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SPECIAL MONITORING REPORT



When Do North Korean Missile Launches Coincide with Major Events?

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Main Findings

This report evaluates the timing of North Korean missile and rocket launches between 1984 and October 2026 that coincide with major military and political events in the US and South Korea, with implications for regional security and nuclear escalation risks. Key findings include:

- North Korea launched missiles and rockets on 56 separate days during 37 periods of US–South Korean military exercises on record, showing a strong overlap in events.
- The record does not show a comparable, dependable pattern of events around North Korean national anniversaries, US or South Korean elections, or widely recognised US dates such as Independence Day. Some individual coincidences are striking, but they do not add up to a consistent practice across the analysed record.
- Although the concentration of launches during military exercises may be relevant to assessing heightened tensions and escalation risks in the Korean Peninsula, the findings establish a temporal correlation rather than causation and do not, on their own, demonstrate deliberate nuclear signalling by Pyongyang.

Scope and Methodology

The underlying chronology of North Korean missile and rocket launches, compiled by the author over the past decade, covers 1984 to 31 October 2026. The first launch used in the analysis is from 1994, as earlier entries lack sufficiently precise launch dates. The date-based analysis contains 260 separate launch days and a reported or conservatively estimated total of 731 missiles or large rockets. A day counts once even if several weapons were fired; the separate projectile total shows the scale of those firings. The number of projectiles launched is conservatively estimated where the available information permits; launches without a usable quantity remain included in the launch-day count but contribute no additional projectiles to the numerical tally.

The review includes ballistic and land-attack cruise missiles, anti-ship missiles, surface-to-air missiles,1 space launch vehicles, and rockets of 240 mm calibre2 or larger. Nuclear tests, ground-only engine tests, ejection-only tests, ordinary artillery drills and 11 entries without a usable launch date are excluded.

For anniversaries, elections and one-day events, the review considers launches on the event date or within seven days before or after it. For military exercises, it considers the exercise itself within the same date range. To assess whether the observed overlaps were unusual, the launch dates were randomly redistributed within their original year and calendar month, 35,000 times using AI-assisted statistical analysis; the number of launch days in each month and the number of

1 Publicly available records of North Korean anti-ship cruise missile and surface-to-air missile launches are incomplete, as Pyongyang does not systematically disclose these activities and South Korea does not routinely report them. Both categories are nevertheless included because of their operational significance in a potential large-scale conflict on the Korean Peninsula, particularly in maritime and air operations. Excluding them would omit militarily relevant launch activities from the examination, although gaps in reporting may affect the completeness and comparability of the historical record.

2 The launch of 240 mm multiple-launch rocket systems (MLRSs) is included as the they have long been a significant component of North Korea's conventional artillery threat to ROK forces near the border and the greater Seoul area. However, the official record of the 240 mm launches is incomplete, and South Korea does not routinely publicise conventional artillery firings by the North.

projectiles recorded on each launch day were unchanged. The observed number of launch days and the recorded projectile totals within each event window were then compared with the corresponding results from the simulations. Their averages provide the expected figures.

1. Military Exercises: The Clearest Connection

To judge whether an apparent overlap is unusual, the comparison keeps each month's launch activity unchanged and asks how often the dates would overlap if the launches had occurred on other days of that same month. Figures described below as "expected" refer to that comparison, not to a claim about North Korean behaviour.

The most noticeable difference occurs while selected US–ROK exercises are under way, rather than in the week before or after them. Both the number of days with launches and the recorded projectile total are higher during the exercises than would be expected if launches were randomly distributed within the same months (Table 1).

Table 1. North Korean launch activity around 37 dated US–ROK military exercises

Timing	Days with launches recorded / simulation	Missiles and large rockets recorded / simulation
Seven days before	11 / 12 expected	40 / 33 expected
During the exercises	56 / 44 expected	229 / 178 expected
Seven days after	9 / 13 expected	21 / 37 expected

"Simulation" shows approximately how much activity would fall in each phase if launches within the same months were dated differently.

The pattern has also changed over time. During the 17 US–ROK military exercises examined between 2012 and 2021, North Korea conducted launches on 36 separate days. This was close to the approximately 34 launch days expected from simulations that randomly redistributed North Korea's actual launches within their respective calendar months while keeping the exercise dates unchanged.

