INDIA'S PRO-ACTIVE MILITARY STRATEGY AND PAKISTAN'S TACTICAL NUKES: IMPLICATIONS ON SOUTH ASIAN DETERRENCE STABILITY

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LIST OF ABBREVIATIONS

AEW	Airborne Early Warning
ASFC	Army's Strategic Force Command
ATAGS	Advanced Towed Artillery Gun System
AWACS	Airborne Early Warning and Control System
BFSR's	Battlefield Surveillance Radars
BJP	Bharatiya Janata Party
BMDs	Ballistic Missile Defence System
C2	Command and Control System
CBMs	Confidence Building Measures
COAS	Chief of Army Staff
CSD	Cold Start Doctrine
DAE	Department of Atomic Energy
F-INSAS	Future Infantry Solider as a System
FSD	Full Spectrum Deterrence
IAEA	International Atomic Energy Agency
IAF	Indian Air Force
IAI	Israel Aerospace Industries
IBGs	Integrated Battle Groups
IGMDP	Integrated Guided Missile Development
IRS	Intelligence, reconnaissance and surveillance
ISPR	Inter-Services Public Relations

ISRO	India Space Research Organization
JF-17	Joint Fighter-17
LoC	Line of Control
LORROS	Long Range Reconnaissance and Observation
MBTs	Main Battle Tanks
MLRS	Multiple Launch Rocket System
MoU	Memorandum of Understanding
MTCR	Missile Technology Control Regime
NCA	National Command Authority
NCWF	New Concept of War Fighting
NMA	Non-Alignment Movement
NSG	Nuclear Supplier Group
NSNWs	Non-Strategic Nuclear Weapons
PAD	Prithvi Air Defence
PAF	Pakistan air forces
PAO	Pro-active Operation
PINSTECH	Pakistan Institute of Science and Technology
PNE	Peaceful Nuclear Explosion Programme
SLBMs	Submarine Launched Ballistic Missiles
SLCM	Submarine Launched Cruise Missile
SPD	Strategic Plans Division
SPIRI	Stockholm International Peace Research Centre
SWAC	South Western Air Command System
TNWs	Tactical Nuclear Weapons

UAVs	Unmanned Aerial Vehicles
UNCIP	United Nation Commission for India and Pakistan
UNO	United Nation Organization
USA	United States of America
USSR	United States of Soviet Russia
WLRs	Weapon Locating Radars

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Abstract

Since independence of Indian Subcontinent, India and Pakistan have had a history of enmity and conflict. Before nuclear tests by India and Pakistan, mutual hostility and geographical contiguity had led them into full scale military wars. This strategic calculus gained some equilibrium after 1998 nuclear tests by the both states resulting in an uneasy peace between them. Nuclear Weapons brought deterrence stability in South Asian region. The research focuses on Indian Cold Start Doctrine and strategic deterrence value of Pakistan's tactical nukes. The research also analysis the factors which have compelled Pakistan to adopt 'Minimum Credible Deterrence' posture with 'Full Spectrum Deterrence and repercussions of Cold Start/Pro-active military strategy and Tactical Nuclear Weapons on South Asian deterrence stability. The research concludes that Pakistan's tactical nuclear weapons have strengthened the deterrence equation between India and Pakistan as neither side is willing to take advantage of other's vulnerability primarily due to deterrence value of nuclear weapons. But India power projection behaviour is undermining the regional strategic environment and destabilizing deterrence. Pakistan takes suitable measures to secure its sovereignty and maintain existing deterrence stability in South Asia.

Key Words: Minimum Credible Deterrence, Full Spectrum Deterrence, Cold Start Doctrine, Tactical Nuclear Weapons, Conventional Asymmetry, Deterrence Stability.

CHAPTER 1

INTRODUCTION

South Asia has always been regarded as a region of instability and insecurity because of mutual hostility and unresolved disputes between India and Pakistan. This historical rivalry has always cast a dark shadow on South Asian environment with view of peace, security and economic collaboration. Before nuclear tests, mutual hostility and geographical contiguity had led them into full scale military wars. This strategic calculus gained some equilibrium after 1998 nuclear tests by the both states resulting in an uneasy peace between them. Formally India and Pakistan became nuclear weapon states in 1998 but nuclear factor was visible during the Brasstacks crisis of 1986 and Kashmir crisis of 1990. After nuclear explosion both the states acknowledged the Credible Minimum Deterrence as a key determinant of their nuclear posture (Mishra, 1978).

