

UNDERSTANDING PAKISTAN'S FULL SPECTRUM DETERRENCE

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Introduction

Pakistan successfully launched the 60 kilometre Hatf-IX or Nasr ballistic missile in April, 2011. According to official statements issued by Pakistan's Inter Services Public Relations Directorate (ISPR), the Nasr was developed "to add deterrence value to Pakistan's strategic weapons development programme at shorter ranges." The Nasr can carry "nuclear warheads of appropriate yield with high accuracy," and has shoot-and-scoot attributes or a "quick response system" addressing "the need to deter evolving threats.¹ The Nasr missile system has been categorised as a Tactical Nuclear Weapon (TNW).² Pakistan's decision to acquire TNWs can be attributed to an effort to deny India any space for limited war against Pakistan and also to maintain deterrence at all levels of the threat spectrum.³ Pakistan's National Command Authority (NCA) described it as 'Full Spectrum Deterrence' (FSD) during its meeting on September 5, 2013.⁴ NCA stated "Pakistan would not remain oblivious to the evolving security dynamics of South Asia and would maintain full spectrum deterrence capability to deter all forms of aggressions."⁵ Lt Gen. (R) Khalid Kidwai, an advisor to NCA and former head of the Strategic Plans

Division (SPD), also endorsed the policy of full spectrum deterrence in March 2015.⁶

Pakistan's nuclear posture of full spectrum deterrence is a response to the changing strategic environment in South Asia, where India is engaged in modernising its conventional and nuclear forces along with developing and procuring its Ballistic Missile Defence (BMD) systems, and in formulating offensive war fighting strategies.⁷ Notwithstanding the changing security environment, international academicians, policy makers and think tanks, view Pakistan's endeavours for reinforcing its security as being responsible for destabilising the region even as they pressurise Pakistan to compromise on its national security interests.⁸

This paper seeks to offer a comprehensive understanding of Pakistan's 'Full Spectrum Deterrence policy' by studying its meaning and implications, and also identifying various factors responsible for pushing Pakistan to adopt this policy. This paper will not only help in understanding Pakistan's threat perceptions and security challenges but will also highlight the Indian military asymmetry vis-à-vis Pakistan, especially in the conventional field, and in the light of strategic risks in the region.

It will answer the following questions:-

What is full spectrum deterrence? Is the policy of full spectrum deterrence a shift in Pakistan's nuclear posture or is it an extension of its policies of credible minimum deterrence? How is full spectrum deterrence relevant in South Asia? What are the factors responsible for adoption of this policy? What are the implications of full spectrum deterrence?

The paper will utilise both primary and secondary sources. Data from books, documents, speeches, news, research papers, and reports will be collected. As Pakistan's nuclear strategy is not officially defined and explained in detail, as a matter of policy, the main primary sources for Pakistan's policy will be official statements made at various forums.

Full Spectrum Deterrence

In order to disengage its conventional military equation with India by increasing reliance on nuclear deterrence, Pakistan's NCA announced that the country has adopted "credible minimum full spectrum deterrence" ability and capability in September 2013.⁹ The shift in Pakistan's nuclear posture from strategic to full spectrum deterrence is to deter and counter India's military modernisation and its limited war fighting strategy: the Cold Start Doctrine (CSD),¹⁰ alternatively referred to as India's proactive strategy. The CSD calls for up to eight

independent armoured brigades to penetrate up to 50 kilometres into Pakistan without crossing the country's nuclear thresholds.¹¹ Responding to this threat Pakistan developed and introduced TNWs. The development of these weapons was Pakistan's qualitative response to India's strategic objectives. These TNWs are aimed at restoring the credibility of deterrence at both the operational and tactical levels, which were believed to be diluted with the introduction of CSD in the sub-continent.¹² Earlier statements on Pakistan's nuclear posture had some inherent ambiguities and flexibilities. For instance, in 2001, Lt Gen (Retd) Khalid Kidwai stated that Pakistan's nuclear weapons are solely aimed at deterring Indian aggression. He further said that nuclear weapons would be used if the very existence of Pakistan as a state came under threat. While explaining various contingencies, he stated that in case of deterrence failure, Pakistan would resort to employing nuclear weapons if;

India attacks Pakistan and conquers a large part of its territory (space threshold); India destroys a large part either of Pakistan's land or air forces (military threshold); India proceeds toward economic strangulation of Pakistan (economic threshold); India pushes Pakistan into political destabilisation or creates a large scale internal subversion in Pakistan (domestic destabilisation).¹³

The above mentioned parameters indicated that options were available for India to wage a

limited war with the help of its CSD against Pakistan under the country's nuclear threshold.¹⁴ Consequently, Pakistan's policy makers deemed the country's earlier nuclear posture of responding massively with nuclear weapons to cause an unacceptable damage to India as being disproportionate.¹⁵ Pakistan could not use its strategic nuclear weapons in response to India's limited war because its strategic response would then have escalated to full scale nuclear war owing to Indian nuclear retaliation. Neither could Pakistan wage a conventional war with India because Pakistan's conventional military is not at par with India's conventionally superior and advanced military.¹⁶