By contrast, during the 10 exercises examined between 2022 and 2026, North Korea conducted launches on 18 days, about twice the approximately nine days expected from the same simulations. The recorded total was 82 missiles and large rockets during these exercises, compared with approximately 30 expected. The difference between observed and expected launch activity is therefore more pronounced in the selected exercises from 2022–2026 than in those from 2012–2021.

The complete exercise-by-exercise record appears in Table 2. The record illustrates the overlaps but cannot, on its own, show that exercises prompted particular launches. The exercise calendar used here is incomplete for the earlier decades: the 37 dated periods begin in 2003 and are not a full historical list of US–ROK training. Exercises also changed substantially during the 2018 diplomatic opening and the COVID-19 period. The finding is therefore best described as a

relationship with the selected documented exercises, particularly since 2022, not a general rule covering every exercise since 1984. Meanwhile, the DPRK launch chronology may also contain fewer entries due to incomplete reporting in the earlier years.

Table 2. Exercise-by-exercise launch record

Exercise	Exercise dates	Launch days before exercise	Launch days during exercise	Launch days after exercise	Recorded quantity
2003–2011 | 10 exercises					
2003 RSOI / Foal Eagle	04 Mar–02 Apr 2003	0	2	0	2
2003 Ulchi Focus Lens	18 Aug–29 Aug 2003	0	0	0	0
2004 RSOI / Foal Eagle	22 Mar–28 Mar 2004	0	0	0	0
2006 Ulchi Focus Lens	21 Aug–01 Sep 2006	0	0	0	0
2007 RSOI command exercise	25 Mar–31 Mar 2007	0	0	0	0
2008 Key Resolve / Foal Eagle command exercise	02 Mar–07 Mar 2008	0	0	0	0
2008 Ulchi Freedom Guardian	18 Aug–22 Aug 2008	0	0	0	0
2009 Key Resolve / Foal Eagle command exercise	09 Mar–20 Mar 2009	0	0	0	0
2010 Key Resolve / Foal Eagle command exercise	08 Mar–17 Mar 2010	0	0	0	0
2011 Key Resolve	28 Feb–10 Mar 2011	0	0	0	0
2012–2021 | 17 exercises					
2012 Key Resolve / Foal Eagle	27 Feb–30 Apr 2012	0	3	0	5
2013 Key Resolve / Foal Eagle	01 Mar–30 Apr 2013	0	1	0	2
2013 Ulchi Freedom Guardian	19 Aug–30 Aug 2013	0	0	0	0
Foal Eagle 2014	24 Feb–18 Apr 2014	1	8	0	90
Ulchi Freedom Guardian 2014	18 Aug–29 Aug 2014	1	0	1	6
Foal Eagle 2015	02 Mar–24 Apr 2015	0	5	0	16
Ulchi Freedom Guardian 2015	17 Aug–28 Aug 2015	0	0	0	0
Foal Eagle 2016	07 Mar–30 Apr 2016	1	8	0	26
Ulchi Freedom Guardian 2016	22 Aug–02 Sep 2016	0	1	1	4

Exercise	Exercise dates	Launch days before exercise	Launch days during exercise	Launch days after exercise	Recorded quantity
Foal Eagle 2017	01 Mar–30 Apr 2017	0	5	0	8
Ulchi Freedom Guardian 2017	21 Aug–31 Aug 2017	0	2	0	4
2018 Foal Eagle / Key Resolve	01 Apr–04 May 2018	0	0	0	0
2019 Dong Maeng spring	04 Mar–12 Mar 2019	0	0	0	0
2019 Dong Maeng summer	05 Aug–20 Aug 2019	2	3	1	12
2020 Combined Command Post Training	18 Aug–28 Aug 2020	0	0	0	0
2021 Combined Command Post Training spring	08 Mar–18 Mar 2021	0	0	2	4
2021 Combined Command Post Training summer	16 Aug–26 Aug 2021	0	0	0	0
2022–2026 | 10 exercises					
Ulchi Freedom Shield 2022	22 Aug–01 Sep 2022	1	0	0	2
Vigilant Storm 2022	31 Oct–05 Nov 2022	1	3	1	36
Freedom Shield 2023	13 Mar–23 Mar 2023	2	4	1	18
Ulchi Freedom Shield 2023	21 Aug–31 Aug 2023	0	3	1	6
Freedom Shield 2024	04 Mar–14 Mar 2024	0	1	1	6
Ulchi Freedom Shield 2024	19 Aug–29 Aug 2024	0	1	0	3
Freedom Shield 2025	10 Mar–20 Mar 2025	0	2	0	3
Ulchi Freedom Shield 2025	18 Aug–28 Aug 2025	0	1	0	2
Freedom Shield 2026	09 Mar–19 Mar 2026	1	2	0	23
Ulchi Freedom Shield 2026	17 Aug–21 Aug 2026	1	1	0	12
Total (37 exercises)		11	56	9	290

