

PRIMACY OF OFFENCE OVER DEFENCE: INDIA'S BALLISTIC MISSILE DEFENSE (BMD) & PAKISTAN'S STRATEGIC OPTIONS

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Abstract

Ballistic Missile Defence (BMD) as a strategy carries conflicting standpoints for the bearer and the non-bearer of BMD. For a bearer of BMD, it is an effort to protect the humankind from a nuclear holocaust and a move that may eventually lead towards disarmament, whereas, for non-bearer, the deployment of BMD by a rival state is likely to intensify the arms race and increase risk of nuclear strike due to the vulnerability of a non-bearer. The non-bearer of BMD in such circumstances would opt for offensive strategies that may permit it to penetrate the BMD shield so that the rival becomes vulnerable and strategic stability prevails. Against this backdrop, the article discusses fragility of BMD within the ambit of primacy of offense over defence, while linking the historical experiences of the Cold War with the present day perspectives.

Key words: Ballistic Missile Defense (BMD), Antiballistic Missile (ABM), Inter-continental Ballistic Missiles (ICBMs), Offence, Defence, Strategic Stability.

Introduction

"You may not be interested in war, but war is interested in you."
Leon Trotsky

Ballistic Missile Defence (BMD) is a strategy, conceived and designed to intercept and destroy incoming hostile missiles. The strategy was conceptualised in the middle of Cold War, when the Cold War rivals

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- United States of America (USA) and erstwhile Union of Soviet Socialist Republics (USSR) - considered deploying a defensive system to counter incoming nuclear-armed Inter Continental Ballistic Missile (ICBMs). In case of failure of nuclear deterrence between the Cold War rivals, the ICBMs appeared to be the most likely and effective choice to deliver nuclear weapons (NWs) to longer distances with impunity. The strategy conceived to counter these ICBMs was named BMD. In technical jargon, a prototype BMD possesses three components: it should be able to provide early warning about an incoming missile, tracking and destroying it in the final stage through interception.¹

Security of the mainland had been the locus of Cold War rivals against the nuclear armed ICBMs. The US efforts to develop an effective defensive shield – a BMD, started in 1955. Nike Zeus, Nike X, Sentinel and Safeguard are few of the stages of this programme, which it underwent during the period of development.² Likewise, the USSR also started to pursue an ABM system with the name of ‘Galosh’ for the protection of Moscow.³ During the Cold War, despite deliberate efforts by both the states, they could not develop a foolproof defensive shield against ICBM.⁴ This led to a thought process between both Cold War rivals for reaching an agreement to restrict either of the states from developing ballistic missile shield, which resulted into the enactment of Antiballistic Missile (ABM) Treaty of 1972 between both rivals. Apparently, maintaining the then-existing strategic stability through nuclear deterrence was the goal of both the superpowers. In the hindsight, lack of technology forced both states to opt for ABM treaty 1972.

Essentially, US wanted single-handedly to achieve security against ICBMs with the development of BMD. Therefore, even after entering into ABM treaty with the USSR, the US was not satisfied with its security. It still considered development of the BMD a vital objective of the security. Although the ABM treaty of 1972 prohibited any further testing in

¹ Dean A. Wilkening, “A Simple Model for Calculating Ballistic Missile Defense Effectiveness,” *Science & Global Security* 8, no. 2 (1999): 183-215.

² Ernest J. Yanarella, *The Missile Defense Controversy, Strategy, Technology and Politics, 1955-72* (Kentucky: The University Press of Kentucky, 1977), 6.

³ Viktor Koltunov, Alexander Kubyshkin and Vladimir Stepanov, “Anti-ballistic Missile Defense: History and Modern Times,” *Institute of Strategic Stability of the Rosatom State Corporation*, http://stat.mil.ru/files/Anti-ballistic/11_Rosatom_eng.pdf.

