rocket engine-propelled missile that flies on a parabolic trajectory. It is capable of attacking distant targets. • Fly at high speed. 	<ul style="list-style-type: none"> • Basically a jet engine propelled guided missile similar to an aircraft. • It is possible to fly at low altitude. • They can reroute during flight and are highly accurate.

Various trajectory

It is possible to take several flight trajectories by control after launch.



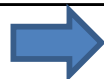
- **Minimum energy trajectory:** The most effective flight pattern
- **Lofted trajectory:** Compared to the minimum energy trajectory, it is difficult to deal with the missile launched on a lofted trajectory due to the high altitude and the fall at a high depression angle.
- **Depressed trajectory:** Compared to the minimum energy trajectory, missiles fly at high speeds with low altitude, so it is necessary to intercept them in a short time.

Difficulties in ballistic missile interception

It is necessary to intercept them in a very short time.

It is necessary to accurately guide and control an intercepting missile up to a high altitude and to make it hit a ballistic missile directly in order to reliably intercept.

It is necessary to reliably detect and track small and fast target.



A highly accurate interceptor missile system is required

※Category is based on Ballistic & Cruise Missile Threat. (created by National Air and Space Intelligence Center) on the US Missile Defense Agency's Homepage.

Recent Trends of North Korea's Ballistic Missile Development

- **Missile-related technologies**: Enhancement of **launch secrecy and instantaneity**, and **capability to breach BMD** for more practical technology acquisition/Development of **new type of ICBM-class** ballistic missile
- **Missile operational capabilities**: Enhancement of capabilities such as **saturation attacks** through simultaneous launches, launches at very short intervals, and launches from different locations to a specific target

Missile-related technologies

Enhancement of launch secrecy and instantaneity

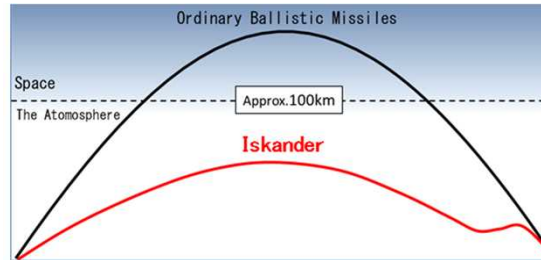


- ◆ Launches from **various platforms**
- ◆ Launching **from any point** and **hiding**
- ◆ **Solid fuel** for ballistic missiles

⇒ Pursuit of **secrecy and instantaneity of launch**

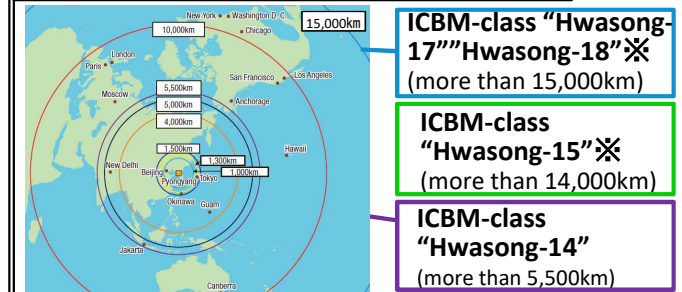
Enhancement of capability to breach BMD

- ◆ BMs flying at **lower altitudes** and with **irregular trajectories**
- ◆ Development of **“hypersonic gliding flight warheads”**



⇒ Seeking to **make it difficult to intercept and breach BMD**

Development of Long-Range BMs



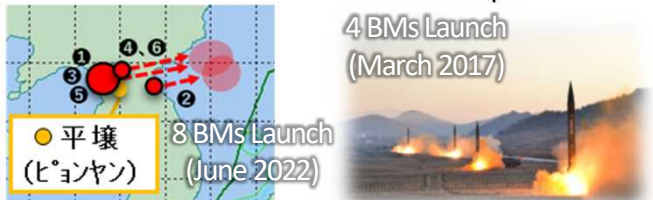
◆ **“Hwasong-15”’s maximum range is more than 14,000km (launched from Pyongyang), which includes the whole U.S. territory.**