Since India's CSD exploits the tactical level of Pakistan's nuclear programme, therefore, the country came under the compulsion of developing TNWs in order to plug the gaps at the tactical level of war and to deny India space for waging a limited war. TNWs provide an additional option to Pakistan for an appropriate response to India in the times of crisis, other than strategic options. In words of Lt. Gen. (Rtd) Kidwai, Nasr aims at "consolidating Pakistan's strategic deterrence capability at all the levels of threat spectrum"¹⁷, including tactical, operational and strategic. Full spectrum deterrence can therefore be defined as maintaining the credibility of deterrence at strategic, operational and tactical levels, thus, covering the entire threat spectrum.¹⁸

The technical aspects and rationale for full spectrum deterrence can be understood by having a comprehensive look at different levels of war. Modern military theory divides war into three levels i.e. strategic level, operational level and tactical level. Although, these levels of war have a tendency to blur, each level has its own importance and requires planning. Therefore, a key success in war requires rapid and effective planning at each level.¹⁹ South Asian military experts argue that in the regional context India's mechanised/armoured brigades and infantry divisions constitute tactical level force, while the operational level comprises India's mechanised/armoured divisions strike corps and the strategic level comprises two or more strike corps.²⁰

In line with these observations, Pakistan already had effective deterrence on the strategic level by possessing multiple medium and intermediate range missiles, including its 2000-kilometre range Shaheen-II, 2750-kilometre range Shaheen-III (in developing phase), and 1300-kilometre range liquid-fueled Ghauri ballistic missiles.²¹ Pakistan's strategic force allows the country to target any point in India.²² The idea of employing short-range ballistic missiles helped fill the gaps at the operational and tactical levels.²³ Nasr or (HATF IX) is a short-range surface-to-surface multi tube ballistic missile. With a range of 60 kilometres and shoot and scoot attributes, the missile is capable of carrying a nuclear warhead of appropriate yield and accuracy.

The development of Nasr missile system was an effort to enhance Pakistan's deterrence capability at all the levels of threat spectrum.²⁴

In addition to Nasr, other short-range systems that can be employed for effective deterrence at the operational and tactical levels of conflict include the subsonic 700 kilometres range Babur Land Attack Cruise Missile (LACM), the subsonic 350 kilometres range Raad Air Launched Cruise Missile (ALCM), and various SRBMs including the 100-kilometre HATF-1A, 180-kilometer Abdali, and the 280-kilometre Ghaznavi. The 180-kilometer Abdali and 280-kilometer Ghaznavi are of great importance because they are well suited for the operational and tactical level capabilities.²⁵ The integration of capabilities at strategic, operational and tactical levels cover the full spectrum of threats. Consequently, Pakistan's full spectrum deterrence nuclear posture strengthens response at different tiers by having options at the tactical level against limited incursions, at the operational level to deter a sizeable military offensive, and at the strategic level to prevent an all-out war.²⁶

Furthermore, under its full spectrum deterrence nuclear posture, Pakistan may consider the development of a triad of nuclear forces, owing to India's growing sea based nuclear capabilities.²⁷ In recent years India has rapidly modernised its Navy with an aim to develop blue-water capabilities. In order to increase its influence in the Indian Ocean

Region and to attain global power status, India is not only trying to enhance its indigenous naval vessels building capacity but has also acquired hardware from various foreign countries, including the US, Israel and Russia. Besides acquisition and indigenous development of stealth destroyers, anti-submarine corvettes and stealth frigates, India is rapidly working on vessels of strategic importance like aircraft carriers and nuclear-armed submarines.²⁸

In view of the aforementioned threats arising from massive Indian naval build-up, Pakistan may use various options, conventional and unconventional, to counter Indian naval power under its full spectrum deterrence posture. As Pakistan's air launched and land based ballistic missiles are developed and repeatedly tested, the development of its naval tier is still in a formative phase. Pakistan signed an agreement with China in March 2015, to acquire eight submarines which would be able to carry nuclear warheads on CJ-10K land attack cruise missiles. Moreover, Pakistan has also signed an agreement with a German firm to alter and upgrade its two naval air transport (ATR-72s) into maritime patrol aircraft (MPA) with anti-submarine warfare capabilities.²⁹ Furthermore, with the development of Nasr, Pakistan has signalled the capability of miniaturisation technology which would allow its cruise missiles to be miniaturised for sea-launch submarine capability in order to counter India's nuclear triad.³⁰ These developments, therefore, imply

that full spectrum deterrence includes development of nuclear warheads capable of being launched or deployed either from both warships and diesel-powered submarines in the Indian Ocean.³¹

Correlation between Credible Minimum Deterrence and Full Spectrum Deterrence

Pakistan's full spectrum deterrence nuclear posture is a qualitative response to Indian military modernisation and to its pro-active military operation strategy. The adoption of full spectrum deterrence, however, does not mean a departure from its credible minimum deterrence posture. According to an NCA statement, thus;