⁴ Sidney D. Drell and Wolfgang K. H. Panofsky, “The Case Against Strategic Defense: Technical and Strategic Realities,” *Issues in Science and Technology* 1, no. 1 (Fall 1984): 46.

pursuance of technology and the system,⁵ but a sense of dissatisfaction about security from ICBMs became a corner stone in the US strategic thinking which resulted in Strategic Defence Initiatives (SDI) of 1983. The purpose of the programme was not only restricted to research, but also to develop a system of BMD for protecting the US mainland against any potential threat of nuclear armed ICBMs. During the Gulf Wars, US deployed module of BMD to protect the US and allies' forces from the missile emanating from Iraq. In the year 2001, in the unipolar world, the US withdrew from the ABM treaty of 1972 and decided to deploy BMD. However, this time instead of following a contentious strategy in isolation, the US decided to follow a hegemonic path to extend BMD to allies in Europe, Eastern Europe, East Asia and South Asia. This will remain a question, whether the efforts by the US to develop a BMD system was sagacious and well-intended to ensure security of the world or a misleading move to create schism in the regional and international balance of power.

Drell has defined the balance of offensive forces as 'offense dominance,' according to which, fear of retaliatory nuclear strike prevents rival state from a nuclear strike;⁶ whereas, BMD carried an equivocal explanation of security having different meanings for the BMD and the non-BMD opponent. A BMD state enjoys security, which will permit it a nuance of offence against an opponent non-BMD state. Thus, a condition of vulnerability required for nuclear stability between nuclear rivals is missing, where a BMD protected state might be tempted for a nuclear strike. Proponents of BMD consider that BMD is not a destructive programme but its real purpose is to protect non-combatants from the perils of nuclear weapons. The deployment of BMD will make the NWs redundant and may as well lead towards abolishment of NWs, a prospective goal of disarmament.⁷

On the other hand, a non-BMD state will strive to ensure its security against a BMD state by either acquiring offensive strategies or developing BMD shield, as both the objectives will generate arms race in the region or between the opponents. Therefore, arms race is the likely consequence of developing the BMD system. The article will bring into consideration these aspects into regional setting of South Asia, where India has been developing its BMD systems to protect itself against missile threats emanating from its regional rivals, namely Pakistan and China.

The inherent advantage in Offense lies in its flexibility and the liberty of action it allows, unlike the relatively rigid 'Defence'. In terms of

⁵ "Treaty between the USA and USSR on the Limitations of ABM System," *Aerospace*, Article I, https://aerospace.org/sites/default/files/policy_archives/Anti-Ballistic%20Missile%20Treaty%20May72.pdf.

⁶ Drell, "The Case Against Strategic Defense," 46.

⁷ *Ibid.*, 46-62.

missile strategy, the country launching the ICBM has nothing to fear except a possible ineffectiveness of the attack or worse—loss of the weapon while the recipient defending country fears the ability of the incoming ICBM to penetrate and cause massive destruction. Faced with the chances of an impending devastation, it has little choice but to ensure interception and destruction of the incoming ICBM. Whereas another opposing form of offense intrinsic to a BMD state is protection available to it against the missile threat, which may permit a BMD state to take an offence against its rival with impunity.

The Regional Strategic Environment

Pakistan, presently, faces numerous security challenges arising from its eastern and western borders. The presence of superpower US as its immediate neighbour in Afghanistan has particularly changed the security environment for Pakistan. Two occasions are of particular importance to Pakistan, when the US violated its airspace. In May 2011, US conducted raid in Abbottabad, Pakistan by violating the Pakistani airspace to hunt and kill Osama Bin Laden⁸ and in November 2011 NATO, helicopters attacked a Pakistan Army Post in Mohmmad Agency, Federally Administered Tribal Areas (FATA) in which twenty -four Pakistani soldiers killed.⁹ This might in fact be indicative of a serious impediment for Pakistan that an overwhelming focus, per force, on protecting its eastern borders for decades has in fact impeded Pakistan's ability and capacity to protect its aerial borders in the west, which has further exacerbated Pakistan's worries concerning its security.

Simultaneously, any strategic development in India is a cause of major security concerns for Pakistan as these directly affect the prevailing strategic stability between the both states.¹⁰ Particularly, in areas where major powers like the US and Russia contribute directly in enhancing the nuclear or strategic capability of India. Few of such noticeable examples in

⁸ Scott Wilson, Craig Whitlock and William Branigin, "Osama Bin Laden Killed in U.S. Raid, Buried at Sea," *The Washington Post*, May 2, 2011, https://www.washingtonpost.com/national/osama-bin-laden-killed-in-us-raid-buried-atsea/2011/05/02/AFx0yAZF_story.html?noredirect=on&utm_term=.a0e7a17619e9.

