NORTH KOREA

Enabling Russian Missile Strikes Against Ukraine

MAY 2024
Since November 2023, North Korea – formally known as the Democratic People's Republic of Korea (DPRK) – has been providing ballistic missiles to Russia to support Moscow's war against Ukraine. The following highlights Pyongyang's growing relationship with Moscow, the DPRK's expanding missile capabilities, and a visual comparison of DPRK state media and missile debris from Kharkiv, Ukraine – visual evidence confirming Russian usage of DPRK missiles against Ukraine.

For more information about the Defense Intelligence Agency and to view this report, visit DIA's website at www.dia.mil

For media and public inquiries about this report, contact DIA Public Affairs at DIA-PAO@dodiis.mil

Information cutoff date: 22 May 2024

Cover Images: North Korean SRBM paraded in Pyongyang in February 2023; Kim Jong Un and Vladimir Putin in Russia in September 2023; a DPRK SRBM launched in August 2019

Image Sources: DPRK state media

This report contains copyrighted material. Copying and disseminating the contents are prohibited without the permission of the copyright owners. Images and other previously published material featured or referenced in this publication are attributed to their source.
Timeline of Expanding DPRK-Russia Military Relations

Following Russia’s February 2022 invasion of Ukraine, the DPRK became one of only four countries aligned with Russia to vote against a UN resolution condemning the invasion. Later that year, the DPRK was one of only five countries to back Russia in the UN, this time recognizing Moscow’s illegal annexation of Ukrainian territory. In September 2023, Kim Jong Un traveled to Russia – his first trip abroad since 2019 – visiting Russian President Vladimir Putin and touring Russian military facilities. Russia announced that Putin intends a reciprocal trip to the DPRK, Putin’s first visit to the country.

Pyongyang has also advanced its cooperation with Moscow by providing direct materiel support, including at least 3 million artillery rounds in addition to dozens of ballistic missiles to sustain Russia’s war on Ukraine. Russia has used DPRK missiles to strike targets in Ukraine, including population centers, resulting in the death or injury of dozens of civilians. In return, Moscow has provided Pyongyang both diplomatic support at the UN by vetoing sanctions enforcement mechanisms and the opportunity to gain insight into how DPRK-made ballistic missiles perform in combat, including against advanced missile defense systems.

---

**November 2022**
DPRK delivers munitions to Russian Private Military Company Vagner.

**September 2023**
Kim Jong Un travels to Russia to meet with Putin and visit military facilities.

**August 2023**
A plane linked to high-ranking Russian defense ministry officials makes an unannounced trip to Pyongyang: the timing strongly suggests a delegation involved in high-level arms negotiations was onboard.

**5 September 2022**
White House states Russia is negotiating the purchase of millions of rounds of DPRK artillery shells and rockets.

**26-28 July 2023**
Russian Defense Minister Shoygu visits the DPRK and observes a military parade and defense expo that highlight Pyongyang’s growing ballistic missile program.

**Late August-Early September 2023**
DPRK begins to supply Russia with ammunition. Russian merchant ships transfer hundreds of shipping containers to DPRK; the containers are loaded with materiel, shipped back to Russia, then placed on trains bound for Russian military depots near Ukraine.

**27 March 2024**
Russia vetoes the renewal of the UNSC 1718 Committee Panel of Experts mandate, which investigates DPRK violations of Security Council resolutions.
The DPRK is further expanding its missile program, increasing the sophistication and reliability of its weapons, while demonstrating a willingness to provide ballistic missiles for use in war. Pyongyang’s ongoing development of new military capabilities indicates the regime will pursue its defense modernization goals for the foreseeable future, which Russia is postured to support as a result of growing ties. In 2021, DPRK leader Kim Jong Un announced an ambitious military modernization plan, prominently featuring missile development goals as a regime priority. Since then, the DPRK has repeatedly highlighted its missile production, and it probably has the capability to produce hundreds of missiles of all major system classes in the coming years.

Since the beginning of the DPRK’s missile program, Pyongyang has sold ballistic missile technology, including full systems and components. The DPRK has historically sold ballistic missiles or missile technology to at least Burma, Iran, Libya, Syria, and Yemen. The Kim regime remains willing to provide ballistic missiles to countries for use in furthering conflicts, exemplified by its shipment of dozens of ballistic missiles to Russia to sustain Moscow’s ongoing conflict against Ukraine.