“Pakistan would continue to adhere to the policy of credible minimum deterrence, without entering into an arms race with any other country. Pakistan, however, would not remain oblivious to the evolving security dynamics in South Asia and would maintain a 'full spectrum deterrence' capability to deter all forms of aggressions.”³²

Pakistan's Foreign Secretary Aizaz Chaudhry further elaborated the country's concept of full spectrum deterrence. According to Chaudhry on October 29, 2015,

“Our conduct continues to be guided strictly by the principle of credible minimum deterrence. Full spectrum deterrence is by no means a quantitative

change in our credible minimum deterrence; it is rather a qualitative response to the emerging challenges posed in South Asia".³³

Credible minimum deterrence has remained the doctrinal foundation of Pakistan's nuclear posture. It has also served the policy objectives set by Pakistan.³⁴ The notion of credible minimum deterrence is linked with nuclear weapons. With huge destructive power, nuclear weapons contain equalising effect in the calculus of deterrence because a relatively small number of nuclear weapons can inflict huge damage. Achieving a numeric equilibrium of nuclear weapons, similar to the conventional military balance, is therefore both unnecessary and undesirable.

Experts in the field of nuclear studies believe that credible minimum deterrence can help avoid an arms race and also save economic resources implying that an adversary with a large nuclear force may be deterred with small credible nuclear forces.³⁵ At the same time, however, one cannot assume that minimum nuclear force is a constant number and remains unaffected by major strategic and technological developments taking place globally or regionally. It means that the size of a minimum deterrent is inversely proportional to factors including the survivability of the force.³⁶ Another factor associated with the notion of minimum deterrent is the degree of surety that the weapon would reach its intended target after a launch. In both cases, if the survivability remains low, then the size

of the minimum deterrent force should be on higher levels. Based on these assumptions, one can conclude that the concept of credible minimum deterrence needs to be understood in a fluid and dynamic manner, and can have numerous different and constantly changing meanings.³⁷

With regard to Pakistan's credible minimum deterrence nuclear posture, Lt. Gen. (R) Kidwai indicated that Pakistan has dealt with the formidable challenges by developing its nuclear policy under the framework of restraint and responsibility.³⁸ Speaking at the Naval Postgraduate School, Monterey, Kidwai said that Pakistan's nuclear policy is not aggressive but defensive in nature, based on credible minimum deterrence.³⁹

Keeping in view Pakistan's close geographical proximity with India, minimum deterrent serves well the policy objectives of the country. Moreover, Pakistan cannot ignore major strategic and technological developments that are being carried out by India in South Asia. This is evident from the statement made by Sartaj Aziz, Prime Minister's Advisor on the Foreign Affairs, during a session at Senate on May 19, 2016. He said, "Pakistan is not oblivious of its defence needs and will augment it further."⁴⁰ Major developments in the South Asian region include the 2005 Indo-US civil nuclear cooperation deal, made possible by the NSG's unconditional exemption to India. The NSG waiver provided India with an opportunity to feed its civil

nuclear reactors with purchased nuclear fuel from foreign countries and allocate its own uranium for the purpose of weapons production. With a greater quantity of weapons-grade fissile material at its disposal, India can easily surpass Pakistan's fissile material and make large number of warheads. The greater quantity of warheads can pose a serious challenge to Pakistan for maintaining the survivability of its minimum deterrent.⁴¹ Such challenges have resulted in Pakistan's credible minimum deterrence posture being readjusted in response to the constantly changing strategic environment in the region. In words of three senior Pakistani officials, namely Abdul Sattar, Agha Shahi and Zulfiqar Ali Khan,

“Of course minimum cannot be defined in static numbers. In the absence of mutual restraint, the size of Pakistan's arsenal and its deployment pattern have to be adjusted to ward off dangers of pre-emption and interception. Only then can deterrence remain efficacious.”⁴²

In view of the preceding discussion and statements regarding full spectrum deterrence and credible minimum deterrence, it can be argued that both concepts are correlated. On the one hand where Pakistan's nuclear policy is based on restraint and responsibility, on the other hand, the country has kept its options open for readjusting its 'minimum deterrent' too. Pakistan enunciated this option more than a decade ago, when former foreign minister, Abdul Sattar, stated that 'minimum

nuclear deterrence would remain the guiding principle of our nuclear strategy.⁴³ He further stated that as India builds up its nuclear weapons programme, 'Pakistan will have to maintain, preserve and upgrade its capability' in order to keep its deterrent survivable and credible.⁴⁴ Therefore, one cannot translate the concept of full spectrum deterrence as a shift from credible minimum deterrence or as quantitative change in Pakistan's nuclear posture, when Pakistan says it maintains full spectrum deterrence in the face of strategic developments in South Asia. The possibility or likelihood of adjusting the 'minimum deterrent' existed before the adoption of full spectrum deterrence and Pakistan also communicated it on several occasions.