⁹ Karin Brulliard, "Pakistani Officials Say Alleged NATO Attack Kills 24 Soldiers," *The Washington Post*, November 27, 2011, https://www.washingtonpost.com/world/pakistani-officials-say-alleged-nato-attack-kills-at-least-12/2011/11/26/gIQA2mqtXN_story.html?utm_term=.914b323725c1.

¹⁰ Colin S. Gray, "European Perspectives on U.S. Ballistic Missile Defense," *Comparative Strategy* 21, no. 4 (2002): 279-310, <https://doi.org/10.1080/01495930290043056a>.

strategic domain are the U.S.-India Nuclear Agreement 123 and the US willingness to extend BMD to India. In the nuclear deal, the US has allowed India to continue to build its nuclear stockpiles by intentionally leaving obscurity and uncertainty in the Nuclear Agreement 123 by specifically not accounting for the nuclear waste material, ipso facto which could be used for development of nuclear weapons.¹¹ Besides, the US has been demanding that the proposed Fissile Missile Cut-Off Treaty (FMCT) must be accepted by the nuclear powers without linking it with past fissile material stockpiles.¹² An interpretation of the FMCT in this way will only be more of an obstacle for Pakistan as compared to India in terms of nuclear stockpiles.¹³ The US is also pursuing India's entry into Nuclear Suppliers Group (NSG), an exception to the NSG requirement for full-scope safeguards.¹⁴ This will be a clear oversight of Non-Proliferation Treaty (NPT) regime, where a non-NPT state's entry into NSG is being pursued.¹⁵

Waltz considers that the rivalries between two states have to some extent, influenced development of nuclear weapons in pairs, which has ensured strategic and deterrence stability among them.¹⁶ That said, India's BMD is the cause of strategic instability in South Asia. Interestingly, many powers like the US, Russia, Europe (including NATO) and Israel have stakes in India's BMD programme and are directly involved in its development.¹⁷ In addition, they are doing this apparently without paying due cognizance to the fact that it is going to significantly upset the prevailing strategic stability in South Asia. As the strategy of BMD has a nuance of offence, which will permit India to look for nuclear offence, as it knows it protects itself behind the shield of BMD. According to Toby Dalton and George Perkovich, "the offensive form of damage limitation is the ability to target the adversary's nuclear assets as a way to reduce the number of nuclear weapons that might be detonated on one's own

¹¹ Mirza Nasrullah and M. Sadiq, "Indo-US 123 Agreements: Impacts on Deterrence Stability in South Asia," *South Asian Strategic Stability Institute (SASSI)*, Research Report 07 (January, 2008).

¹² Tariq Rauf, "Engagement on Nuclear Disarmament between Nuclear Weapon-Possessing States and Non-Nuclear Weapon States," *Stockholm International Peace Research Institute (SIPRI)*, Working Paper (2017): 8.

¹³ Asma Khalid, "Pakistan's Policy on FMCT," *Pakistan Observer*, February 7, 2017, <https://pakobserver.net/pakistans-policy-on-fmct/>.

¹⁴ Mark Hibbs, "The Future of Nuclear Suppliers Group," *Carnegie Endowment for International Peace* (2011), https://carnegieendowment.org/files/future_nsg.pdf.

¹⁵ Rauf, "Engagement on Nuclear Disarmament," 8.

¹⁶ Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate Renewed*, 2nd ed (New York: W.W. Norton and Company, 2003), 13.

¹⁷ Zafar Khan, "India's Ballistic Missile Defense: Implications for South Asian Deterrence Stability," *The Washington Quarterly* (Fall 2017):187-202.

territory.”¹⁸ India is maintaining ‘No First Use’ nuclear doctrine as opposed to Pakistan ‘First Use,’ however, despite the India’s draft nuclear doctrine that mentions that it retains a right to use NWs against any perceived threats makes the case of India dubious.¹⁹ However, this may be a polite warning for a non-BMD state about the vulnerability of their nuclear asset to a BMD protected rival. In a situation where India protects itself behind BMD, the ‘First Use’ pillar of Pakistan’s nuclear doctrine will be degraded and may not remain an effective deterrent strategy. The strategic balance will shift in favour of India. Consequently, the conventional asymmetry of India with its immediate neighbour Pakistan may permit her to activate its ‘Cold Start’ or ‘Proactive Doctrine’ in order to browbeat its nuclear- armed neighbour.