Deterrence debate started after 1998 nuclear test but further complicated by the crises i.e. Kargil war (1999), border standoff (2001-02) and Mumbai terrorist attack (2008), when both the states came into the edge of full scale conventional conflict but were compel to restraint their conflict due the existence of their deterrence capability. India's inability to mount a conventional response against Pakistan in Kargil conflict (1999) and Border standoff (2001-02) provoked the Indian army to develop a new military strategy to improve its capability to deploy military forces quickly and take benefit of its conventional superiority over

Pakistan. Consequently, in April 2004, India officially declared a limited conventional war strategy named as Cold Start Doctrine or Pro-active military strategy (Cheema, 2010).

Nuclear weapons brought deterrence stability in South Asia but Indian military advancements have increased the gap among conventional forces of both the states. These conventional developments have disturbed the existing strategic deterrence stability of the region. Therefore, in order to restore strategic balance of South Asia, Pakistan took necessitating suitable measures. Pakistan adopted Minimum Credible Deterrence with Full Spectrum Deterrence. According to Full Spectrum Deterrence, Pakistan would deploy tactical nuclear weapons to counter any Indian conventional assault (Joshi, 2013).

The gap created by India's conventional power expansion has been plugged by the tests of tactical nuclear weapons. Tactical Nuclear Weapons (TNWs) gives more flexibility to Pakistani strategist as it would not be forced to use strategic nuclear weapons against India in case if India executes its Pro-active war strategy. Pakistan's tactical nuclear weapons can be used only as a weapon of defense against Indian conventional attack and cannot be used in an offensive role. Indian Cold Start Doctrine and Pakistan's Tactical Nukes have considerable impacts on South Asian deterrence stability. Pakistan is always trying to react to those Indian developments that pose threat to its sovereignty. India's Military Cold Start Doctrine perpetuates and increases the arms race in the region (Sultan, 2013).

1.1 Rationale of the Study

The topic under consideration is important to discuss in order to identify the factors that compelled Pakistan to adopt credible minimum deterrence with full spectrum deterrence. This research will explore the impacts of Pakistan's short hand tactical nukes and India's pro-active war strategy on South Asian deterrence stability. It is significant to discuss these things in order to maintain existing deterrence stability of South Asia.

1.2 Statement of the Problem

Strategic imbalance between India and Pakistan gained some equilibrium after the nuclearization of South Asia in 1998 resulting in an uneasy peace between the adversaries. However, India's Cold Start doctrine has increased Pakistan's concerns regarding security which has modified its nuclear posture 'Minimum Credible Deterrence' with 'Full Spectrum' and this will have wide implications on South Asian deterrence stability.

1.3 Objective of the Study

The objectives of this study are:

- To highlight the main objectives of Pakistan to pursue its tactical nuclear weapons
- To examine the 'strategic deterrence value' of Pakistan's tactical nukes
- To analyze the rationale of Pakistan to adopt credible minimum deterrence posture with full spectrum deterrence

- To investigate the impacts of Indian CSD and Pakistan's TNWs on regional deterrence stability.

1.4 Research Questions

1. What is India's Pro-active Military Strategy?

2. What is the main objective of Pakistan to pursue tactical nuclear weapons?

3. What factors have compelled Pakistan to adopt 'Minimum Credible Deterrence' posture with 'Full Spectrum Deterrence'?

4. What is the 'strategic deterrence value' of Tactical Nuclear Weapons? How can they deter India's civilian leadership from authorizing an invasion into Pakistan?

5. What would be the repercussions of Pro-active military strategy and Tactical Nuclear Weapons on South Asian deterrence stability?

1.5 Significance of the Study

India and Pakistan have shared historical rivalry since independence which created instability in the region. Acquisition of nuclear weapons in 1998 created deterrence stability and peace in South Asia. This study will be beneficial for policy makers of both sides to take effective steps in order to maintain deterrence stability of the region. This study will also helpful for academician, students and future researcher to understand and explore further avenues related to South Asian nuclearization.

1.6 Theoretical Framework

Nuclear Deterrence theory provides theoretical basis for this research. Though deterrence is an older concept but contemporary developments of nuclear warheads have primarily changed the concept due to their capability to destroy the complete human civilization. Therefore nuclear deterrence has been recognized as the effective form of deterrence (Subrahmany, 1982). Deterrence is derived from a Latin word 'deterrer', in which 'de' mean 'away' and 'terrer' mean 'scare/ frightens'. Therefore, deterrence means dissuasion through the tools of fear and terror (Collins English dictionary, nd). Deterrence is a state of mind that discourages the adversary state form acting in a particular course of action. Major proponents of nuclear deterrence theory are Jacob Viner, Vernard Brodie, Basil Liddell Hart, Bush, William Bordam (Buzan, 1987), Oskar Morgenstern, Glenn Synder, Thomas Schelling, William Kaufmann, Herman Kahn (Zagare & Kilour, 2000).