Factors Responsible for the Shift in Pakistan's Nuclear Posture

Strategic dynamics of the South Asian region are guided by major political developments. The Indian nuclear tests of 1998 disturbed the balance of power in South Asia. In order to establish a power equilibrium in the region, Pakistan responded by conducting its own nuclear tests. For India, the motive for acquiring nuclear weapons was based on a desire to achieve regional or global power status, to deter perceived nuclear threats from China and Pakistan, and to avoid nuclear blackmailing by the superpowers. For Pakistan, however, its nuclear deterrent was only security driven and was India-centric.⁴⁵

Consequently, Pakistan's possession of nuclear capability played an important role in preventing a full scale war between both the countries. However, it did not completely ward off the security challenges and threats⁴⁶ due to the stalemate on disputes, continuing arms race, lack of progress on Confidence Building Measures (CBMs), and the absence of a shared vision for regional strategic stability.⁴⁷ There are also some other factors that negatively affect the strategic stability of South Asia.

Cold Start Doctrine

After the 1999 Kargil Conflict and 2002 military confrontation, Indian strategists sought to find space for limited conventional operations against Pakistan. India's earlier war-fighting doctrine, known as the Sundarji doctrine, conceptualised during the 1980s failed to integrate the impact of nuclear weapons in South Asia's strategic calculations. The reason behind its failure was the fact that India could not launch an immediate conventional strike against Pakistan because offensive formations of Indian military were located in central India and required sufficient time to mobilise. In order to overcome this obstacle, India unveiled its CSD in April 2004 with an aim of waging a limited war against Pakistan under its nuclear threshold. The desires for waging a limited war against Pakistan had existed even before 2004. The former Indian Defence Minister, George Fernandes, had declared in January

2000 at a seminar on “The challenges of Limited War”, that Pakistan’s possession of nuclear weapons does not rule out the possibility of a limited war.⁴⁸ He stated that conventional war was feasible, however, within definite limitations. Moreover, former Indian Chief of Army Staff General V. P. Malik also endorsed Fernandes’ statement by saying that India would not hesitate to fight a limited war with Pakistan, regardless of its nuclear weapons.⁴⁹ To materialise the possibility of a limited war, Indian policy makers adopted the Cold Start Doctrine or Proactive Strategy. The CSD doctrine was revealed which is based on the premise of pre-emption. The concept dictates the rearrangement of forces of tri services (army, air force and navy) from three large strike groups into eight smaller Integrated Battle Groups (IBGs), comprising of mechanised infantry, artillery and armour for surgical strikes and quick incursion into Pakistan in a very short period of time of 72-96 hours.⁵⁰ This doctrine was envisaged with an aim to launch a swift conventional limited attack on Pakistan under the country’s nuclear threshold, before international community reacts.⁵¹ The Indian Army Chief Gen Deepak Kapoor stated in 2010 that “Cold Start calls for cutting Pakistan into salami slices as punishment for hosting yet another Mumbai-style terrorist attack inside India”.⁵²

The introduction and adoption of a limited war fighting doctrine such as the CSD have direct bearings on the deterrence stability between India and Pakistan. India’s CSD has posed a

direct challenge to the deterrence stability as the doctrine is diluting the very principal prerequisites of nuclear deterrence and moving towards escalation brinkmanship.⁵³ Moreover, such operations may escalate limited war into all-out war owing to lack of territorial depth of Pakistan and concentration of population centres near border areas.⁵⁴

India's NSG Waiver and Membership

In October 2008, the US Congress gave final approval to the agreement aimed at facilitating civil nuclear cooperation between India and the US. The agreement, famously known as '123 Agreement', was first announced as a joint statement by the then US President George W. Bush and former Indian Prime Minister Manmohan Singh on July 18, 2005.⁵⁵ The deal between the two countries culminated after the Nuclear Suppliers Group (NSG) granted a waiver to India in September 2008. An exception for India was necessary to allow the supply of nuclear fuel and technology under NSG guidelines. The waiver exempted India from NSG rules governing nuclear trade. Countries including Russia, France, Britain and the US supported the NSG waiver to exempt India from the full scope of IAEA safeguards despite India being a non-signatory to the Nuclear Non-proliferation Treaty (NPT). With the NSG waiver, India received a green signal to trade with countries in civil nuclear fuel and technology.⁵⁶