Defensive or Offensive Options

The fresh arms race in the region is likely as Pakistan may try to maintain strategic stability in the region due to the introduction of deployed defences in the South Asian region. The options for Pakistan generally fall among defensive strategies to develop a parallel BMD, or offensive in order to break the opponent’s defensive shield, while simultaneously using diplomacy to restrict India for BMD. On the other side, the cost of deploying a BMD system due to the present financial conditions may restrict Pakistan in pursuing such an option. Even if it is a possibility, whether the option will be effective in the given circumstances, when offensive strategies have prominence over the defensive strategies, presents a big question mark. On a couple of occasions, Pakistan was not able to counter air threats emanating from western borders posed by International Security Assistance Force (ISAF), which may be due to a deliberate oversight or incapacity but may provide a leaf and encouragement to India to look for an opportunity for hot pursuits within Pakistan. Such fake claims by India have already started to appear in the media,²⁰ which needs firm measures from Pakistan as hot pursuit or

¹⁸ Toby Dalton and George Perkovich, “India’s Nuclear Option and Nuclear Dominance,” *Carnegie Endowment for International Peace*, May 19, 2016, <https://carnegieendowment.org/2016/05/19/india-s-nuclear-options-and-escalation-dominance-pub-63609>.

¹⁹ Zafar Iqbal Cheema, “The Role of Nuclear Weapons in Pakistan’s Defence Strategy,” *IPRI Journal* no.4 (2) (2004): 72–87.

²⁰ M. Ilyas Khan, “India’s ‘Surgical Strikes’ in Kashmir: Truth or Illusion?” *BBC News*, October 23, 2016, <https://www.bbc.com/news/world-asia-india-37702790> ; “Indian Army Killed 138 Pakistani Soldiers in 2017 in Tactical Operations,” *The Economic Times*, January 10, 2018. <https://economictimes.indiatimes.com/news/defence/indian-army-killed-138-pakistani-soldiers-in-2017-in-tacticaloperations/articleshow/62443429.cms>.

surgical strike inside Pakistan may be their prospective desire. Besides, India in order to browbeat its immediate neighbour Pakistan is continuously developing its conventional capability. It has struck a deal with France to buy 36 Dassault Rafale or Euro Typhon multirole jet aircraft, which will definitely multiply its capacity against Pakistan,²¹ against whom it already has air superiority.

Efficacy of BMD – Defensive Options

In order to reinforce the degrading deterrence stability in South Asia primarily occurring due to BMD, Pakistan's basic options lie between offensive and defensive strategies. A defensive strategy would involve a similar option of developing a BMD for Pakistan. However, to consider a BMD, missile threat to a state has to be critically analysed. Pakistan faces immediate missile threats from India. India is continuously pursuing missile development and it has added a number of missiles to its list of ICBMs; most obvious are Agni and Surya capable of carrying nuclear warheads from short to longer ranges. Surya III can hit anywhere across the globe with its projected range of 20,000 km²² and to cover entire Pakistan, India may not even need ICBMs.

Does the option of developing BMD consider as more pragmatic and practical by a state to counter missile or a developing BMD of a rival state? BMD as a strategy is deployed for defence of a complete country, defence of forces in the battlefield or for the protection of important sites or installations. The two broader categories of BMD are the National Missile Defence (NMD) and the Terminal High Altitude Area Defence (THAAD). That is, on the one hand, NMD is a multi-layered 'defensive' system that falls under the category of a system, which protects geographical boundaries of a state,²³ but on the other hand, THAAD provides protection to comparatively smaller areas. It has a capability to intercept short, medium and intermediate missile up to the ranges of 1000

²¹ "India, France Ink €7.87 Billion Agreement for 36 Rafales," *The Hindu*, September 23, 2016, <https://www.thehindu.com/news/national/India-France-ink-%E2%82%AC7.87-billion-agreement-for-36-Rafales/article14995775.ece>.

