

Hwasong 15: New Missile. New Challenges

Tuesday North Korea tested its newest intercontinental ballistic missile the Hwasong 15. The missile displayed several new technologies that make it much more capable than the Hwasong 14.

At roughly 2:47 AM Pyongyang Time (6:17 PM GMT) on November 29, North Korea [test fired a ballistic missile](#) from the Sain-ni area.^[1] North Korea has since claimed that this launch was a new Hwasong-15 intercontinental ballistic missile (ICBM). Initial reports from South Korea's Joint Chiefs of Staff indicated that the missile reached an [apogee of about 4,500 km](#), and traveled 960 km downrange before impacting in the East Sea, within Japan's Exclusive Economic Zone (EEZ).^[2] The total flight time was reportedly 53 minutes. Without additional flight data, photographs, or video of the launch, it is difficult to estimate the exact range of this new missile with complete certainty; however, preliminary calculations place the range from 13,000 km on the high-end with light to no payloads to 8,500 km with more standard 500 kg payloads. (<http://www.38north.org/2017/11/melleman112917/>)

The Hwasong-15 is a two-stage, liquid-fueled ICBM. Photographs of the Hwasong-15 reveal that its first stage is powered by a pair of engines that share the same external features found on the single chamber engine used by the Hwasong-14. The two-chamber configuration found on the Hwasong-15 is very similar to the original design of the RD-251 engine block developed and produced in the former Soviet Union, suggesting that the total thrust generated at lift-off is about 80-tons force. This is reasonably consistent with the estimated mass of the new missile, which is between 40 and 50 metric tons. The configuration of the second stage is not known, though its overall size suggests it contains 50 percent more propellant than the Hwasong-14. Taken together, and applying conservative assumptions about the second-stage propulsion system, it now appears that the Hwasong-15 can deliver a 1,000-kg payload to any point on the US mainland. North Korea has almost certainly developed a nuclear warhead that weighs less than 700 kg, if not one considerably lighter. (<http://www.38north.org/2017/11/melleman113017/>) This article on the technical specifications of the Hwasong 15 should be read entirely.

Analysis. Pictures of the launch of the Hwasong 15 appear to indicate that it is a liquid fueled missile. This gives the missile a longer reaction time than a solid fueled missile. However, this is not necessarily a detriment when North Korea may be a short notice aggressor. It also appears that the Hwasong 15 is at the very least road mobile over reasonable terrain. This complicates the task of locating ready to fire missiles. The transporter also appear to be an erector which moves the missile from the horizontal for transport to the vertical for launch. I also presume the launch is controlled from the transporter. This system is similar to the systems used to launch large missiles of Russia and the Peoples Republic of China (PRC).

Kim is now very close to his goal of putting the United States at risk both as a means to keep us from attempting to destroy his nuclear weapons programs and missile programs and as a way to dissuade us from helping South Korea defend against an invasion from the North. We must always keep in mind that a reunified Korea under the rule of the Kim family is the goal. Everything that Kim does is directed towards achieving granddaddy's (Kim Il Sung's) dream of a Communist Korea under his leadership.

It is quite possible that an invasion of South Korea by the North is nearer than most people care to contemplate. Indicators of this are the poor harvest, the condition of the Korean Peoples Army (KPA) as evidenced by the parasite infections found in the recent defector, the return to the use of human fertilizer beginning in 2014 due to the lack of other sources of fertilizer and the continued work on the construction and testing of submarine launched ballistic missiles (SLBM) and the submarines to launch them. (<http://www.38north.org/2017/11/sinpo111617/>)

Exactly how close Kim is to the “use it or lose it” point where the KPA becomes ineffective as a fighting force due to malnutrition and parasitic infections among other problems is unknown. We can only see indirect evidence of the condition of the KPA. Sending soldiers into farmer’s fields to steal food is not a good indication of the health of the KPA. It is also likely the source of the parasitic infections: eating uncooked produce.

The harvest is in and it was not good. Drought in northern North Korea along the Yalu River seriously hurt production not so much of rice but of crops such as corn, wheat and potatoes. The “market” price of rice as published by DailyNK (<http://www.dailynk.com/english/index.php>) is still lower than the pre harvest price. However, we will see over the next few months exactly how much rice was grown by measuring the price increase in the markets. These markets are also influenced by trade with the Peoples Republic of China (PRC) and so may be some indicator of the amount of trade between the two countries.