Pakistan is concerned that the NSG waiver would help India in expanding its nuclear programme both quantitatively and qualitatively. India's civil nuclear agreements would enhance the Indian capability to develop more nuclear warheads by diverting nuclear materials, given by other countries for peaceful purposes, to its military nuclear programme.⁵⁷ The diversion of nuclear material from peaceful to military purposes is possible because India, being a non-NPT state, is not under a legal obligation to accept a comprehensive safeguards agreement with the IAEA. As a substitute, India has a limited version of IAEA safeguards covering some of its nuclear facilities.⁵⁸ Former Indian Prime Minister Manmohan Singh had announced a Separation Plan for India's civil and military nuclear programmes in 2006.⁵⁹ It is considered that the plan clearly separates civil and military nuclear activities of India in two categories. In reality, however, the plan has produced three streams of Indian nuclear programme: civil safeguarded, civil unsafeguarded and military.⁶⁰ Even some civilian facilities under India's safeguard agreement with IAEA may contribute to India's stockpile of unsafeguarded weapon-grade fissile material owing to the special nature of India's safeguard agreement with IAEA. Moreover, India is operating numerous facilities including eight of its pressurised heavy water reactors (PHWRs) for both civilian and commercial purposes. These facilities do not fall under Indian safeguards agreement because they are not listed in India's

agreement. Therefore, Pakistan is concerned that these unsafeguarded civilian nuclear facilities could be used for the production of more nuclear weapons in future.⁶¹ India's benefit from such relaxations can destabilise the nuclear stability and trigger an arms race between the two countries.⁶²

Apart from benefits that India is enjoying under the NSG waiver, India is also aspiring to become a full member of the cartel being a non-NPT state. These aspirations are supported by various countries including France, Russia, Japan and the US. However, the NSG members blocked Indian membership during the NSG plenary meeting in Seoul on June 23 and 24, 2016, on grounds that a non-NPT member cannot become a member of NSG. China being the main country opposing Indian membership, said that, "it would not bend the rules and allow Indian membership. Applicant countries must be signatories to the NPT."⁶³ Pakistan had also applied for the membership of the NSG which was not considered by the group during its Seoul plenary meeting because Pakistan is also a non-signatory of the NPT.⁶⁴ Both China and Pakistan support a non-discriminatory criteria based approach for the membership of the group, rather than specific treatments. The NSG countries met for the second time on November 11, 2016 especially to determine the rules for the membership of non-NPT states.⁶⁵ In order to avoid discrimination and destabilisation of the South Asian region, the NSG countries

should consider the incompleteness and overlap of India's civil and military nuclear programme before determining conditions for its membership.

Indian Military Modernisation

The broader outline of Indian national interests can be assessed by former Prime Minister Atal Bihari Vajpayee's speech to the Combined Commanders conference on November 1, 2013,⁶⁶ where he stated that,

“As we grow in international stature our defence strategies should naturally reflect out political, economic and security concerns, extending well beyond the geographical confines of South Asia. Our security environment ranges from Persian Gulf to the Straits of Malacca across the Indian Ocean, includes Central Asia and Afghanistan in the North West, China in the North East, and South East Asia. Our strategic thinking has also to extend to these horizons.”⁶⁷

The aforementioned observation clearly reflects Indian national and strategic interests in the region. Besides exhibiting converging interests with the US and conflicting interests with China, drawing outline of strategic frontiers is the sign of Indian motives to upgrade and modernise its armed forces in order to create assets for deterrence and dissuasion.⁶⁸ India has built one of the largest military infrastructures in the world and sought to strengthen its power through rapid

modernisation. A 2015 Credit Suisse report ranked India as the world's fifth largest military power.⁶⁹ According to the latest Stockholm International Peace Research Institute's (Sipri) report, India remained the biggest arms importer during the period 2011-2015, accounting for 14% of the world's arms imports. During this period, Russia continued to be India's largest arms supplier with 70% of its arms imports while the US and Israel remained at 14% and 4.5% of arms supplies to India respectively.⁷⁰ In order to lower the dependence on foreign military goods, India announced to review its defence procurement plans in order to encourage the domestic defence production, innovation and modernisation of its military. This new defence procurement procedure, as announced by the Indian Defence Minister Manohar Parrikar in January 2016, incorporates the "Make in India" initiative to enhance military modernisation domestically.⁷¹ India's recent military modernisation across various domains is briefly discussed as under,

With regard to India's land army, the manpower disparity between India and Pakistan has remained static at 2:1 ratio in India's favour. Besides manpower, India has 2975+ Main Battle Tanks (MTB) while Pakistan has 2561+ MTB. India dominates Pakistan's artillery by the ratio of 2.1:1.⁷² India sought to modernise its land army though the procurement of modern technology for both its mechanised and infantry capacities. India has procured a total of 330

T-90S main battle tanks from Russia,⁷³ and a new futuristic main battle tank (FMBT) is also being conceptualised which has enhanced technology for increasing both armoured protection and mobility. BMP-II is a state-of-the-art weapons system and has been through multiple upgradations in terms of mobility and firepower.⁷⁴ India has also developed a “Future Infantry Soldier as a System” project (F-INSAS). The system seeks to improve the communication, survivability, situational awareness and lethality of the Indian infantry.⁷⁵

