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## Issue Brief

*(Views expressed in the brief are those of the author, and do not represent those of ISSI)*

# North Korea's ICBM Tests: Potential to hit the US

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North Korea tested an intercontinental ballistic missile (ICBM) on July 4 and 28, 2017. This has again raised fears that Pyongyang now has the ability to hit US mainland. Relations between the two countries have been tense for months with both exchanging threats that they would not hesitate to go to war. North Korea was previously thought to be developing long range missile capabilities, that may be operational in a decade or so. However, with the latest Hwasong-14 test, the estimates of North Korea's ability to hit US mainland have been revised. The threat posed by North Korean ICBMs seems more pressing. To top it up North Korea conducted its sixth nuclear test on September 3, 2017 which appears to be a much powerful bomb than its previous ones. It is believed to be a hydrogen bomb. This indeed has heightened the threat perceptions of the West, especially the US. With the possibility that North Korea now has ballistic missiles that can reach the US mainland, the latest nuclear test poses a serious threat to the US.



The first Hwasong-14 missile test flew to a range of 934km and reached an apogee of 2,802 and was in the air for 37 minutes. The Hwasong-14 missile test reportedly flew 3700km into the sky, for a total flight time of about 47 minutes. Taking into consideration the range, apogee and flight time of the first test, experts assessed that if the missile was fired on a straighter trajectory, it would be well in excess of the 5,500 km range that is classified as an ICBM.<sup>1</sup> David Wright, a physicist and missile expert at the Union of Concerned Scientists, estimated a minimum demonstrated range of 6,700 km, which means that the missile could target Alaska and potentially reach Hawaii with a modified payload. Another missile expert John Schilling, estimates a range closer to 8,000 km.<sup>2</sup> With the second test, the estimates of the missile's range increased considerably. David Wright estimates it could travel 10,400 km or more,

<sup>1</sup> Ankit Panda and Vipin Narang, "North Korea's ICBM: A New Missile and a New Era," *The Diplomat*, July 7, 2017, <http://thediplomat.com/2017/07/north-koreas-icbm-a-new-missile-and-a-new-era/>

<sup>2</sup> Ibid.

putting the west coast of the US easily in range.<sup>3</sup> It would thus have major US cities such as Los Angeles, Denver and Chicago well within its range, with the possible ability to reach as far as New York and Boston. The rotation of the Earth increases the range of missiles fired eastward, depending on their direction. David Wright has calculated the range of the missile in the direction of some major US cities with the approximate results in the Table below.

City	Distance from North Korea	Range of missile toward city
Los Angeles	9,500 km (5,900 mi)	11,700 km (7,250 mi)
Denver	9,800 km (6,100 mi)	11,400 km (7,100 mi)
Chicago	10,400 km (6,500 mi)	11,100km (6,900 mi)
Boston	10,750 km (6,700 mi)	10,750 km (6,700 mi)
New York	10,850 km (6,750 mi)	10,850 km (6,750 mi)
Washington DC	11,000 km (6,850 mi)	10,900 km (6,800 mi)

**Source:** David Wright, "North Korean ICBM Appears Able to Reach Major US Cities," July 28, 2017, <http://allthingsnuclear.org/dwright/new-north-korean-icbm>

This indeed is a significant achievement for North Korea and also has certain implications for the US and its allies in the region. North Korea has been pursuing a nuclear capability, especially the ICBM capability since they believe it is the only guarantee against the US coercion and toppling of Kim Jong Un regime. The US would have to adjust to the sense of vulnerability that its mainland is now within the reach of North Korean missiles. The South Koreans and Japanese have lived with this sense of vulnerability for quite some time. In practical terms, the latest development means that the US cannot threaten a conventional invasion of North Korea without risking nuclear strike on US mainland. It also has implications for its allies in East Asia. It would also affect the credibility of US extended deterrence commitments to Japan and South Korea. In effect, it means that the window for military action against North Korea has now closed.

One possible option for the US is to learn to live with a nuclear North Korea and practice deterrence. However, this may be problematic in the context of providing extended deterrence to its allies - South

<sup>3</sup> "North Korea launches ICBM with potential to reach New York," *New Scientist*, July 28, 2017 <https://www.newscientist.com/article/2142224-north-korea-launches-icbm-with-potential-to-reach-new-york/>

Korea and Japan. Would the US be willing to respond with a counter strike if North Korea launches a nuclear attack on its allies? Would this would mean putting its own cities at risk of a nuclear strike by North Korea. Probably not.

Another possible option is to impose sanctions on North Korea combined with international pressure. The latest round of United Nations Security Council (UNSC) sanctions came on September 11, 2017. The latest UNSC Resolution 2375 aims at capping North Korea's oil imports, end additional overseas labourer contracts, suppress smuggling efforts, stop joint ventures with other nations and sanction designated North Korean government entities.<sup>4</sup> Sanctions have been imposed on North Korea even in the past. However, they have not had any significant impact in capping North Korea's nuclear and missile programme. Therefore, this option can be exercise in conjunction with other options.

The other option is to pursue a diplomatic approach with North Korea. Although the track record for negotiations with Pyongyang is not so good, it remains the only logical solution. Russia and China have offered to broker a diplomatic rapprochement between the US and North Korea with phased steps like cancelling US-South Korea joint exercises that anger North Korea, in return for cessation of nuclear and missile tests by the latter. The US can no longer threaten war on North Korea or coerce it. Although the US has in the past rejected all such proposals, it only leaves taking diplomatic steps as an option towards lessening tensions on the Korean Peninsula.

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<sup>4</sup> Zachary Cohen and Richard Roth, "UN Passes Fresh Sanctions on North Korea," *CNN*, September 12, 2017