The Strategic Significance of Agni-V

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Introduction

Fifteen years after having tested its nuclear weapon, and having remained engaged in the task of operationalising its nuclear deterrent, India closed 2013 after having successfully tested the Agni-V, the 5,000-5,500 km long range ballistic missile[1] twice. The first test of this missile with the longest range that India has tested so far was carried out on April 19, 2012, and the feat was repeated on September 15, 2013. According to the Defence Research Development Organisation (DRDO), the developer of all Indian missiles, another 3-4 tests would be necessary before the missile can be ready for induction into the Indian Army. Thereafter, operational deployment of the missiles will be determined by the pace of their industrial production.

The days immediately after both the successful tests were predictably marked by euphoric media hype. In newspapers and by many electronic news channels, the Agni-V was graphically referred to as a "China killer". Elaborate diagrams showed the radius of the missile covering several important Chinese cities. The Chinese media, meanwhile, put its own spin to the story by alleging that the range of the Indian missile had been artificially reduced to keep to 5,000 km though the actual range was much longer and could bring the "whole of Asia and 70 per cent of Europe" within its sweep.[2] The Xinhua news agency issued a dispatch that carried a map showing Moscow, Tehran and Jakarta within the range of the Indian missile.

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While officialdom in India ignored these claims, as did also other Asian and Western capitals, there is no doubt that given India's threat perception, the purpose of having a missile of this range is to be able to enhance its strategic reach into China. In order to deter a nuclear Pakistan, India already has an operational capability in the Agni-I (700 km) and Agni-II (2,000+ km), besides the shorter range variants of the Prithvi. It is China that has been out of reach of a credible Indian delivery system, though in dire circumstances, the use of the Mirage 2000 or SU-30 aircraft on a one-way mission to drop a nuclear warhead on counter-value targets has been considered a possibility. Yet, it has always been clear that credible deterrence demands a reliable, long range ballistic missile – a void that the Agni-V will fill.

Now that the frenzied reactions to the testing of the missile have receded, it is time to undertake a sober analysis of what this development means for India's nuclear strategy and what more is still needed to establish the credibility of nuclear deterrence.

Placing Agni-V in the Matrix of Credible Nuclear Deterrence

Credible nuclear deterrence requires the availability and meaningful integration of a few elements that collectively constitute the nuclear arsenal and strategy. Demonstration of capability to build the warhead and the necessary delivery systems is an important constituent of this. The other two dimensions include having the resolve to use that capability, and, most importantly, the communication of both the capability and the resolute political will. It would make no sense to have the capability and the steadfastness to use it, but not credibly convey the same to the adversary. Given that nuclear deterrence involves psychological manipulation of the adversary's mindset, nuclear signalling is a critical necessity. This may be undertaken through periodic testing of missiles to demonstrate acquisitions/improvements in delivery vectors, or through communication of political messages such as information on meetings of the national nuclear command authority to examine the nuclear threat environment, nuclear policy statements by designated officials, or conduct of military war games.

The development of the Agni-V, including the process of its testing, leading up to its eventual deployment, is a measure that signals capability and resolve. The range of the missile indicates the ability to reach high value targets in China and the message that it conveys is that in case of nuclear use against India, retaliation by the Agni-V would cause unacceptable damage, thereby punishing the adversary for initiating a nuclear strike on India.

As is evident, the concept of nuclear deterrence as articulated by the Indian nuclear doctrine is premised on the threat of punishment. In this formulation, it is essential that the assuredness or the certainty of retaliation to cause unacceptable damage is sufficiently and credibly conveyed. This obviously requires having the delivery systems that can reliably reach and effectively destroy the designated targets. At the same time, India has also accepted a no first use nuclear strategy which imposes the need upon the country to build a nuclear force that can survive the enemy's first strike, and be readily available to punitively retaliate. This requires building adequate survivability provisions to ensure assured retaliation. In this context, the Agni-V, yet again, purports deterrence by presenting itself as a mobile missile. In fact, an important way of circumventing the vulnerability of nuclear assets in silos is to make them mobile. If the missiles can be frequently moved around, it obviously complicates the adversary's ability to constantly monitor and track them with the objective of accurately targeting them. Furthermore, if dummies were also to be mixed with actual missiles, it would severely complicate the targeting requirements of the adversary since he could never be sure of the number of real missiles that would survive his first strike.

Advantages of Agni-V

The range of the Agni-V that enables India to hold China's valuable areas and vital points to ransom is its biggest advantage. Suggesting the ability to decimate a target that Beijing holds dear, however, barbaric this may sound, is the criterion for establishing the credibility of own deterrence. With its varied ranges of nuclear capable missiles, China has long had several major Indian cities in its nuclear crosshairs. The range of the Agni-V gives India the same reach into China.

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Yet another notable advantage of the new missile is that it is solid fuelled, which enables it to be rail and road mobile, thereby increasing survivability. India's extensive road and rail networks offer the option of moving the missile around, if other logistic requirements of adequately hardened infrastructure and sufficient fuel reserves to ensure freedom of movement can be met. Interestingly, soon after India tested the Agni-V, some Chinese commentators were quick to point out the inadequacies in India's roads, bridges, and rail infrastructure to support a missile weighing 50 tonnes. This is a valid point. Indeed, unless serious attention is paid to building the road and rail infrastructure that can sufficiently support a missile of the size and weight of the Agni-V, it would negate the advantage of its mobility.