In the realm of air force, despite a 1.9:1 advantage of the Indian Air Force (IAF) over the Pakistan Air Force (PAF),⁷⁶ IAF is being further modernised by India. In September 2016, Indian Ministry of Defence and the US signed contracts for importing 22 Apache and 15 Chinook helicopters, whose delivery would start in the next three years. Besides helicopters, supply of 812 air-to-surface Longbow Hellfire Missile AGM 114-L3, 542 more Hellfire Missiles of the AGM 114R-3 variant, and 245 Stinger Block-1-92H Missiles were also included in the contracts.⁷⁷ Besides purchasing modern aircraft, India is also indigenously producing Russian designed SU-30MKI air superiority fighters.⁷⁸ Moreover, recently, India also signed an agreement with France to buy 36 French-built Rafale planes.⁷⁹ Further, Lockheed Martin, a premier defence technology company from the US, announced that it was ready to manufacture F-16 aircraft in support of the US and Indian negotiation

for setting up of Lockheed Martin's manufacturing plant in India. It will be the biggest project under the initiative "Make in India". Lockheed Martin had previously provided six C-130J Super Hercules planes in 2011 and is intended to provide six other helicopters to India in 2017.⁸⁰ Indian Air Force also started integrating the indigenous Beyond Visual Range (BVR) air-to-air missiles SU-30 MKI aircraft after several tests. The missiles are operated on the Ramjet technology, which is only possessed by the US, Russia, China and France so far.⁸¹ This interplay of acquisition and domestic development gives India a decisive advantage over PAF and confidence in carrying out disarming strikes across Pakistan. According to Rodney Jones, a specialist on nuclear security policy issues, India's conventional strike capabilities with laser-guided bombs supported by warning and control aircraft gives the country potential opportunity to disarm and destroy Pakistan's airfield and missiles in ground based shelters. Such a scenario may compel Pakistan to reciprocate with the same disarming strikes. As a result, conventional conflict would spur escalation ladder to unpredictable levels, even to a nuclear exchange.⁸²

The Indian navy is also undergoing extensive modernisation through acquisition and domestic manufacturing of its naval fleet. India has the fifth largest navy in the world. As of 2016, the Indian Navy has a strength of 79,023 personnel and a large fleet consisting of 10 destroyers, 1GAH amphibious

transport dock, 14 frigates, 9 landing ship tanks, and 14 conventionally powered submarines, 25 corvettes, 7 minesweeping vessels, 47 patrol vessels, 4 fleet tankers and various auxiliary vessels.

Presently, India is operating two aircraft carriers including *INS Viraat* and *INS Vikramaditya*, following the decommissioning of its first aircraft carrier, namely *INS Vikrant*, in 1997.⁸³ *INS Vikramaditya* was acquired from Russia after going through various modifications and refurbishment. It weighs 44,500 tonnes and carries 34 aircraft on board. The ship was commissioned on November 16, 2013.⁸⁴ *INS Viraat*, a centaur-class aircraft carrier, had served the British Navy for over 30 years before it was inducted into Indian Navy on May 12, 1987, after undergoing various refits. The carrier has served under the Indian flag for more than a decade in various operations and exercises.⁸⁵

Besides these aircraft carriers, India is currently manufacturing two more aircraft carriers. India's first indigenous aircraft carrier, the *INS Vikrant*, was launched by Indian Defence Minister AK Antony at Kochi shipyard in August 2013. *INS Vikrant* is a 37,500 tonnes aircraft with a length of 260 metres and width of 60 metres. The carrier is scheduled to be commissioned by the end of 2018.⁸⁶ Moreover, India's second indigenous aircraft carrier *INS Vishal* would be 65,000 tonnes and is likely to be propelled by nuclear energy. According to a senior Indian naval

officer, the cost of the carrier depends upon the type of propulsion system, as nuclear propulsion system costs more than conventional. Furthermore, *INS Vishal* is to be built with US technology.⁸⁷ Both India and the US are close to formalising an Information Exchange Agreement (IEA) on aircraft carrier technologies. The countries had signed the terms of reference on June 17, 2015, during the first meeting of the India-US Joint Working Group (JWG) on carrier technology cooperation. The agreement on cooperation on aircraft carrier technologies as part of the Defence Technology and Trade Initiative (DTTI) was signed between India and the US during the visit of US President Barack Obama to India in January 2015. JWG is exploring the possibility of equipping India's indigenous carrier *INS Vishal* with an Electromagnetic Aircraft Launch System (EMALS), allowing the vessel to carry heavier and larger armed aircraft related to ski-jump launch system.⁸⁸

Apart from aircraft carriers, another significant element in Indian naval modernisation is the manufacturing of *INS Arihant*, India's first domestically manufactured nuclear-powered ballistic missile submarine (SSBN). It started its sea trials in 2015 and after successfully undergoing deep sea trials, it is currently undergoing sea acceptance trials. India has also started working on the development of its second Arihant-class submarine, namely *INS Aridhaman*, and the country plans to have at least four such submarines inducted by

2020.⁸⁹ With the deployment of *INS Arihant*, India would complete the development of its nuclear triad. Moreover, India's massive naval build-up and the introduction of a nuclear triad is another threatening development in the region.