⇒ Concern for NK to may misrecognize that it has secured **a strategic deterrence against the U.S.**

⇒ Risk of **escalation of provocations** by NK

Missile operational capabilities

- ◆ Simultaneous launches of multiple missiles



- ◆ Launches at very short intervals in less than 1 minute



- ◆ Launches from different locations to a specific target



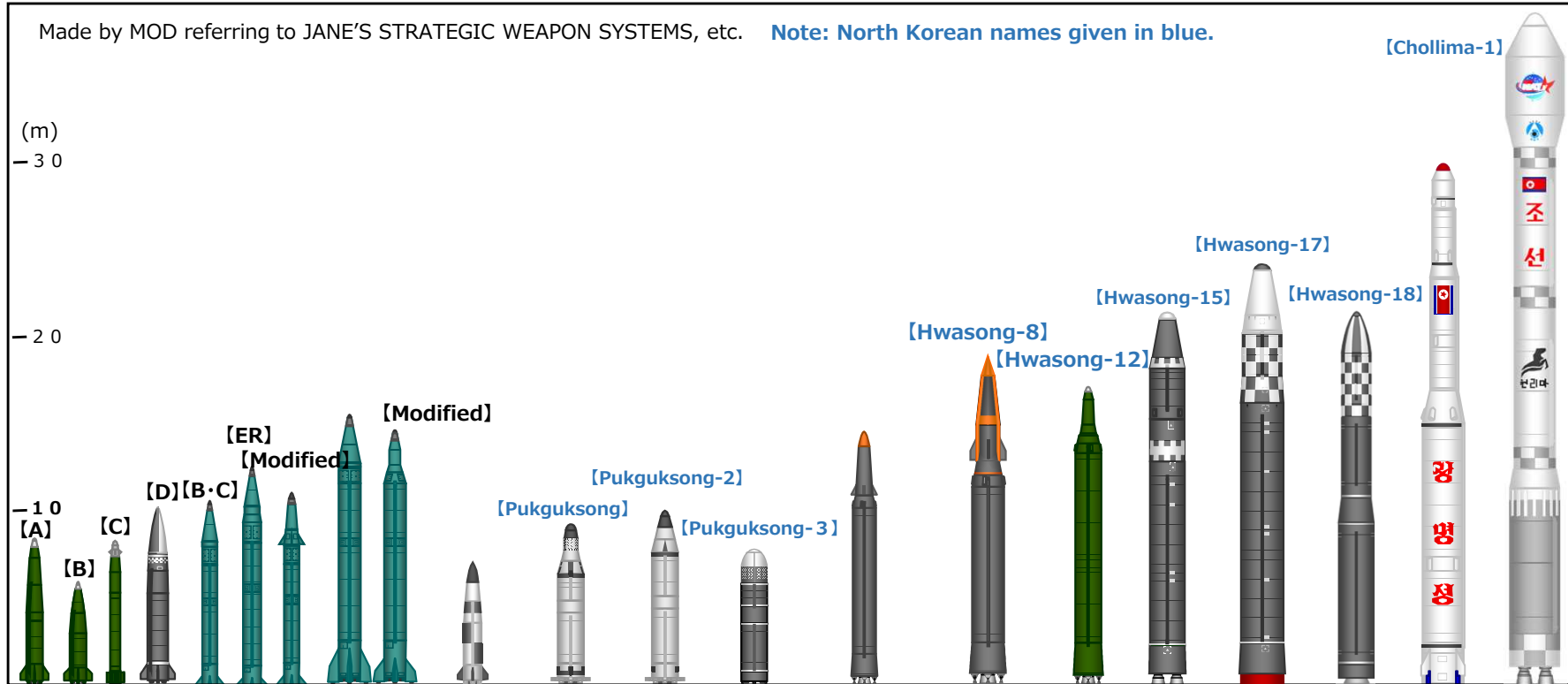
⇒ Pursuing enhancement of **practical missile operational capabilities** such as **saturation attacks**

※Depends on the weight of warheads etc.