²² Richard Speier, "U.S. Satellite Space Launch Cooperation and India's Intercontinental Ballistic Missile Program," *Gauging US-Indian Strategic Cooperation*, ed. Henry Skolski, (March 2007): 187-192, www.strategicstudiesinstitute.army.mil/pdffiles/pub755.pdf.

²³ Charles L. Glaser and Steve Fetter, "National Missile Defense and the Future of U.S. Nuclear Weapons Policy," *International Security* 26, no. 1 (Summer 2001): 40-92.

kms.²⁴ During the Cold War, the inability of the US to develop an effective NMD led to enactment of the ABM treaty between the US and erstwhile the USSR in 1972.²⁵ The primary purpose of the US to pursue BMD was to achieve security against the threats of ICBMs emanating from the erstwhile USSR. However, lacking in technology to intercept incoming ICBMs forced both the powers to enter into the ABM Treaty. After the dismemberment of USSR, the US renewed efforts for the development and deployment of BMD, which are reminiscent of its desire to achieve security through BMD against the hostile ICBMs. Currently, many reports suggest that the Americans are focusing on the protection of their corridors against any possibility of missile attack aimed at the US mainland. So far, the US considers Alaska and California as corridors of ICBMs, and BMD with the combination of midcourse and terminal phase interception is planned at these two locations.²⁶ There are indications that the US is involved in testing of laser capability and first such airborne test conducted from Point Mugu's Naval Air Warfare Center-Weapons Division Sea Range off Ventura in central California.²⁷ The Missile Defence Agency (MDA), US, deals with deployment of missile defence.²⁸ During the tests, the agency demonstrated Airborne Laser Testbed (ALTB) with the help of directed energy to intercept ballistic missiles. In these tests, the ALTb was provided on modified Boeing 747 jumbo Jet, whereas, Northrop Grumman supplied the higher-energy laser and Lockheed Martin developed the beam and fire control system.²⁹ These tests provide ground for employment of laser from space for intercepting missiles; however, this may not be possible in near future being nascent yet. India is presently considering area defence-BMD and developing NMD that may neither be desirable nor realizable due to the lack of technological advancement. The present status of India's BMD is more of a blend of PAC-III,³⁰ comprising of domestically built PAD and components of the BMD supported by foreign states.³¹ On the other hand, at present Pakistan does not have the requisite

²⁴ Michael Elleman and Michael J. Zagurek, Jr., "THAAD: What It Can and Can't Do," 38 North (March 10, 2016), https://www.38north.org/wp-content/uploads/pdf/2016-03-10_THAAD-What-It-Can-and-Cant-Do.pdf.

²⁵ ABM Treaty 1972, signed between the US and the USSR at Moscow on 26 May 1972.

²⁶ Ibid.

²⁷ "U.S. Successfully Tests Airborne Laser on Missile," *Reuters*, February 12, 2010.

²⁸ Missile Defence Agency, <https://www.mda.mil/>.

²⁹ Ibid.

³⁰ "U.S. Successfully Tests Airborne Laser on Missile," *Reuters*, February 12, 2010.

³¹ Harsh V. Pant, "India Debates Missile Defense," *Defence Studies* 5, no.2 (June 2005): 228-246.

technological advancement to develop NMD, as such, an option requires boost, midcourse and terminal phase interception, and more so, it seriously lacks in satellite outreach. It also does not have much to boast about in satellite capability. Unless and until a major technological expansion is undertaken for tracking and intercepting missiles and acquiring radars for EW, Pakistan's prospects for developing an effective missile system are seriously doubtful, especially considering the acute lack of capacity, investment and capability so essential for the venture. An overreliance on limited domestic research and Chinese assistance at the cost of acquiring advanced technologies from the developed world does not seem to be a viable strategy. Given the magnitude of costs and time involved, Pakistan literally faces a choice between Scylla and Charybdis, each having long-term implications.