Beyond conventional military capabilities, India is extensively engaged in developing its nuclear and missile capabilities.⁹⁰ At the beginning of 2016, India had an estimated stockpile of 100-120 nuclear weapons. This estimation shows an increase in the size of nuclear weapons stockpile from 90-110 warheads in 2015. Moreover, as Indian nuclear programme is primarily based on plutonium, the country is anticipating building of fast-breeder reactors with an aim to enhance its capacity to produce plutonium for its weapons. India is also working on expanding its uranium enrichment capabilities. It is believed that a new unsafeguarded centrifuge facility is under construction near Mysore. India's expanding nuclear enrichment capacity is to support its plans for naval propulsion reactors and manufacturing of a sea-based nuclear deterrent. India is vigorously pursuing the development of its nuclear triad in order to achieve an assured second strike capability. India plans to induct its first indigenously built SSBN, *INS Arihant*, in 2016.⁹¹ The submarine will carry a mix of K-15 Sagarika SLBM and K-4 SLBM. India successfully conducted the twelfth flight-test of nuclear-capable 700 kilometre range K-15 missile in

January 2013.⁹² Furthermore, despite international pressures, India moved ahead with a successful test of K-4 nuclear-capable SLBM from aboard *INS Arihant* with a dummy payload in April 2016. The launch sought to test the full operational range of the missile, which is 3000+ kilometres. Earlier, in March 2016, the missile was successfully tested from a submerged platform in the Bay of Bengal. K-15, along K-4, will give *INS Arihant* various ranges of strike capabilities. It is anticipated that *INS Arihant* will carry 12 K-15 missiles and 4 K-4 missiles.⁹³

From the above analysis of Indian modernisation of conventional and nuclear forces, it becomes clear that the conventional and strategic asymmetry is widening between India and Pakistan. Today, India boasts one of the largest military infrastructures in the world. India's arms acquisition and development are aimed at bolstering conventional and strategic asymmetry against Pakistan. This growing asymmetry between both the countries is becoming a destabilising factor for the regional stability equilibrium. In the South Asian strategic context, the state of conventional strategic asymmetry between India and Pakistan is inversely proportional to the nuclear threshold: higher the asymmetries lower the threshold while lower asymmetries put thresholds at higher levels. Indian asymmetric edge is putting Pakistan under increasing pressure. Since Pakistan relies on deterring the conventional military might of India with nuclear weapons, therefore, the

country is trying to wind down the pressure by expanding its nuclear capability and by lowering its threshold for employing nuclear weapons. It does not mean that Pakistan is moving away from credible minimum deterrence nuclear posture, however, there has to be small credible force whose relative size, credibility and survivability can be determined against Indian forces.⁹⁴

Implications of Full Spectrum Deterrence

The development of TNWs and Pakistan's adoption of FSD nuclear posture initiated a fresh debate over the country's nuclear posture with regard to South Asia's strategic stability. On the one hand, the international debate on Pakistan's nuclear programme consists of Western and Indian analysts, and on the other hand, the debate within Pakistan remains between serving and retired military officials and academicians. This wide range of different perspectives, criticisms and Pakistan's official views are discussed in the subsequent paragraphs.

Strategic Stability and Instability Prospects of Pakistan's TNWs

Internationally and regionally, concerns are being expressed about the impact of Pakistan's full spectrum deterrence and development of tactical nuclear weapons on strategic stability. The critics of the development of TNWs discuss the risks of

escalation from tactical level to the strategic level and the physical security of the weapons. The US has frequently raised concerns over the security of Pakistan's TNWs.⁹⁵ While addressing the US Senate Foreign Relations Committee, US Undersecretary of State for Arms Control and International Security, Rose Gottemoeller, stated that Washington was troubled by the development of Pakistan's battlefield nuclear weapons. She further said that the US has made its concerns known in Pakistan about the destabilising effects of battlefield nuclear programme on the regional strategic stability.⁹⁶ Apart from the US government's concerns, the country's think tanks and nuclear experts have also expressed their concerns on Pakistan's FSD nuclear posture. Toby Dalton and Michael Krepon, two leading American nuclear analysts, in their report 'A Normal Nuclear Pakistan, published in August 2015, raised questions on Pakistan's TNWs and their impact on the South Asian strategic stability. They argued that Pakistan's battlefield weapons create instability in the region by lowering thresholds and its employment in the battlefield may lead to a nuclear war between India and Pakistan.⁹⁷ Furthermore, both analysts advocated nuclear restraint in Pakistan's nuclear programme by suggesting that Pakistan should bring a shift in its nuclear posture of full spectrum deterrence to strategic deterrence or commit to a recessed deterrence posture and limit the production of its TNWs.⁹⁸ Such views, about Pakistan's TNWs, are also shared by Indian nuclear

experts. They have questioned the deterring value of Pakistan's TNWs by arguing that scientific examinations reveal that any use of Nasr on the battlefield would result in substantial civilian casualties, not to mention adverse effects on Pakistan's own military forces. Moreover, in another scenario, Pakistan would have to use its TNWs in early stages of the conflict, instead of losing the weapons due to the Indian pre-emptive strikes. Therefore, the use of TNWs on the battlefield may escalate a limited war to an all-out war.⁹⁹