*Depends on weight of the warhead, etc.

North Korea's Ballistic Missiles and Other Missiles

Made by MOD referring to JANE'S STRATEGIC WEAPON SYSTEMS, etc. **Note: North Korean names given in blue.**



	SRBM (A)·(B)·(C)·(D)	Scud B,C,ER, Modified	Nodong, Modified	New Type SLBM	SLBM	Pukguk song- series GLBM	SLBM	BM Referred to as "Hypersonic Missiles"	BM Referred to as "Hypersonic Missiles" (possible)	IRBM- class	ICBM- class	ICBM- class	ICBM- class	Taepo dong-2 Variant	Chollima -1
Range	Approx.800km/ Approx.400km/ Approx.400km/ Approx.750km ^{※1}	Approx.300km/ Approx.500km/ Approx.1,000km/ under analysis	Approx. 1,300km/ 1,500km	Approx. 650km ^{※1}	1,000km or more	1,000km or more	Approx. 2,000km	— ^{※2}	—	Appro x.5,0 00km	14,000km or more ^{※3}	15,000km or more ^{※3}	15,000km or more ^{※3}	10,000 km or more	—
Propellant /Stage	Solid / 1	Liquid / 1	Liquid / 1	Solid / 1	Solid / 2	Solid / 2	Solid / 2	Liquid / 1	Liquid / 1	Liquid /1	Liquid / 2	Liquid / 2	Solid / 3	Liquid /3	Liquid /3
運用	TEL	TEL	TEL	Submarines	Submarines	TEL	Submarines	TEL	—	TEL	TEL	TEL	TEL	Launch site	Launch site






※1 Ranges of SRBM(A)·(B)·(C)·(D) and new type SLBMs are the largest ones achieved.

※2 At the time of launch on January 5, 2022, the ballistic missile referred to as a "Hypersonic Missile" flew about 500 km if it were launched with a normal ballistic trajectory. It is also believed that the flight distance may have been longer than this, but analysis is currently being conducted.

※3 Depends on weight of the warhead, etc.

Major missiles that NK has been developing and possessing in recent years(1)





(Sources: "Rodong Sinmun", etc.)

	SRBM (A)	SRBM (B)	SRBM (C)	SRBM (D)	SRBM (launched from rail-mobile launcher)
					
Name by NK	"new type of tactical guided weapon"	"new weapon" "tactical guided weapon"	"super-large multiple rocket launcher"	"new-type tactical guided missile"	—
Cases of launches	11 times 2019: 5/4, 5/9, 7/25, 8/6 2022: 1/27, 6/5, 10/1, 10/6, 10/14 2023: 3/19, 3/27	5 times 2019: 8/10, 8/16 2020: 3/21 2022: 1/17, 6/5	17 times 2019: 8/24, 9/10, 10/31, 11/28 2020: 3/2, 3/9, 3/29 2022: 5/12, 6/5, 9/29, 10/6, 10/9, 11/3, 11/17, 12/31 2023: 1/1, 2/20	2 times (2021: 3/25 2022: 9/28)	2 times (2021: 9/15 2022: 1/14)
Range	Approx. 800km	Approx. 400km	Approx. 400km	Possibly up to approx. 750km	Approx. 750km
Fuel	Solid				
Operation platform	TEL				North Korea announced "railway-borne missile"
Remarks	<ul style="list-style-type: none"> • Without canister • In terms of the shape, the missile has a similarity to that of the Russian SRBM "Iskander." • It is presumed that the missile is able to fly at a lower altitude than conventional ballistic missile with an irregular trajectory. 	<ul style="list-style-type: none"> • Square canister • In terms of the shape, the missile has a similarity to that of the U.S. "ATACMS." • It is presumed that the missile is able to fly at a lower altitude than conventional ballistic missile with an irregular trajectory. 	<ul style="list-style-type: none"> • Cylindrical canister • Some of the intervals between launches were estimated less than 1 minute. • The missile flies at an altitude of approximately 100 km or less. 	<ul style="list-style-type: none"> • North Korea referred to as "a weapon system whose warhead weight has been improved to be 2.5t with the use of ...tactical guided missile that was already developed." • It is presumed that the missile is able to fly at a lower altitude than conventional ballistic missile with an irregular trajectory. 	<ul style="list-style-type: none"> • In terms of the shape, the missile has a similarity to that of the SRBM (A). • North Korea referred to as "the railway-borne system deployed for action." • It is presumed that the missile is able to fly at a lower altitude than conventional ballistic missile with an irregular trajectory.