The DPRK’s missile program began in the 1980s under Kim II Sung and continued under Kim Jong II, both overseeing the development of liquid-propellant systems based on older Soviet technology. DPRK leader Kim Jong Un has since facilitated the DPRK’s transition into testing more advanced and diverse systems, expanding Pyongyang’s arsenal to include overlapping capabilities to strike regional targets and intercontinental ballistic missiles (ICBM) that can reach the continental United States with a nuclear warhead.

The photos below depict August 2019 test-launches by the DPRK of two missile systems – both of which it has provided to Russia – striking targets off DPRK’s east coast to demonstrate accuracy. Since 2019, the DPRK has flight-tested solid-propellant short-range ballistic missiles (SRBM) dozens of times. These missiles are more capable than Pyongyang’s Soviet-era liquid-propellant systems, and the DPRK has touted their accuracy and ability to evade missile defenses.

Source: DPRK state media
The following DIA analysis compares open-source images of missile debris found in Kharkiv, Ukraine, following the 2 January 2024 attack and North Korean state media images of North Korean leader Kim Jong Un touring a ballistic missile factory in 2023. The debris in Ukraine visually matches the missiles in the images from North Korean state media.

**SRBM Comparison: Forward Motor Section**

The forward motor section from a North Korean system pictured on the left matches the physical characteristics shown in two images of missile debris on the right.

**NORTH KOREAN FACTORY TOUR**

Kim Jong Un gives guidance during a visit to a missile plant in August 2023.

**DEBRIS FROM ATTACK AGAINST UKRAINE**

Debris of a DPRK missile in Kharkiv, Ukraine, in January 2024.
North Korea | Enabling Russian Missile Strikes Against Ukraine

**SRBM Comparison: Aft Motor Section**

The aft motor section from a North Korean system pictured on the left matches the physical characteristics shown in the missile debris on the right.¹²⁸

---

**Regime officials and factory workers note Kim’s guidance during his tour of a ballistic missile plant.**¹³⁹

**This image of debris found in Kharkiv prominently shows the aft motor section and burned nozzle of a DPRK missile.**¹²⁹
**SRBM Comparison: Cable Tray and Handling Ring Connectors**

The cable tray and handling ring connectors’ proportions from the North Korean state media image on the left are identical to the cable tray and handling ring connectors shown in the missile debris from the 2 January Kharkiv attack on the right.

**NORTH KOREAN FACTORY TOUR**

Kim observes missiles at a factory in August 2023

**DEBRIS FROM ATTACK AGAINST UKRAINE**

Ukrainian personnel inspect debris in Kharkiv on 2 January 2024
North Korea | Enabling Russian Missile Strikes Against Ukraine