As identified in the preceding sections, the immediate missile threat to Pakistan arises from India from its eastern borders, whereas, southern side exposes to ship-launched ballistic missile from the direction of Arabian Sea. The potential targets in Pakistan could be its missiles sites and silos to teeth-out Pakistan's capability of 'First Use.' India no longer remains the only source of threat to Pakistan, especially ever since the news have started to flash on and off in the media about the possible US attack on Pakistan's nuclear programme. In June 2011, President of Iran Mr. Ahmadinejad warned Pakistan, "We have precise information that America wants to sabotage the Pakistani nuclear facilities in order to control Pakistan and to weaken the government and people of Pakistan."³² Such news about negative intentions of the US against Pakistan's nuclear assets keeps surfacing on and off. However, the immediate threat is still perceived to be emanating from India, as amply obvious from the fact that the very origin of Pakistan's nuclear programme is historically linked to two major events: 1) the dismemberment of Pakistan in 1971 where India confessedly played a vital role³³ and 2) India's nuclear weapons' test in 1974. These two events forced Pakistan to look for security elsewhere. The development of nuclear weapons was the most convenient option for Pakistan to deter the regional hegemonic with 'First Use' as pillar of its nuclear doctrine. However, Indians propagate it as Pakistan's nuclear blackmailing tactic against India particularly in the background of Kargil Conflict 1999 and 2001 military-standoff between both the states.³⁴ Thus, opting for BMD will shift the strategic balance in India's favour by

³² Iranian President Mahmoud Ahmed, "US has Designs on Pakistan's Nukes: Iran," *The Express Tribune*, June 8, 2011, <https://tribune.com.pk/story/184086/us-plans-to-sabotage-pakistan-nuke-facilities-ahmadinejad/>.

³³ "Vajpayee accorded Liberation War Honour," *The Dhaka Tribune*, June 7, 2015, <https://www.dhakatribune.com/uncategorized/2015/06/07/vajpayee-accorded-liberation-war-honour>.

³⁴ Harsh Pant, "India Debates Missile Defense," 228-246.

offsetting Pakistan's nuclear parity with her; thereby allowing it a chance to use its conventional asymmetry to browbeat Pakistan.

In the list of defensive options, it may be extremely difficult for Pakistan to develop an NMD. Due to high cost and technological shortfalls of NMD, Pakistan may have to restrict itself for point defence or defence of likely approaches of missile attack. Point defence is one part of the terminal defence, and it relates to defence of a single object or a limited area, e.g. shipbuilding or an airfield, against air attacks and missiles.³⁵ The purpose of point defence is to protect missile sites and silos against a possible first strike; whereas, the purpose of corridor defence is to protect a territory against missile threat from a particular direction.

In case of US, midcourse defence from Alaska and California permits the US to intercept the missile threat emanating from a particular direction. In case of Pakistan, the concept does not seem to be relevant because of the extended border between Pakistan and India and domination of Indian Ocean by India. Thus, corridors, in case of Pakistan, can best be explained as, the ones leading towards strategic installations and interests. Southern corridor is one such route that may comprise some part of Arabian Sea and the geographical layout from south to north leading to launch sites, silos or the strategic installations.

On a similar note, the significant variations between the nature of technology of point and corridor defence need due consideration too. Point defence is a terminal defence, in which short-range interceptor will engage the missile within the close area of defence. Corridor defence on the other hand, may be a sea-based or land-based midcourse interception. In addition, the mode of EW and type of radars used for coverage etc are different too. Another difference lies in the range of the interceptor missile because the range of interceptor missile intended for midcourse interception is sufficient only for engaging the incoming ballistic missile in exo-atmospheric phase.

As far as development of an EW system is concerned, a lot of complexities are involved which cannot be dealt with by Pakistan on its own and it will have to engage external sources for the purpose, especially as the system requires a host of satellites and radars in order to become effectively operational. Restructuring, modernization and even reorganization of the Space and Upper Atmosphere Research Commission (SUPARCO) will first and foremost be required for provision of EW, especially for detection and tracking of incoming enemy missile and for guiding own interceptor missile to the target. In the wake of this, it needs no rocket science to understand that, although Pakistan immediately needs BMD but it can only opt for this course of action through a well-planned strategy with clearly defined multiple developmental phases

³⁵ Aldridge, Robert C, *First Strike: The Pentagon's Strategy for Nuclear War* (Boston: South End Press, 1983), 192.

spread over decades to bring about a matured product which could lead it from point to midcourse defence soon.