A few Pakistani nuclear experts have also criticised and put objections over the deterrent value to Pakistan's TNWs. According to Brig (R) Feroz Hassan Khan, Pakistan's battlefield nuclear weapons are extremely destabilising. He believes that as Pakistan's position regarding TNWs is analogous to NATO's position in the Cold War, it would be inevitable to pre-delegate the launch codes of TNWs to field commanders.¹⁰⁰ In Khan's opinion, "Pakistani leaders also believe that nuclear weapons have to be configured for war-fighting roles if only to retain their deterrent value." Although Pakistan's conventional nuclear forces are not integrated, yet its targeting policies for conventional and nuclear weapons are integrated.¹⁰¹ He argues that "theoretically, TNWs provide increased flexibility and thus enhance deterrence, yet this flexibility incurs an escalatory cost," and "introducing TNWs brings a "host of operational dilemmas."¹⁰²

However, according to the official perspective, TNWs are not destabilising for regional strategic stability. The development of Nasr was a direct response to India's Cold Start Doctrine. Pakistan's full spectrum deterrence nuclear posture is aimed at deterring limited conventional war below Pakistan's existing thresholds for nuclear use, rather a war fighting strategy. TNWs act as a deterrent factor towards the Indian limited war doctrine. Therefore, the resultant deterrence stability will lead to strategic stability.¹⁰³

This official view is shared by most Pakistani nuclear experts. For instance, Dr. Shireen Mazari supports the official rationale for full spectrum deterrence and the development of Nasr. She argues, "Nasr is necessary, well-timed, and useful to address conventional asymmetries against India. The US-India Civil Nuclear Agreement and the creation of Cold Start have totally changed the nature of threat posed by India towards Pakistan. Therefore, Pakistan was required to alter the one-rung escalation ladder leading up to strategic nuclear weapon use." Mazari adds that changes to the escalation ladder do not signal a shift to war fighting strategy. These changes simply enhance the deterrence posture of Pakistan.¹⁰⁴

Another criticism which is levelled against Pakistan's TNWs is related to its command and control issues. As discussed previously, critics argue that TNWs may require

delegation of authority to the field commanders. Therefore, they fear an unauthorised launch. However, the official statement released from the Prime Minister's office clarifies that "Pakistan's nuclear missiles are centrally controlled and monitored by the NCA at all times – during peace as well as crisis through its National Command Centre (NCC)".¹⁰⁵ The Strategic Command, Control and Support System (SCCSS), which is an integral part of the NCC, provide state-of-the-art connectivity of country-wide strategic assets. The NCC is designed to enable decision making centrally. Keeping in view the above mentioned command and control structure of Pakistan, the necessity to pre-delegate the launch authority for any nuclear capable missile is disqualified by such a system.¹⁰⁶

Moreover, Pakistan's claims of retaining a centralised control over all strategic and tactical nuclear weapons at all times further repels the concerns of several nuclear experts who argue that TNWs are inherently destabilising when deployed so close to a border, and such risks relate to questions of battle-space management, field security problems, and the probability that India would pre-emptively attack the weapon systems.¹⁰⁷

With regard to above discussion on strategic stability and instability prospects of Pakistani TNWs in South Asia, it can be argued that these weapons have a stabilising effect on deterrence stability in South Asia. This

argument is further supported by Collin S. Gray's perspectives on the issue. Gray states that TNW doctrine and posture make limited war unlikely. The strategic burden shifts to the conventionally stronger side. This argument explains that the deterrent capability of TNWs that could enhance the deterrence prospects in a particular region decreases the chances of limited war. The conventionally stronger side would worry more than the weaker side possessing nuclear weapons.¹⁰⁸ Therefore, from the above argument, it can be deduced that Pakistan's TNWs have a stabilising impact on the strategic stability of South Asia by deterring the Indian limited war motives. A Pakistani nuclear expert, Adil Sultan, states thus:

TNWs were destabilising in the Cold War period in Europe where the larger geographical distances were the issues. The issue of command and control and pre-delegation existed there. This issue is dim given the limited geographical proximity in South Asia. TNWs can be centralised without provoking the worry of pre-delegation. With TNWs, Pakistan has already achieved all spectrum of deterrence.¹⁰⁹

Conclusion

India's military build-up and modernisation created a gap between the conventional and nuclear capabilities of India and Pakistan. Furthermore, Indian motives to wage a limited

war under Pakistan's nuclear threshold created strategic and deterrence instability in the region. This asymmetric military build-up and adoption of India's CSD have pushed Pakistan to adopt a 'credible minimum full spectrum deterrence nuclear posture' as a response to the emerging challenges and to restore both deterrence and strategic stability in South Asia.

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