Note: Ranges are the largest ones achieved.

Major missiles that NK has been developing and possessing in recent years(2)





(Sources: "Rodong Sinmun", etc.)

	Intermediate-Range Ballistic Missile (IRBM) class	Intercontinental Ballistic Missile (ICBM) class	Intercontinental Ballistic Missile (ICBM) class	Intercontinental Ballistic Missile (ICBM) class
				
Name by NK	"Hwasong-12"	"Hwasong-15"	"Hwasong-17"	"Hwasong-18"
Cases of launches	<p>4 times</p> <p>(2017: 5/14, 8/29, 9/15)</p> <p>2022: 1/30</p>	<p>2 time</p> <p>(2017: 11/29)</p> <p>2023: 2/18</p>	<p>8 times</p> <p>(2022: 2/27, 3/5, 3/24, 5/4,</p> <p>5/25, 11/3, 11/18)</p> <p>2023: 3/16</p>	<p>2 times</p> <p>(2023: 4/13, 7/12)</p>
Range	Approx. 5,000km	14,000km or more(※)	15,000km or more (※)	15,000km or more(※)
Fuel	Liquid	Liquid	Liquid	Solid
Operation platform	TEL	TEL	TEL	TEL
Remarks	<ul style="list-style-type: none"> On August 29 and September 15, 2017, each missiles flew over Japan's territory. They flew about 2,700km and 3,700km each other. 	<ul style="list-style-type: none"> NK announced "the state nuclear force completed" after the first launch on November 29, 2017. NK announced after the launch on February 18, 2023 that the General Missile Bureau oversaw the "launch exercise" 9-axle TEL 	<ul style="list-style-type: none"> first appeared at the military parade on October 10, 2020. NK announced the launches on February 27 and March 5, 2022 as a "test-fire for 'reconnaissance satellite development'". NK announced the launches on November 18, 2022 and March 16, 2023 as "(ICBM) test-fire" and "launch training." respectively. larger than the "Hwasong-15," it is pointed out that this missile is intended to be equipped with a larger warhead or multiple warheads. the 11-axle TEL with the largest number of wheels in the world, pointed out as being made in North Korea 	<ul style="list-style-type: none"> first appeared at the military parade on February 8, 2023. NK announced the launch on April 13, 2023 as its "first test-fire". NK announced the launch on July 12, 2023 as "test-fire for further validating the technological and operational reliability". this missile is possibly sold fuel-propelled, ejected by a "cold launch system", judging from the size of TEL (with canister), missiles and launch method. 9-axle TEL

(※) The range depends on weight of the warhead, etc.

Major missiles that NK has been developing and possessing in recent years(3)






(Sources: "Rodong Sinmun", etc.)