Sources

1 News Article; Radio Free Asia; 12 Jan 2024; US Imposes Sanctions Over North Korean Missiles To Russia
2 News Article; Kuwait News Agency; 16 Jan 2024; US sanctions on Russian entities for ballistic missile transfers from DPRK
3 Press Release; White House; 4 Jan 2024; Press Briefing by Press Secretary Karine Jean-Pierre and NSC Coordinator for Strategic Communications John Kirby, January 4, 2024
4 News Article; Reuters; 6 Jan 2024; Ukraine shows evidence Russia fired North Korea missile at Kharkiv
5 News Article; Reuters; 5 Jan 2024; Russia fires North Korean missiles at Ukraine for first time - Kyiv official
6 State Media; Uriminjokkkiri; 14 Aug 2023; Photos of Kim Jong Un giving on-the-spot guidance at major munitions plants
7 Social Media: X (formerly Twitter) @chu_dodomo; 2 Jan 2024
8 News Article; PBS; 17 Sep 2023; Kim Jong Un returns to North Korea after visit to Russia that set off arms deal concerns
9 DIA Publication; 2021; North Korean Military Power; p 24, 27.
10 Think Tank Publication; Council on Foreign Relations, cfr.org, 28 Jun 2022; “North Korea’s Military Capabilities”
11 State Media; Uriminjokkkiri; 11 Aug 2019; Kim Jong Un guiding the test-firing of a new weapon on 10 August
12 State Media; Uriminjokkkiri; 14 Sep 2023; Photos of Kim Jong Un holding talks with Russian President Vladimir Putin
13 State Media; 9 Feb 2023; North Korean state media relay of North Korean military parade on 8 February
14 State Media; Uriminjokkkiri; 11 Aug 2019; Kim Jong Un guiding the test-firing of a new weapon on 10 August
15 State Media; Uriminjokkkiri; 14 Sep 2023; Photos of Kim Jong Un holding talks with Russian President Vladimir Putin
16 State Media; 9 Feb 2023; North Korean state media relay of North Korean military parade on 8 February
17 Press Release; White House; 4 Jan 2024; Press Briefing by Press Secretary Karine Jean-Pierre and NSC Coordinator for Strategic Communications John Kirby, January 4, 2024
18 News Article; Euro-Union External Action; 2 Mar 2022; UN General Assembly demands Russian Federation withdraw all military forces from the territory of Ukraine
19 News Article; Radio Free Asia; 15 Sep 2023; Russia/North Korea: Putin may visit North Korea, as Kim boasts of ‘unbreakable’ bilateral ties
20 News Article; PBS; 17 Sep 2023; Kim Jong Un returns to North Korea after visit to Russia that set off arms deal concerns
21 News Article; NK News; 13 Oct 2022; North Korea backs Russia’s annexation of Ukrainian territory at UN
22 News Article; Radio Free Asia; 15 Sep 2023; Russia/North Korea: Putin may visit North Korea, as Kim boasts of ‘unbreakable’ bilateral ties
23 News Article; PBS; 17 Sep 2023; Kim Jong Un returns to North Korea after visit to Russia that set off arms deal concerns
24 News Article; Radio Free Asia; 15 Sep 2023; Russia/North Korea: Putin may visit North Korea, as Kim boasts of ‘unbreakable’ bilateral ties
25 Fact Sheet; Department of State; 23 Feb 2024; Responding to Two years of Russias Full-Scale War On Ukraine and Navalny’s Death
26 News Article; Nikkei Asia Online; 28 Feb 2022; North Korea sent more than 3m artillery shells to Russia, says Seoul
27 News Article; Reuters; 16 Feb 2024; Ukrainian data casts doubt on precision of North Korea missiles fired by Russia
29 Press Release; White House; 4 Jan 2024; Press Briefing by Press Secretary Karine Jean-Pierre and NSC Coordinator for Strategic Communications John Kirby, January 4, 2024