Note: "Before" and "After" cover seven days on either side of each exercise; "During" covers the exercise itself. The final column counts the recorded total of missiles and large rockets fired across all three phases. A launch day is counted once even if several projectiles were fired. A 0 in the recorded quantity column can also mean that the number fired was not established. The exercise calendar is incomplete, especially before 2003.

2. North Korean Anniversaries: Not as Aligned as Expected

It is often assumed that Pyongyang favours major anniversaries for displays of military power. The review considered six annual dates: Kim Jong Il's birthday (16 February), Kim Il Sung's birthday (15 April), the armistice anniversary (27 July), Liberation Day (15 August), the DPRK's founding (9 September) and the Workers' Party's founding (10 October).

Across the analysed record, 57 launch days fell within a week of these anniversaries, compared with around 62 suggested by the same-month simulations. The recorded projectile total was also lower than expected from the simulations. Individual launches can certainly coincide with symbolically important dates; the overall record, however, does not support a sustained tendency to launch more frequently around these six anniversaries.

3. Elections: No Recurring Response

US presidential and midterm elections, as well as South Korean presidential and legislative elections, were examined separately. None shows a convincing pattern across successive election cycles. The election-related overlaps are concentrated in a small number of years rather than recurring from one election to the next.

4. US Independence Day and Other US Public Dates

Across the analysed record, the windows extending seven days before and after Independence Day contain 12 launch days and a recorded total of 42 projectiles, compared with approximately nine launch days and 29 projectiles in the same-month statistical comparison. These launches deserve attention, but the difference is uneven across years and is not strong enough to establish a recurring Independence Day pattern.

Notable cases include the seven-missile salvo in July 2006, the multi-launch episodes in July 2009 and 2014, and the Hwasong-14 intercontinental ballistic missile launch on 4 July 2017. The missile launch database also records a reported 12-cruise-missile salvo on 3 July 2026.

Other US dates were also checked: presidential inaugurations, the 11 September anniversary, Memorial Day, Veterans Day, Thanksgiving, New Year's Day and the Super Bowl. Taken together, none of these US public events provides evidence as consistent as that for launches during selected military exercises.

How Much Confidence Should We Have in These Findings?

North Korean missile chronology has become much fuller in recent years. Only 26 qualifying launch days are recorded for 1984–2011, compared with 104 for 2012–2021 and 130 for 2022–31 October 2026. This reflects both a more active missile programme and improved reporting. The early record is therefore not directly comparable with the later period.

A window extending seven days before and after an event also captures plenty of chance overlaps—especially when many holidays, anniversaries and elections are examined together. Large rocket salvos can make a category look impressive even if it contains only a few launch days. For this reason, the primary question is whether launches repeatedly occur on more separate days near an event, with projectile quantities used as supporting data.

The strongest finding is a greater concentration of launches during the selected US–ROK exercises, especially since 2022. Even here, an overlap is not proof of intent or causation: engineering schedules, weather, exercise scheduling and changes in the broader security environment may all matter.

Bottom Line

Among the events examined, the selected US–South Korean military exercises show the clearest association with the timing of recorded North Korean missile and large-rocket launches. North Korean anniversaries, elections and US symbolic dates may help explain individual episodes, but the analysed record does not show an equally dependable pattern around them. Any assessment of why a specific launch occurred should combine the date with official statements, the type of weapon, operational circumstances and the wider political context.