	Ballistic missile (possible)	New type ballistic missile	SLBM	New type SLBM
				
北朝鮮の 呼称	“Hwasong-8”	“Hypersonic missile”	“Pukguksong-3”	“New type submarine-launched ballistic missile”
発射事例	1 time (2021:9/28)	2 times (2022:1/5, 1/11)	1 time (2019:10/2)	〔 3 times 2021:10/19 2022:5/7, 9/25 〕
射程	—	Approx. 700km or more(※)	Approx. 2,000km	Approx. 650km(※)
推進方式	—	—	Solid	Solid
運用	—	TEL	Submarine * There is possibility of launch from underwater launch test equipment	GORAE class submarine
備考	<ul style="list-style-type: none"> NK referred to as “hypersonic missile Hwasong-8” 	<ul style="list-style-type: none"> On January 11, the missile may have flown at a maximum altitude of about 50km and at a maximum speed of approximately Mach 10 with an irregular trajectory that included horizontal maneuvers. NK referred to as “hypersonic missile” and announced that it “made glide jump flight” and “long turning maneuver.” 	<ul style="list-style-type: none"> It has been pointed out that North Korea is building new or refurbished submarines. 	<ul style="list-style-type: none"> In terms of the shape, the missile has a similarity to that of the SRBM (A). It is presumed that the missile is able to fly at a lower altitude (approx. 50km at highest) with an irregular trajectory. NK announced “a lot of developed operational guiding technologies are introduced, including side maneuvers and glide jump flight” it is presumed that the launch on September 25, 2022 was from inland, using an underwater launch test equipment.

(※) Ranges are the largest ones achieved.

Major missiles that NK has been developing and possessing in recent years(4)




(Sources: "Rodong Sinmun", etc.)

	Cruise missile	Cruise missile	Cruise missile	Cruise missile	Cruise missile
					
Name by NK	"Strategic Cruise Missile 'Hwasal-1'" (23.3.22)	"Strategic Cruise Missile 'Hwasal-2'" (23.3.22)	"New Type Strategic Cruise Missile 'Pulhwasal-3-31'"	"Strategic Cruise Missile"	"Strategic Cruise Missile"
Cases of launches	2021: 9/11, 9/12(※) 2022: 10/12(※) 2023: 3/22(※) (they have similar shape)	2022: 1/25(※) 2023: 2/23, 3/22(※) 2024: 1/30(※) (they have similar shape)	2024: 1/24, 1/28(※)	2023: 3/12(※)	2023: 8/21(※) (reported the date of inspection)
Range	Approx. 2,000km(※)(22.10.12)	Approx. 2,000km(※)(23.2.23)	-	Approx. 1,500km(※)	-
OP platform	TEL(※)	TEL(※)	-	Submarine(※)	Patrol Ship
Remarks	<ul style="list-style-type: none"> • NK announced as a "test-fire of newly developed long-range cruise missile" on September 2022, revealing that the missile had flown for about two hours and hit a target 1,500 km away. • NK referred to as "the long-range strategic cruise missiles deployed at the units of the KPA for the operation of tactical nukes," and announced that they hit the target 2,000km away. • NK announced it conducted a launch training relevant to "tactical nuclear attack tasks" on March 2023. 	<ul style="list-style-type: none"> • NK announced as a "test-fire for updating long-range cruise missile system" on January 2022, revealing that the missile had flown for about 32 minutes and hit a target 1,800 km away. • NK announced as a "test-fire for the Strategic Cruise Missile 'Hwasal-2'" on February 2023, revealing that the missile had flown for about 2h 50 min and hit a target 2,000 km away. • NK announced a launch training relevant to "tactical nuclear attack tasks" in March 2023. • NK announced a launching drill, checking rapid counterattack posture and improving strategic striking capability in January 2024. 	<ul style="list-style-type: none"> • NK announced as a "first test-fire for new type strategic cruise missile 'Pul Hwasal3-31' still under development" on January 2024. • On the same month, NK announced as a "test-fire for newly developed submarine-launched strategic cruise missile 'Pulhwasal-3-31'". 	<ul style="list-style-type: none"> • NK announced as a "test-fire of strategic cruise missile from underwater", revealing that the missile had flown for about 2hours and hit a target 1,500km away. 	<ul style="list-style-type: none"> • NK announced a inspection of "a drill of launching strategic cruise missiles" (No mention to the test-fire date and flight distance).

(※)based on NK announcement.