30 Press Release; Department of Defense; 21 Dec 2022; 1.85 Billion in Additional Security Assistance for Ukraine
31 News Article; Reuters; 10 Jan 2024; Ukraine is 'test site' for N. Korean missiles - S. Korea
32 News Article; Reuters; 16 Feb 2024; Ukrainian data casts doubt on precision of North Korea missiles fired by Russia
33 News Article; Wall Street Journal; 15 Sep 2022; Any North Korean Weapons Supplied to Russia Would Likely Have Limits
34 News Article; Tokyo Nikkei Asia Online; 23 Dec 2022; U.S. says Russia's Wagner Group bought North Korean weapons
35 State Media; Korea Central Television; 28 Jul 2023; North Korean TV Coverage of Military Parade
36 State Media; Korea Herald; 20 Mar 2023; N. Korea Simulates Nuclear Air Burst to Attack S. Korea
37 News Article; Reuters; 28 Mar 2023; UPDATE 3-North Korea Unveils New Nuclear Warheads as Kim Orders More Weapons-Grade Materials – North Korea-Missiles/ (Update 3, PIX, TV)
38 DIA Publication; 2021; North Korea Military Power; p 24, 27.
39 Think Tank Publication; Council on Foreign Relations, cfr.org; 28 Jun 2022; North Korea's Military Capabilities
40 Press Release; White House; 4 Jan 2024; Press Briefing by Press Secretary Karine Jean-Pierre and NSC Coordinator for Strategic Communications John Kirby, January 4, 2024
41 News Article; Kyodo News English; 15 Mar 2024; North Korean missiles fired by Russia 'low' quality: Ukraine official
43 Journal article, Nonproliferation Review; Joshua Pollack; Jul 2011; Ballistic Trajectory: The Evolution of North Korea's Ballistic Missile Market; vol 18, pp 411-425.
44 UN Report; UN Panel Of Expert; S/2018/171; 05 Mar 2018; Report of the Panel of Experts established pursuant to resolution 1874
45 State Media; Rodong Sinmun; 10 Jan 2021; A Great Program of Struggle That Leads Our-Style Socialist Construction to New Victory – On the Report Given by the Respected and Beloved Comrade Kim Jong Un at the Eighteenth Congress of the Workers Party of Korea
46 News Article; Korea News Gazette; 13 Jul 2023; (3rd LD) N. Korea Confirms Test-Firing of Hwasong-18 Solid-Fuel ICBM
47 News Article; The Associated Press; 1 Apr 2023; N. Korea Says It Tested New Solid-Fuel Long-Range Missile - BC-A3-Koreas-Tensions, 3rd Ld-Writehru
48 News Article; Qatar News Agency; 12 Mar 2023; North Korea Announces Military Action Ahead of Seoul-Washington Joint Exercises
49 News Article; Korea Herald; 20 Mar 2023; N. Korea Simulates Nuclear Air Burst to Attack S. Korea
50 News Article; The Independent; 8 Sep 2023; North Korea Reveals First Operational Tactical Nuclear-Armed Attack Submarine
51 News Article; Reuters; 28 Mar 2023; UPDATE 3-North Korea Unveils New Nuclear Warheads as Kim Orders More Weapons-Grade Materials – North Korea-Missiles/ (Update 5, PIX, TV)
52 DIA Publication; 2021; North Korea Military Power; p 24, 27.
53 Think Tank Publication; Council on Foreign Relations, cfr.org; 28 Jun 2022; North Korea's Military Capabilities
54 Press Release; White House; 4 Jan 2024; Press Briefing by Press Secretary Karine Jean-Pierre and NSC Coordinator for Strategic Communications John Kirby, January 4, 2024
55 News Article; Qatar News Agency; 12 Mar 2023; North Korea Announces Military Action Ahead of Seoul-Washington Joint Exer-
North Korea | Enabling Russian Missile Strikes Against Ukraine