I think the Chinese are doing a lot. We do think they could do more with the oil, and we're really asking them to please restrain more of the oil – not cut it off completely. That was the most effective tool the last time the North Koreans came to the table, was cutting the oil off. Thanks.

(<https://www.state.gov/secretary/remarks/2017/11/276091.htm>) So far the PRC has evidently cut off much of the former oil exports to North Korea. Articles in the Daily NK indicate that people driving motor vehicles to the PRC do so with mostly empty fuel tanks. They fill up their tanks in the PRC and then sell the excess fuel in North Korea.

The D.P.R.K.'s relentless pursuit of nuclear weapons and the means to deliver them must be reversed. Together the international community must continue to send a unified message to North Korea that the D.P.R.K. must abandon its WMD programs. All nations must continue strong economic and diplomatic measures. In addition to implementing all existing UN sanctions, the international community must take additional measures to enhance maritime security, including the right to interdict maritime traffic transporting goods to and from the D.P.R.K.

(<https://www.state.gov/secretary/remarks/2017/11/276019.htm>)

That sounds an awful lot like Tillerson is hinting at a blockade. Blockades are an act of war and would undoubtedly be seen as such by North Korea.

Also at risk In this confrontation are the Winter Olympics scheduled in Seoul for February 9, 2018. South Korea has invited North Korea to send a delegation. So far no word from the North. Even if there is no invasion this Winter, North Korea could still sabotage the Olympics by many other means.

This just popped up on Zero Hedge. I may have to rethink my time line.

According to the ImageSat analysts, who are closely following North Korean military activity, this is "the first time that they have decided to rebuild a site that they have used before."

The photos, dated Nov. 23 and 24, appear to show the development of another launch pad just a few yards away from the one used during the July 4 Hwasong-14 ICBM launch, as well as a newly renovated access road.

...The [Hwasong-15](#) rocket tested by the North Tuesday was the most powerful of the three ICBMs tested by the Kim regime so far. Furthermore, the mobile night launch appeared aimed at testing new capabilities and demonstrating that Pyongyang would be able to strike back to any attempt at a preventative strike against the regime. The missile's peak height and record flight time also helped confirm the Pentagon's worst fears: The North now possesses the capability to strike nearly any target on the continental US. <http://www.zerohedge.com/news/2017-11-30/satellite-photos-show-north-korea-preparing-another-missile-launch>

Somewhere ahead of us is presumably an atmospheric test of a thermonuclear weapon delivered by a ballistic missile. This would be Kim's stated ultimate proof that the continental United States and every other possession short of it is in mortal danger.

"Among the causes of Germany's surrender the blockade seems to be the most fundamental. Its existence is the surest answer to the question whether but for the revolution the German armies could have stood firm on their own frontiers. For even if the German people, roused to a supreme effort in visible defense of their own soil, could have held the Allied armies at bay, the end would have only been postponed-- because of the grip of sea power, Britain's historic weapon." (B. H Liddell-Hart, *Strategy*, ISBN 978-0-652-01071-0, pg. 204)

This appeared to be out of place until I realized that we are doing the same thing to North Korea. Imperial Germany was defeated because her population was starving. While you could argue that the Kaiser had supreme control over his people and that the war could be continued to a stalemate, you would be wrong. The Triple Alliance was destroyed. Germany alone remained. Her internal resources were not sufficient to carry on for another year.

We don't know what resources North Korea really has available. We can only make estimates. So far those estimates have more often than not been wrong. The concept of *Juche*, of self sufficiency, is buried deep in the psyche of North Korea. In the end though, *Juche* requires the raw materials necessary to be self sufficient. Like the plant in *The Little Shop of Horrors*, North Korea cannot feed itself. It must have help.

Probably the most important factor in Kim's calculations is just how far he can let the KPA degenerate. Based on the medical condition of Sgt. Oh the defector, not much farther. The semi annual training cycle ends some time around December 15. We should see reports of live firings for the next two weeks. That is normal. Any more launches of ICBMs would be a sign of serious deterioration in the condition of North Korea. How is your "Earthquake preparedness"?

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This situation is moving fast enough that a lot of what I write is obsolete before I can get it out.