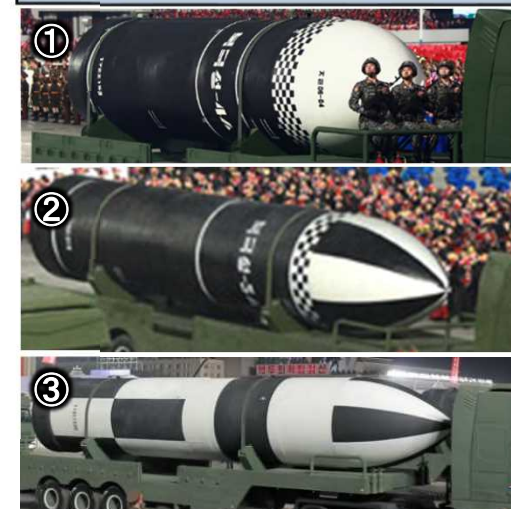
Trends of North Korea's Ballistic Missile Development etc.

(Image: KCNA HP, "Rodong Sinmun")

	SLBM		
North Korea's Name	"Pukguksong"	"Pukguksong-3"	"New Type SLBM"
			
Range	More than 1,000km	Approx. 2,000km	Approx. 650km*
Fuel	Solid		
Operation Platform	Submarine		

Note: Range of "New Type SLBM" is the largest one achieved.

New SLBMs (Possible)



It appeared in the military parade on 10th October 2020(1), 14th January 2021(2), 25th April 2022(3). North Korea introduced them as "Underwater strategic ballistic missile." SLBM(1) was labeled "Pukguksong-4," SLBM(2) was labeled "Pukguksong-5" respectively.

Launch cases

	Presumed type of missiles	Number of launches	Location	Flight distance	Operational Platform
2016.04.23	"Pukguksong"	1	Off the coast of Sinpo	Approx. 30km (ROK Joint Chiefs of Staff)	GORAE class submarine
2016.07.09	"Pukguksong"	1	Off the coast of Sinpo	A few kilometers (ROK media reports)	GORAE class submarine
2016.08.24	"Pukguksong"	1	Near Sinpo	Approx. 500km	GORAE class submarine
2019.10.02	"Pukguksong-3"	1	Near Wonsan	Approx. 450km	* There is possibility of launch from underwater launch test equipment
2021.10.19	"New Type SLBM"	1	Near Sinpo	Approx. 600km	GORAE class submarine
2022.5.7	"New Type SLBM"	1	Near Sinpo	Approx. 600km	GORAE class submarine
2022.9.25	"New Type SLBM"	1	Inland of North Korea	Approx. 650km	* Potentially launched from an underwater launch test equipment

* In addition, on May 9, 2015, North Korea announced that it had succeeded in a test launch of an SLBM. On January 8, 2016, it released footage that appeared to be an different SLBM test launch from the one unveiled in May 2015.

* NK possesses Pukguksong-series GLBMs called "Pukguksong-2", which were launched on Feb 12 and May 21, 2017.



North Korea's submarines

(sources: Jane's Fighting Ships 2021-2022, KCNA HP, Media reports etc.)

- North Korea possesses **one submarine that can launch a ballistic missile(GORAE class)**. It is reported that the submarine can carry one SLBM.
- In addition, North Korean media reported Chairman Kim Jong-Un's inspection of "**Newly Built Submarine**"(Jul. 2019) and the ceremony of launching a "**tactical nuclear attack submarine**" (Sep. 2023).
- It is deemed that **North Korea intends to diversify its ballistic missile attack capabilities and improve survivability** through developing the SLBM and a new submarine to carry it.

GORAE class/ROMEO class




*SSB: ballistic missile submarine(CPR)
SS: submarine, general

Name	GORAE class SSB	ROMEO class SS
Image		
Number of possession	1	24
Displacement	1,500t dived	1,830t dived
Speed	10knots dived	13knots dived
Weapons	SLBM, Torpedoes	Torpedoes, Mines (in lieu of torpedoes)
Complement	70	54
Note	A platform to launch SLBMs. It is reported that it was launched in March 2014.	Attack submarine. Import from China and production in North Korea began in 1970s.