---

64 News Article; Korea Herald: 20 Mar 2023; N. Korea Simulates Nuclear Air Burst to Attack S. Korea
65 News Article; Korea News Gazette; 21 Aug 2023; (4th LD) N. Korean Leader Inspects Cruise Missile Test as S. Korea-U.S. Military Drills Begin
66 News Article; The Associated Press; 17 Mar 2023; North Korea says ICBM Launch was Response to Rivals’ Drills – BC-AS–Koreas Tensions
67 News Article; Korea News Gazette; 13 Jul 2023; (3rd LD) N. Korea Confirms Test-Firing of Hwasong-18 Solid-Fuel ICBM
68 News Article; The Associated Press; 14 Apr 2023; N. Korea says it Tested New Solid-Fuel Long-Range Missile - BC-AS–Koreas Tensions, 3rd LD-Whitehouse
69 News Article; Reuters; 28 Mar 2023; Update 3-North Korea Unveils New Nuclear Warheads as Kim Orders More Weapons-Grade Materials – North Korea-Missiles (Update 3, PIX, TV)
70 State Media; Rodong Sinmun; 9 Jan 2021; A Great Program of Struggle That Leads Our-Style Socialist Construction to New Victory – On the Report Given by the Respected and Beloved Comrade Kim Jong Un at the Eighth Congress of the Workers Party of Korea
71 DIA Publication; 2021; North Korea Military Power; p 24, 27.
72 State Media; KCNA; 14 Aug 2023; Respected Comrade Kim Jong Un Inspects Major Munitions Factories
73 State Media; Uriminjokkkiri; 14 Aug 2023; Photos of Kim Jong Un giving on-the-spot guidance at major munitions plants
74 News Article; NK News; 1 Jan 2023; Kim Jong Un and daughter inspect newly-processed warheads at Pyongyang factory
75 State Media; KCNA; 5 Jan 2024; Respected Comrade Kim Jong Un Inspects Major TEL Production Factory
76 Journal article, Nonproliferation Review; Joshua Pollack; Jul 2011; Ballistic Trajectory: The Evolution of North Korea’s Ballistic Missile Market; vol 18, pp 411-429.
77 Journal article, Nonproliferation Review; Joshua Pollack; Jul 2011; Ballistic Trajectory: The Evolution of North Korea’s Ballistic Missile Market; vol 18, pp 411-429.
78 UN Report; UN Panel Of Expert; S/2018/171; 5 Mar 2018; Report of the Panel of Experts established pursuant to resolution 1874
79 News Article; Reuters; 16 Feb 2024; Ukrainian data casts doubt on precision of North Korea missiles fired by Russia
80 News Article; The Kyiv Independent; 14 Mar 2024; Prosecutors: Russia has launched around 50 North Korean missiles at Ukraine
81 Press Release; White House; 4 Mar 2024; Press Briefing by Press Secretary Karine Jean-Pierre and NSC Coordinator for Strategic Communications John Kirby, January 4, 2024
82 News Article; Reuters; 16 Feb 2024; Ukrainian data casts doubt on precision of North Korea missiles fired by Russia
83 Article; Center for Arms Control and Non-Proliferation; 5 Feb 2024; Fact Sheet: North Korea Missile Test Activity; https://arms-controlcenter.org/fact-sheet-north-korea-missile-test-activity/
84 Janes; 8 Jul 2021; Hwasong-6/Scud C, Hwasong-7/No Dong, and Hwasong-9/Scud ER
85 DIA Publication; 2021; North Korea Military Power; p 24, 27.
86 DIA Publication; 2021; North Korea Military Power; p 24, 27.
87 Article; Center for Arms Control and Non-Proliferation; 5 Feb 2024; Fact Sheet: North Korea Missile Test Activity; https://arms-controlcenter.org/fact-sheet-north-korea-missile-test-activity/
89 State Media; Uriminjokkkiri; 17 Aug 2019; Photos of Kim Jong Un giving the test-firing of a new weapon
90 State Media; Uriminjokkkiri; 7 Aug 2019; Photos of Kim Jong Un watching the demonstration fire of new-type tactical guided missiles
91 State Media; Uriminjokkkiri; 28 Jan 2022; Photos of test-fire for updating long-range cruise missile system and the test-fire for confirming the power of conventional warhead for surface-to-surface tactical guided missile
92 State Media; Pyongyang KCNA in English; 28 Jan 2022; Academy of Defence Science Conducts Important Weapons Tests
93 State Media; Pyongyang KCNA in English; 28 Jan 2022; Academy of Defence Science Conducts Important Weapons Tests
94 Un giving on-the-spot guidance at major munitions plants
95 News Article; Reuters; 6 Jan 2024; Russia shows evidence Russia fired North Korea missile at Kharkiv
96 News Article; Reuters; 5 Jan 2024; Russia fires North Korean missiles at Ukraine for first time – Kyiv official
97 News Article; Reuters; 5 Jan 2024; Russia fires North Korean missiles at Ukraine for first time – Kyiv official
98 News Article; Reuters; 5 Jan 2024; Russia fires North Korean missiles at Ukraine for first time – Kyiv official
99 News Article; Reuters; 5 Jan 2024; Russia fires North Korean missiles at Ukraine for first time – Kyiv official
100 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
101 News Article; Reuters; 5 Jan 2024; Russia fires North Korean missiles at Ukraine for first time – Kyiv official
102 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
103 News Article; Reuters; 5 Jan 2024; Russia fires North Korean missiles at Ukraine for first time – Kyiv official
104 State Media; Uriminjokkkiri; 14 Aug 2023; Photos of Kim Jong Un giving on-the-spot guidance at major munitions plants
105 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
106 News Article; Reuters; 6 Jan 2024; Ukraine shows evidence Russia fired North Korea missile at Kharkiv
107 News Article; Reuters; 5 Jan 2024; Russia fires North Korean missiles at Ukraine for first time – Kyiv official
108 State Media; Uriminjokkkiri; 14 Aug 2023; Photos of Kim Jong Un giving on-the-spot guidance at major munitions plants
109 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
110 News Article; Reuters; 8 Jan 2024; Ukraine shows evidence Russia fired North Korea missile at Kharkiv
111 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
112 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
113 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
114 News Article; Reuters; 5 Jan 2024; Russia fires North Korean missiles at Ukraine for first time – Kyiv official
115 News Article; Reuters; 5 Jan 2024; Russia hit Ukrainian region with non-Russian missiles – governor
116 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
117 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
118 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
119 News Article; Reuters; 8 Jan 2024; Ukraine shows evidence Russia fired North Korea missile at Kharkiv
120 News Article; Pravda; 11 Jan 2024; Prosecutor General’s Office receives evidence that Russia hit Ukraine with North Korean missiles
121 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
122 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
123 Social Media; X (formerly Twitter); @shocu_dodomu; 2 Jan 2024
124 News Article; Suspline News; 5 Jan 2024; Photo of missile launched against Ukraine