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North Korea's Musudan Missile: An Evolving Threat

By Nah Liang Tuang

Synopsis

North Korea's recent failures to launch intermediate range missiles should not be derided prematurely. Pyongyang has the time and political will to refine its Musudan missile into a viable threat.

Commentary

NORTH KOREA'S failed tests of its intermediate range Musudan missile may give anti-Pyongyang regime watchers a sense of *Schadenfreude* or pleasure from Kim Jong-Un's misfortune. Pyongyang's three tests in April were clearly unsuccessful while its latest test on 31st May resulted in the *Musudan* exploding on its launch pad.

However, if the DPRK's attempts to build a serviceable satellite launch vehicle or long range ballistic missile are indicative, it would be premature and ill-advised to dismiss North Korea's intermediate range *Musudan* development.

Tenacity of Pyongyang's Missile Development

It took the Pyongyang regime four failed attempts before it achieved a modicum of success with its long range missile/satellite vehicle programme. That began with a *Paektusan* rocket based on a *Taepodong-1* missile which blew up in mid-flight on 31 August 1998. Thereafter, a supposedly more developed missile, the *Taepodong-2* test fired on 5 July 2006 failed about 40 seconds after launch. Subsequently, purported satellite-launch vehicles based on the *Taepodong-2* named *Unha* were launched/tested in April 2009 and 2012 but were also unsuccessful.

Finally, an *Unha-3* rocket managed to deliver a payload into an unstable orbit in

December 2012. In total, the DPRK required 5 attempts to achieve a degree of long range rocket efficacy. Considering that the United States, the Soviet Union, China and other missile-capable nations took longer and incurred more failures to achieve the same progress, North Korea's missile programme should not be derisively dismissed.

While no one should assume that the fifth test of the *Musudan* would be successful just as the DPRK's fifth long range rocket achieved nominal success, the Kim regime's missile development establishment will learn from the previous tests and have the requisite political support and funding to doggedly pursue its work. An operational *Musudan* is thus a matter of "when" rather than "if".

A Rebalancing towards IRBMs?

Notwithstanding Pyongyang's rhetoric about purported abilities to deliver a nuclear warhead to the continental US (which requires an Intercontinental Ballistic Missile or ICBM); its declared capability to miniaturise a nuclear warhead for the aforementioned ICBM; and dubious North Korean claims that such a warhead will be encased in DPRK-developed heat shielding, enabling it to survive the high temperatures of re-entry into the earth's atmosphere; the fact remains that popular consensus amongst well-informed analysts judges the North as being nowhere near possessing a usable ICBM.

With this in mind, there exists the possibility that the Kim regime might be reallocating resources away from ICBM development (missiles with a minimum range of 5,500 km) and towards Intermediate Range Ballistic Missiles or IRBMs (missiles with ranges between 3,000 and 5,500 km) like the *Musudan*. With four tests within the first five months of 2016, Kim Jong-un and his advisers could have reasoned that an operational missile which can reliably hit US territory and military hub of Guam would be better than an uncertain ICBM model which has a good chance of falling short of the US mainland.

Moreover, apart from the greater technical feasibility of building a shorter-range missile, the *Musudan* is estimated to be able to accommodate a 1,000 – 1,250 kg warhead. Even as accurate intelligence concerning North Korean nuclear warhead miniaturisation capability is lacking, the *Musudan's* generous maximum warhead payload allows Pyongyang to more readily mount a credible nuclear deterrent or threat against the US and Washington's regional allies.

Measures to Stymie Pyongyang's Missile Ambitions

Acknowledging the DPRK's technical motivations for building IRBMs does not mean that nothing can be done to suppress or restrict Pyongyang's missile programme. There are existing tightened United Nations sanctions imposed after the North's fourth nuclear test and most recent long-range rocket test in 2016 (UNSC resolution 2270), which prohibit the sale of all aviation and rocket fuel to North Korea, among other measures.

In addition China, which is Pyongyang's only reliable link to the world economy,

should be firmly reminded to maintain strict export controls on all rocket fuel which Pyongyang might try to import through third party channels.

Additionally, Washington, Seoul and Tokyo could also attempt to more stringently enforce pre-existing sanctions by applying more pressure to convince all known international suppliers of high strength low weight metals or products useful for rocket manufacturing to desist from doing business with all entities which might even be remotely related to the DPRK.

Lastly, leveraging on Beijing's opposition to Washington's deployment of the Theatre High Altitude Air Defence (THAAD) system in South Korea as a means to counter any North Korean missile attack, China could be quietly told that THAAD might not be necessary if sanctions were strictly enforced such that Kim Jong-un's missile ambitions could be effectively controlled.

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