Solid fuelled missiles also offer the benefit of a quick response and longer storage life. A liquid fuelled missile takes a longer time for preparation and in case of non-use of the missile after fuelling, the fuel must be drained out at the earliest owing to its highly corrosive nature. In contrast, a solid fuelled missile offers a less cumbersome option. The Agni-V, therefore, will provide ease in storage and transportability besides a longer shelf life. Compression of preparation time for nuclear use, though not especially significant with a no first use strategy that does not demand the missiles to be on hair trigger alert, nevertheless could offer the benefit of easing logistics of coordination of different elements of the arsenal in times of crisis.

The Agni-V also has implications for increasing India's military capability in space. While India maintains a firm position against weaponisation of space, trends are fast emerging among the most active space-faring nations such as the USA, Russia and China to keep all options open. In this context, it is hardly surprising that former DRDO Chief, Dr Saraswat, was candid in admitting that the Agni-V had "ushered in fantastic opportunities in, say building Anti-Satellite (ASAT) weapons and launching mini/micro satellites on demand". While a decision to conduct an ASAT test would require political authorisation at the highest level, and is unlikely to be made in a hurry, there is no doubt that India's theoretical capability to do so has been buttressed with the successful testing of the Agni-V, and this fact is not lost on other nations.

What After Agni-V?

As operationally deployed Agni-V missiles emerge on the scene, hopefully before the end of this decade, it would certainly enhance the credibility of India's deterrence, especially vis-a-vis China. However, work on a few other aspects – both technological and political – is necessary to further the cause of credible deterrence. In the technological trajectory, what should the DRDO be working on next? Three capabilities need to be paid attention to.

The most urgent pending technological task is the operationalisation of the sea-based leg of India's nuclear triad. While mobility is an important advantage of land-based missiles, the highest level of survivability does lie in placing nuclear tipped missiles with sufficient ranges on nuclear powered submarines (SSBNs). These comprise the most survivable of the three delivery vectors and, hence, the projection of credible deterrence is best achieved through SSBNs carrying Submarine Launched Ballistic Missiles (SLBMs) of adequate ranges. The INS *Arihant*, India's first SSBN is supposed to be ready for sea trials some time in early 2014. However, this marks but the start of what will be a long journey to building a credible operational SSBN force. While more boats are planned, the aspect in which India is still lagging is the range of the SLBM. What has been tested until now and that too from an underwater pontoon, not from a submarine, is the Sagarika with a range of 700-750 km only. This is inadequate for an operational Indian SSBN force to signal credible deterrence to China. The missile ranges have to go up to at least 3,000-5,000 km so that they can reach targets that would constitute unacceptable damage for the adversary while keeping themselves out of harm's way. A submarine version of the Agni-V should be the next technological challenge for the DRDO in the service of credible deterrence.

Secondly, technology focus has to be retained on improving the penetrability of Indian missiles. Given that China has a sort of operational ballistic missile defence, though of a low order, the ability of Indian missiles to evade interception will be a necessity to convey the capacity to cause unacceptable damage. Development of Multiple Independently Targeted Reentry Vehicles (MIRVs), which hit the same target with many bombs, and Manoeuverable Reentry Vehicles (MARVs) that can drastically change trajectory to evade interception in the terminal stage, are capabilities that will help in buttressing credible deterrence.

Thirdly, improving the accuracy of the Agni-V would be a worthwhile endeavour. Of course, this is not necessary for the missile in its nuclear role and, according to reports, it already has a fairly good accuracy which should suffice for nuclear retaliation on densely populated cities. In any case, for the time being, the missile is to be built in adequate numbers to project nuclear deterrence. But, in the long run, an accurate long range ballistic missile will provide the option of using it to convey conventional deterrence too. It may be recalled that the last US Nuclear Posture Review promotes the idea of global prompt strike which envisages the use of strategic missiles with conventional warheads in order to reach distant but time sensitive targets. Blurring of lines on conventional and nuclear missiles appears to be the emerging trend and China too keeps both kinds of missiles under the control of the Second Artillery Corps. India must be mindful of this trend and seek to enhance the accuracy of all its missiles for better conventional deterrence.

Power projection is a valid task of a missile and the very act of testing one sends a powerful signal. The two tests of the Agni-V have been duly noted by India's regional adversaries as well as by the international community. India's march towards credible deterrence, however, is yet work in progress. Capability build-up is necessary, but it can meet only half the requirement of credible deterrence. The second half must be conveyed through signaling of political resolve, including in dimensions other than the nuclear domain. Periodic statements by senior military and political officials and the shaping of the debate at home and outside to counter the assumptions that India's retaliation would be found wanting when necessary are critical additional dimensions of deterrence that the country has to work upon.

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Notes

1. A long range ballistic missile was the terminology used by India to classify the missile, though as per Western standards, it could be described as an Intermediate Range Ballistic Missile (IRBM).
2. For more on China's response, see Saibal Dasgupta, "Agni-V: China Says India Underplaying Agni, it can Hit Europe", *The Times of India*, April 20, 2012.