Offensive Capabilities

Deterrence is active when nuclear strike between two rivals is guaranteed. The inability of a state to ensure delivery of its nuclear weapons to targets is an indication of degeneration of prevailing strategic stability. BMD is a strategy, which protects one state against the hostile missile of the rival state, as a missile is the most reliable of means for delivery of nuclear weapons. The degeneration of strategic stability due to BMD, forces the opponent state to take measures, which may permit her to offset the advantage of a BMD. These may include use of advanced technologies to penetrate the opponent BMD shield. During the Cold War, once both the superpowers were trying to develop BMD for their states, it was the primacy of offensive strategies, which could easily make BMD efforts redundant. Therefore, this aspect forced the US and erstwhile the USSR to enter into ABM Treaty in 1972.

In the list of offensive strategies, improvement in missile technologies is the most effective and viable means to offset opponent's BMD. Taking the example of cruise missile, the weapon is designed against land and sea targets and can be launched from any platform i.e. land, air and sea.³⁶ They are land-hugging missiles that follow the layout of ground and, therefore, are not easy for the radars to detect. They can be used with the conventional and nuclear warheads. However, cruise missile also faces problems like at the terminal stage; it may face interception by point defence.³⁷ These can also be intercepted through aircrafts.

The state-of-the-art aircrafts are equipped with several features including shoot-down, lookdown and especially the pulse-doppler radar³⁸ technology that enables carrying out observation and directing air-to-air missiles against low-altitude airborne targets.³⁹ The problem with the jet aircraft is that they cannot continuously remain present in air for longer duration due to their sustenance issues, therefore, lack ability to react at short notice. Although, in times of alert, Combat Air Patrols (CAPs) can be effectively deployed to defend against incoming cruise missiles during the times of alert, but their sustained and permanent employment in air is problematic.

³⁶ Jeff Kueter and Howard Kleinberg, "Cruise Missile Challenge: Designing a Defence against Asymmetrical Threats," *The Marshall Institute*, Washington, (May 3, 2007), 1-45, www.marshall.org/article.

³⁷ Ibid.

³⁸ William H. Long David H. Mooney William A. Skillman, "Pulse Doppler Radar," in *Radar Handbook*, 2nd edition, ed : Merrill I. Skolnik, Daniel A. Gonneau and Beatrice E. Eckes (USA: McGraw-Hill, 1990), 17-42.

³⁹ Ibid., 17-42.

PAC-III and Aegis and Aegis system held with US are other ways of ensuring active defence.⁴⁰ Nonetheless, the simple design and the very size of cruise missiles make them easy to hide in containers and transport, for example, in cargo ships. It is common knowledge that most cargo ships sail between East Asia, America, Europe and Africa pass through the territorial waters of India with an approximately 7,517 kilometres long coastline.⁴¹

It is estimated that around 95 percent of India's trade by volume and 70 percent by value is carried out through maritime transport.⁴² Additionally, concerns about vulnerability of India's BMD are exacerbated by the almost off-the-shelf availability of missile technology and their components in the black market, making these somewhat prized trophies for terrorist organizations.⁴³

In the neighbourhood of India, Pakistan is continuously pursuing development of cruise missile. It tested 700 kms range Babur VII Hatf cruise missile in 2011.⁴⁴ In addition to cruise missile, is aiming leaps in developing Multiple Independently Targetable Re-entry Vehicles (MIRVs) technology because of efforts of Pakistani and Chinese engineers, as reported by BBC.⁴⁵ MIRV is capable of engaging multiple targets from a single missile duly nullifying the notion of effective defence provided by the BMD. Efficient and smart use of chaff and decoys are other means for misleading the interceptor missile and can effectively blind the vision of radars.⁴⁶ During an air attack, Radar jamming helps to obscure the defender's vision particularly during the air attack. However, in the wake of a missile attack on a BMD site/area, its use in combination with above referred technology will practically impair the efficacy of the BMD system.

⁴⁰ Jeff Kueter and Howard Kleinberg, "Cruise Missile Challenge, Designing a Defence against Asymmetric Threats."

⁴¹ "Smart Border Management: Indian Coastal and Maritime Security," *FICCI-PWC* (Federation of Indian Chambers of Commerce and Industry-Price waterhouse Coopers), *Report* (September 2017), <http://ficci.in/spdocument/20955/Smart-Border-Management-study.pdf>.

