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JAPAN'S BALLISTIC MISSILE DEFENCE SYSTEM AMIDST THE GROWING NORTH KOREAN THREAT

Piyush Ghasiya
Research Associate, CAPS

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On 4th July 2017 (Independence Day of the U.S.), North Korea gave a surprise gift to the U.S. in the form of its first ICBM- Hwasong-14 which according to the experts has the potential to reach till Alaska. In the same month on 28th July 2017, North Korea again tested the same Hwasong-14, which flew around 45 minutes, and achieved the maximum height of 3700 km and covered a distance of 1000 km.¹ According to David Wright-missile expert from the Union of Concerned Scientists, if this missile were fired upon a flatter (standard trajectory), it would have reached as far as the U.S. cities such as Denver, Chicago, Los Angeles, New York and Boston.²

The U.S. appears to be in the range of North Korean missiles, the question regarding the capabilities of its major allies such as Japan and South Korea to defend the U.S. against the North Korean missiles is rising again. This event led to the temporary deployment of additional THAAD

(Terminal High Altitude Area Defence) batteries by South Korea. However, THAAD has proven capabilities to work against short, medium, and intermediate-range ballistic missile systems. Since it cannot intercept ICBM, the North Korean Hwasong-14 would be out of the coverage area of THAAD.³

Presently Japan has two layers of missile defence system which includes: Japan's Maritime Self Defence Forces (MSDF) and Air Self Defence Forces (ASDF). MSDF has Aegis destroyers equipped with Standard Missile-3 (SM-3) interceptors. SM-3 interceptors are tasked to stop missiles in the outer atmosphere. MSDF has four equipped Aegis destroyers namely JS Kongo, JS Myoko, JS Chokai, and JS Kirishima and talks are going on to upgrade two more with this defence system. Whereas, Japan's ASDF has Patriot Advanced Capability-3 (PAC-3) surface-to-air guided interceptors. PAC-3 works as next level of defence shield. With the latest round of

missile tests by North Korea, talks to buy another level of defence system has picked up the pace. Aegis Ashore and THAAD are two contenders from which Japan is planning to choose its next level missile defence:

a) The quality that makes THAAD (a transportable system) a strong contender is its ability to intercept ballistic missiles not only inside the atmosphere but also outside the atmosphere during their terminal or final phase of flight. This quality is critical for multilayer missile defence system which makes THAAD a perfect fit between endo-atmospheric Patriot interceptors and exo-atmospheric Aegis interceptors.⁴ However, one thing which is going against THAAD, especially in case of Japan, is its cost. Each THAAD battery cost around \$900 million and Japan need a total of six missile interceptors to cover its complete area. Moreover, China opposition is also one of the factors that go against Japan's THAAD deployment. The resistance was visible when South Korea deployed two THAAD launchers in May. China imposed unofficial sanctions when Chinese tourists were encouraged to boycott South Korea and Chinese consumers attacking Korean companies online. Foreign ministry spokesperson also warned against the further deployment of THAAD.⁵ China's fury against THAAD deployment by South Korea can be understood from the fact that

THAAD has sophisticated radar capabilities that can track China's missile system which will give the U.S. a significant lead in a future conflict.⁶ If Japan also deploys THAAD, then it has to face ire of its leading trading partner China.

b) Aegis Ashore is a land-based component of the Aegis Ballistic Missile Defence (BDM) system developed for warships. Factors that are working in favour of this system include cost, coverage area, and familiarity. Each battery of Aegis Ashore is around \$718 million. Aegis Ashore has more coverage area than THAAD due to this less number is required. Since Japan's MSDF is already using Aegis system, it is familiar with the Aegis system. Aegis Ashore will also be equipped with SM-3.

With all these benefits of Aegis Ashore, Japan is finally tilting towards purchasing it and evaluating locations to base this system. For securing Northern part of Japan, the government is considering Akita or Niigata prefecture. While Nagasaki prefecture is the choice to secure the southern part of Japan.⁷ Since this is an unplanned move, the installation plans would be finalised only by the end of 2017, the cost of the new Aegis Ashore system would be included in fiscal 2018. Japan wants to have this new system as soon as possible, and it hopes to be operational by 2023-24.⁸

Japan is also seeking Spy-6 radar technology for its BDM from the U.S., but till now its effort to secure that from their ally have come to nought. Spy-6 will boost the range of the BDM range dozens of times. In the present situation while interceptors have enough range to strike a missile into a high space but radar are only powerful enough to detect the threats when it is much closer.⁹

These BMD such as Aegis Systems (both land and sea version), PAC-3 or even THAAD for that matter are incapable of protecting against ICBM. As mentioned earlier the Hwasong-14 missile has the range of an ICBM. That means that even after receiving Aegis Ashore will not help Japan much. At the moment there are only three systems that can intercept ICBMs. That includes Russian A-135 system, The U.S. Ground-Based Midcourse Defence (GMD), and Israel Arrow 3 system.