"Tactical Nuclear Attack Submarine"

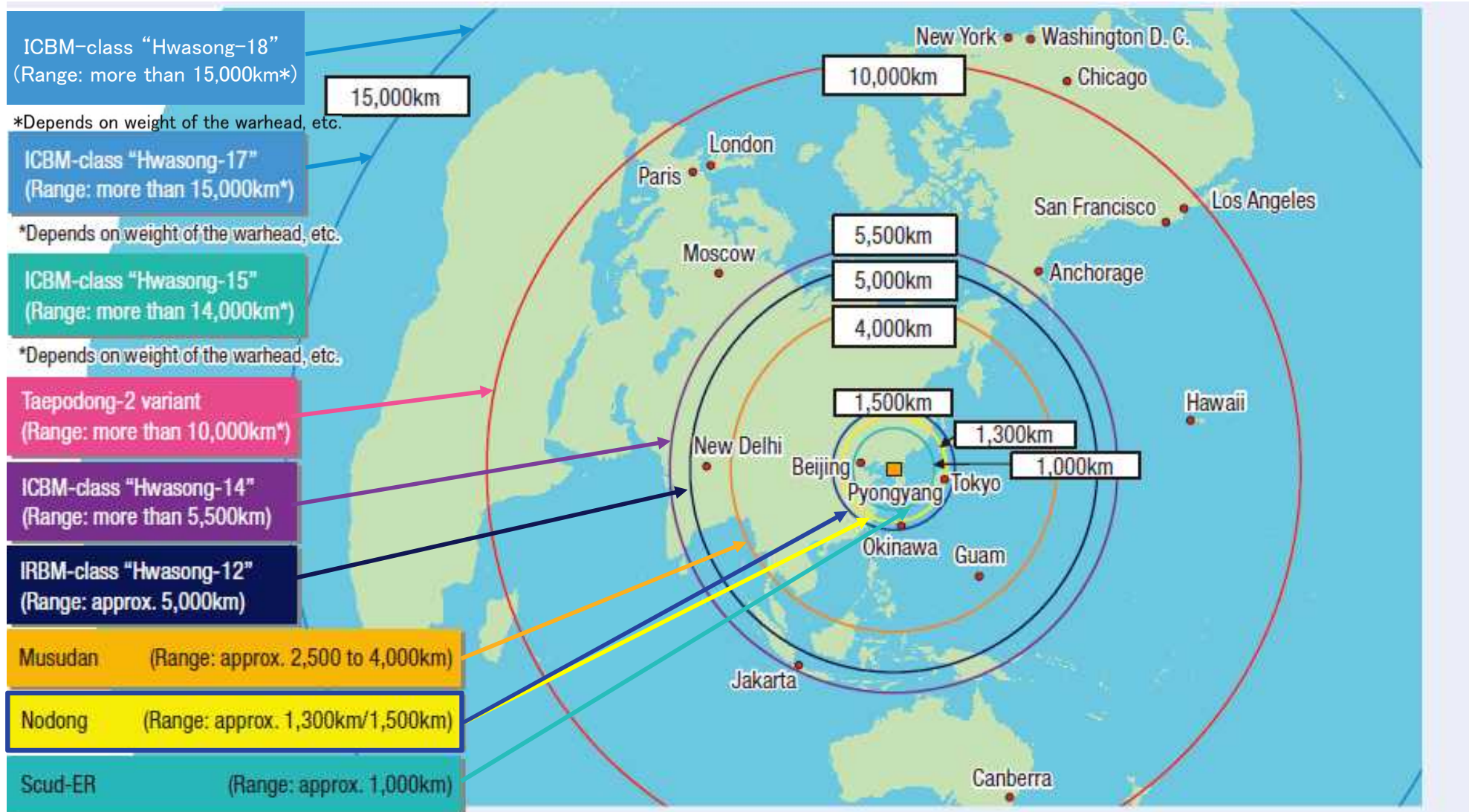


Midget Submarines

SANGO/SANGO II class	YONO class	YUGO class
		

*These are used for infiltration and transportation of the special operation forces.
(Image: JANES)

Range of North Korea's Ballistic Missiles



Note 1: For simplicity, the distance from Pyongyang is displayed in concentric circles as an image.

Note 2: Quotation marks indicate the names used by North Korea.