⁴² Ibid.

⁴³ Dr. Carlo Kopp, "Bypassing the National Missile Defence System-The Cruise Missile Proliferation Problem," *Technical Report* APA-TR-2007-0708 updated in April 2012, <http://www.ousairpower.net/APA-Cruise-Missile-Proliferation.html>. (accessed November 13, 2017)

⁴⁴ "Pakistan Successfully Test Fires Nuclear-Capable Cruise Missile," *Dawn*, October 28, 2011.

⁴⁵ Syed Shoaib Hasan, "Pakistan's Growing Nuclear Programme," *BBC News, South Asia*, December 1, 2010, <https://www.bbc.com/news/world-south-asia-11888973>.

⁴⁶ Eric Stubbs, "Soviet Strategic Defence Technology," *Bulletin of the Atomic Scientist* (April 1987): 14-19.

Conclusion

India wants to create a condition of 'invulnerability' for itself through the deployment of BMD. Such condition will shift 'balance of power' in favour of India, which will allow India to use its conventional asymmetry against Pakistan, as in this case, Pakistan's nuclear 'First Use' nuclear doctrine will not remain valid. In the words of Williams, 'the deterrence through denial'⁴⁷ will actually be the redundancy of Pakistan's NWs. The actualisation of Cold Start doctrine under the circumstances by India against its immediate regional rivals, in particular Pakistan, becomes an opportunity. However, perceived security by India under the BMD will actually lead the region into more instability. The arms race is likely to be the consequence, which may equally be in the domain of offensive or defensive strategies.

In the present circumstances, when India is incessantly pursuing BMD, the burden to stabilise the region has fallen with Pakistan. It may have to consider its options from a broader array to include military and diplomatic options. In military options, Pakistan may have to enhance deterrence, by a combination of offensive and damage limitation measures. The varied offensive measures to penetrate the shield by a BMD opponent may include cruise missile, aircrafts, MIRVs, increase in NWs and modest measures. India might consider it as strengthening of Pakistan's first strike, however, India has to realize that developing a BMD is the *raison d'être* of such options for Pakistan. Simultaneously, Pakistan may have to ensure 'hard site defence' or 'point defence' in order to protect its silos, launching sites and other connected operational sites against a missile threat emanating from India as part of damage limitation measures. This is different from area defence as it focuses on selected target areas to be protected. Correspondingly, this will complement the second-strike capability of Pakistan; the second-strike capability is likely to prove as an ultimate objective of NWS to fulfil the prerequisite of vulnerability of rivals and virtually nuclear deterrence, which leads towards strategic stability.

On the diplomatic front, Pakistan needs to galvanize efforts to bring upon the world community the negative fallout of India's BMD on the region and its strategic balance, at the same time making concerted efforts to somehow circumvent, if not restrict, the role and ability of US, European nations and Israel in supporting India's BMD. For the purpose, Pakistan may be able to strike a common chord with both Russia and China who may share the concerns, especially owing to the likely impact of America's BMD and its likely extension to its other partners in the world. Although Russia had been supporting India in development of BMD, but it

⁴⁷ Phil Williams, *Contemporary Strategy II, the Nuclear Powers* (Great Britain: Croom Helm Ltd, 1987), 44.

carries serious reservation about BMD deployment by the US in Eastern Europe. This common perspective allows these three countries to develop a joint strategy for generating awareness campaign about BMD's impact on the 'have-nots' and on overall global security. Moreover, it is against the concept of disarmament as arms race is likely to result into proliferation of NWs and its related strategies. Simultaneously, a regional security approach may be needed to work out a treaty on the lines of US-USSR ABM treaty of 1972. India and Pakistan can look up to the 1972 USA-USSR ABM Treaty model in the larger interest of security of the region which in turn could serve as a great confidence building measure that could lead to undertaking of similar other pacts including, for example, Nuclear Free Zone Agreement or a No War Pact. There is a need to realize that a mindless pursuance of negative defensive strategies should not come at the cost of denial of opportunities for peace and positive security in the region. Such pursuits of negative defensive strategies will plague the populations on both sides of the borders with immense economic fallouts in the wake of race for developing a missile defence system.