Furthermore, a recent confidential U.S. intelligence report (reviewed by *The Washington Post*) makes the case more complicated. According to the report, North Korea has made a breakthrough and is now capable of building nuclear bombs small enough to fit into the ICBMs.¹⁰

North Korea which is moving at breakneck speed to acquire or develop the missile and nuclear technology even when the country is under heavy economic sanctions. Earlier it was only South Korea and Japan that were in danger

from the North Korea, but now the U.S. is also in the range of destruction as the Hwasong-14 missile can reach to the U.S. cities. It is evident that with the present missile defence system, Japan can't defend the U.S. against the growing North Korean arsenal.

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])

Notes

¹ Lendon, Brad. "US slams North Korea missile test as Kim claims 'whole US mainland' in reach." *CNN*. July 30, 2017, <http://edition.cnn.com/2017/07/29/asia/north-korea-intercontinental-ballistic-missile-test/index.html>. Accessed October 06, 2017.

² Wright, David. "North Korean ICBM Appears Able to Reach Major US Cities." *All Things Nuclear*. July 28, 2017, <http://allthingsnuclear.org/dwright/new-north-korean-icbm>. Accessed October 06, 2017.

³ Panda, Ankit. "China Hits Back at South Korea's THAAD Deployment Following North Korea's Latest ICBM Test." *The Diplomat*. August 08, 2017, <https://thediplomat.com/2017/08/china-hits-back-at-south-koreas-thaad-deployment-following-north-koreas-latest-icbm-test/>. Accessed October 06, 2017.

⁴ "Terminal High Altitude Area Defense (THAAD)." *Missile Threat CSIS*. September 2017, <https://missilethreat.csis.org/system/thaad/>. Accessed October 09, 2017.

⁵ Lee, Taehoon, and James Griffiths. "South Korea expects North to launch ICBM on Saturday, prime minister says." *CNN*. September 07, 2017, <http://edition.cnn.com/2017/09/07/asia/south-korea-thaad-north-korea/index.html>. Accessed October 09, 2017.

⁶ Taylor, Adam. "Why China is so mad about THAAD, a missile defense system aimed at deterring North Korea." *The Washington Post*. March 07, 2017, https://www.washingtonpost.com/news/worldviews/wp/2017/03/07/why-china-is-so-mad-about-thaad-a-missile-defense-system-aimed-at-deterring-north-korea/?utm_term=.13dd49bedfa3. Accessed October 09, 2017.

⁷ Yeo, Mike. "Japan evaluating sites for Aegis Ashore missile defense system." *DefenseNews*. September 26, 2017, <https://www.defensenews.com/global/asia->

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⁸ Sakai, Kohei. "Japan to deploy new land-based missile defense system." *Nikkei*. August 17, 2017, <https://asia.nikkei.com/Politics-Economy/International-Relations/Japan-to-deploy-new-land-based-missile-defense-system?page=1>. Accessed October 09, 2017.

⁹ Kelly, Tim, and Nobuhiro Kubo. "Exclusive: Japan seeks new U.S. missile radar as North Korea threat grows - sources." *Reuters*. August 30, 2017, <https://www.reuters.com/article/us-northkorea-missiles-japan-radar-exclu/exclusive-japan-seeks-new-u-s-missile-radar-as-north-korea-threat-grows-sources-idUSKCN1BA0TS>. Accessed October 09, 2017.

¹⁰ Lockie, Alex. "US intelligence concludes North Korea has made a breakthrough and can fit nuclear warheads on missiles." *Businessinsider*. August 08, 2017, <http://www.businessinsider.in/US-intelligence-concludes-North-Korea-has-made-a-breakthrough-and-can-fit-nuclear-warheads-on-missiles/articleshow/59975320.cms>. Accessed October 09, 2017.