

DYNAMICS AND IMPLICATIONS OF INDIA'S MIRV DEVELOPMENT

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



On March 11, 2024, India conducted a flight test of the Agni-V missile with Multiple Independently Targetable Reentry Vehicle (MIRV) technology under “Mission Divyastra” or celestial weapon. This tremendously increases India’s land-based missile strike capabilities – both in terms of range and firepower. Agni-V Intercontinental Ballistic Missile (ICBM) with a 5000 km range puts India among the few countries that have this capability including the United States, United Kingdom, France, Russia, and China. Agni-V missile brings almost all of Asia, parts of Europe, and Pakistan and China in its range. This capability is likely to have implications for Indian nuclear doctrine; force posture; nuclear deterrence dynamics in South Asia; and regional balance of power.

Range of the Agni-5 missile



Source: "India tests Agni-5 missile with MIRV tech, sends message to Pakistan & China," *Times of India*, <https://timesofindia.indiatimes.com/india/india-tests-agni-5-missile-with-mirv-tech-sends-message-to-pakistan-china/articleshow/108399971.cms>

Pakistan's Foreign Office spokesperson, Mumtaz Zahra Baloch, said that Islamabad had taken note of the Indian missile test on March 11, 2024, as New Delhi shared its advance notification to Islamabad. She did, however, highlight that India did not follow the three-day timeline stipulated in Article 2 of the Agreement on Pre-notification of the 'Fight Testing of Ballistic Missiles.'¹ She stressed that the "Agreement on pre-notification we believe must be complied with in letter and spirit."²

What is MIRV Technology?

The MIRV technology essentially means that a single missile can carry multiple warheads and can strike a single target location or multiple dispersed locations. India's MIRV-capable missile can carry three to four warheads. It is the quickest and most economical means to increase the number of deployed warheads by a nuclear weapons state.

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- ¹ Article 2: "Each Party shall notify the other Party, no less than three days in advance of their commencement of a five day launch window within which it intends to undertake flight tests of any land or sea launched, surface to surface ballistic missile." "Agreement Between India And Pakistan on Pre-Notification of Flight Testing of Ballistic Missiles," October 25, 2012, <https://www.stimson.org/2012/agreement-between-india-and-pakistan-on-pre-notification-of-flight-tes/>.
 - ² "Pakistan urges India to Comply with Stipulated Timeline of Flight Testing of Ballistic Missiles," *The Economic Times*, March 14, 2024, <https://economictimes.indiatimes.com/news/defence/pakistan-urges-india-to-comply-with-stipulated-timeline-of-flight-testing-of-ballistic-missiles/articleshow/108502028.cms?from=mdr>.

This technology was first developed and deployed by the U.S. on its ICBMs in 1970, and on Submarine-launched Ballistic Missiles (SLBM) in 1971. Later, the Soviet Union developed and deployed the MIRV technology. The UK and France also have MIRV technology on their SLBMs while China has it deployed on both ICBM and SLBMs.³

Implications of the Technology

MIRV capability would have several implications. MIRV-ed missiles can penetrate ballistic missile defences by overwhelming the defence system of the adversary trying to intercept multiple warheads. Moreover, the deployment of MIRV-ed missiles on submarines increases their survivability since it is challenging to find nuclear submarines.

MIRV technology on ICBMs can be destabilizing for many reasons. MIRV-ed ICBMs can undermine stability by greatly increasing a country's first-strike capability against an adversary's forces, creating preemptive first-strike temptations. At the same time, a MIRV-ed missile is a tempting target for the adversary; if it believes that an enemy's first strike is imminent, it may launch its own. This is known as the "use it or lose it" dilemma and is one of the fundamental problems with MIRV-ed ICBMs.⁴

In the context of China, Indian MIRV capability would create some instability with both countries possessing the capability and BMD systems. However, since China has a much larger nuclear arsenal than India, the MIRV capability, as well as a BMD system, deterrence would not be eroded significantly. With both countries possessing both offensive and defensive capabilities, neither side can launch an assured nuclear first strike, and hope to wipe out the adversary's nuclear forces. Thus, in the India-China dyad, there would be less temptation for a preemptive first strike.

In the future, India's MIRV technology can potentially be installed on other ballistic missiles as well. Eligible candidates would include the surface-launched Agni missile series and the submarine-launched K15 Sagarika and K4 missiles.⁵ Deploying MIRV technology or any nuclear-capable warheads on SLBM would raise questions over India's command and control. Warheads would need to be mated on a submarine and increase the possibility of miscalculation, accidental or

³ Ritu Sharma, "Top US Scientist 'Slams' India's Agni-V Missile Test; Says New Delhi Could 'Disarm' Pakistan With MIRV Tech," *The Eurasian Times*, March 12, 2024, https://www.eurasiantimes.com/top-us-scientist-slams-indias-agni-v-missile-test/#google_vignette.

⁴ Tong Zhao, David Logan, "What if China Develops MIRVs?" March 24, 2015, Carnegie, <https://carnegieendowment.org/2015/03/24/what-if-china-develops-mirvs-pub-59515>

⁵ Rahul Wankhede, "Strategic Shifts: India's MIRV Milestone and Nuclear Policy Dynamics," *The Diplomat*, March 14, 2024, <https://thediplomat.com/2024/03/strategic-shifts-indias-mirv-milestone-and-nuclear-policy-dynamics/>.

unauthorized use with disastrous consequences. In addition, it could ultimately mean that India would increase the number of nuclear warheads to meet its MIRV-ed missile requirements.

In the context of Pakistan, deployment of Indian MIRV technology would be highly destabilizing for deterrence. India possessing MIRV technology, and a BMD system would create first-strike temptations with the hope of destroying the bulk of Pakistan's nuclear forces and absorbing any counter-strike with its BMD systems. MIRV capability ties in with India's recent move towards a preemptive nuclear counterforce strategy against Pakistan.⁶ A U.S. expert Hans Christensen argued that "If either country believed that India could potentially conduct a decapitating or significant first strike against Pakistan, a serious crisis could potentially go nuclear with little warning. Additionally, India's MIRVs might prompt Indian decision-makers to try and pre-emptively disarm Pakistan in a crisis."⁷ Indian MIRV capability would make South Asia highly volatile. It would also act as a force multiplier for India where it can deploy more warheads on fewer missiles. It, thus, increases the vulnerability of a country like Pakistan with a limited nuclear force and a stance of credible minimum deterrence.

While the development of MIRV technology by India is a threat to Pakistan's nuclear deterrence and security in itself, it acquires greater significance when it is put in the wider context of India's move towards a preemptive counterforce strategy against Pakistan, its development of hypersonic missiles,⁸ its pursuit of BMD capability,⁹ as well as its expanding space capabilities that have over a dozen dedicated military satellites. All of these capabilities are ideally suited for a preemptive strike, which can, in theory, be launched against Pakistan to take out its major nuclear forces, and the remaining missiles in a counter-strike can be intercepted by Indian BMD. Together these developments erode nuclear deterrence and make South Asia a highly volatile nuclear theatre.

⁶ For details on Indian preemptive counterforce doctrinal shift see Christopher Clary and Vipin Narang, "India's Counterforce Temptations: Strategic Dilemmas, Doctrine, and Capabilities," *International Security* 43, no. 3 (February 2019): 7-52, and Ghazala Yasmin Jalil, "Shifting Indian Nuclear Doctrine: Implications for South Asian Nuclear Deterrence," in Malik Qasim Mustafa (ed) *Emerging Threats and Shifting Doctrines: Challenges to Strategic Stability in South Asia* (Islamabad: Institute of Strategic Studies Islamabad, 2023).

⁷ Sharma, "Top US Scientist 'Slams' India's Agni-V Missile Test."

⁸ For Details of destabilizing effect of hypersonic missile in South Asia see Ghazala Yasmin Jalil, "Hypersonic Missile Race: Implications for Regional and Global Security," ISSI, Issue Brief, October 2, 2020, <https://issi.org.pk/issue-brief-on-hypersonic-missile-race-implications-for-regional-and-global-security/>

⁹ Ghazala Yasmin Jalil, "Indian Missile Defence Development: Implications for Deterrence Stability in South Asia," *Strategic Studies* 35, no. 2 (Summer 2015).

Options for Pakistan

Pakistan already tested a MIRV missile, the Ababeel, in January 2017, and again in October 2023, with a 2200 km range.¹⁰ It could deploy this to counter instability introduced by India's incessant conventional and nuclear build-up, especially its MIRV capability. Pakistan may also need to make qualitative and quantitative changes to its nuclear forces to preserve the credibility of its nuclear deterrent. Ultimately, it would also have to augment its sea-based nuclear capability to have a credible second-strike capability. At the same time, Pakistan cannot afford a costly arms race with India. However, Pakistan does not need to match India weapon for weapon. Thus, there is no need to pursue a costly arms race. Pakistan only needs to maintain credible nuclear deterrence which can be achieved through concealment and dispersion of nuclear warheads, adjustment to force posture, and a credible second-strike capability.

Conclusion

Ultimately the integration of MIRV capabilities into India's nuclear force boosts its offensive power and complements its preemptive nuclear strike doctrine. MIRVs increase the threats to counter-force as well as counter-value targeting. India's pursuit of MIRV capability will also result in a considerable increase in its nuclear arsenal, necessitating changes by Pakistan to preserve its nuclear deterrence. This would bring yet more instability to South Asia with further impetus for arms racing. It may also be a harbinger of doctrinal changes and force posture alterations.

¹⁰ "Pakistan conducts first flight test of Ababeel surface-to-surface missile," *Dawn*, January 24, 2017, <https://www.dawn.com/news/1310452>.