According to this theory, rationality means rational actors (state), will not decide to initiate a nuclear conflict in order to pursue their national interests because of the punitive cost and high risk involved in it (Sridharan, 2007). Use of threats of massive retaliation discourages a potential aggressor state from adopting a particular course of action (Buzan, 1987). Deterrence can only be stable if it is premised on mutual vulnerabilities. Effective preparation of war lessens the chances of its occurrence (Subrahmany, 1982).

States will only refrain from aggression when their offensive abilities are inadequate in avoiding (adversary state) retaliation. Thus Defensive nuclear capabilities stabilize situation but if offensive nuclear capabilities predominates than nuclear war becomes inevitable. Sufficient degree of 'second strike' capability is essential for the strategic stability because if State cannot survive a nuclear first strike attack or doesn't have retaliatory capability then there is no deterrence (Waltz & Sagan, 1995). Effective command and control (C2) system is essential for effective deterrence. An effective command and control system decrease the chances of accidental and unauthorized use of nuclear arsenals (Waltz & Sagan, 1995).

Nuclear deterrence theory have two type of components such as physical and psychological. Physically it requires the military preparedness of the deterring state and this physical preparedness is used to infuse psychological impressions in the opponents mind regarding the retaliatory capability. Therefore, effectiveness of deterrence is dependent upon three important factors that is capability, credibility and communication (these are generally known as three C'S of deterrence). Capability means the physical ability or potential (military instrument) of a state to impose unacceptable damage to an adversary state that will exceed his calculated reimbursement. Credibility is the will of state to use these abilities in the hour of need. A last and most significant requirement of effective deterrence is 'Communication' which means conveying adversary state the consequences of undertaking a prohibited action (Baylis, Kenbooth, Garnett & William, 1987).

During the Cold War period, different strategies have developed based on the principles of deterrence theory. These strategies were mutual assured destruction, limited nuclear war, massive retaliation and flexible response. Mutual assured destruction is the capability of each adversary state to impose unaccepted and dreadful damage to other state regardless of who strike the first. Limited nuclear war means a conflict in which each state restrain on the use of nuclear weapons and limits its nuclear employment to a specific number of counter force targets. Massive retaliation is the use of nuclear arsenals against any type of violence. Flexible response is the number of options like political, economic, military and diplomatic can be used to prevent an attack. Nuclear deterrence has proved very successful during Cold War period as it has saved United States of America (USA) and Union of Soviet Socialist Republic (USSR) from the tragedy of nuclear exchange (Freedman, 2003). In sum, deterrence is basically the capability of a state to make other adversary state abstain from action by the threat of retaliation.

Basic assumption of nuclear deterrence theory that the state is a rational actor and punitive cost of a nuclear war made it impossible is quite evident in South Asian case. After nuclear test in 1998, concept of deterrence began to develop in South Asia. After 1971, no full scale war occurred because of threat of massive retaliation and punishment. Assumption of rationality has also been proved as both state leaders as deterred the potential escalation of Kargil conflict (1999), border standoff (2001-02), Mumbai attacks (2008) into a full scale war. As far as second strike capability is concerned, both Pakistan and India lack an assured second

strike capability consequently ensuing stability in South Asia. But some of Indian second strikes developments i.e. BMD shield and INS Arihant, which would overwhelmingly change the power equilibrium in favor of New Delhi that will eventually drive the region towards an unending arms race (Cheema, 2010).

Effective preparation of war reduces the chances of its occurrence. By applying this assumption on Indo-Pakistan nuclear deterrence stability, Indian military advancement and development of pro active war strategy enhance the chances of conventional war between two. In order to deter India from executing its Cold Start Doctrine, Pakistan adopted full spectrum deterrence posture. For operationalization of full spectrum deterrence Pakistan has introduces short range tactical nuclear weapons. According to FSD, Pakistan would deploy battlefield short range nuclear weapons to counter any Indian military aggression which reduces the chances of Indian military intervention into Pakistan.

2. Literature Review

Searching for the answers of research questions need extensive research and extroverted study in several dimensions. There is abundance of data in certain areas of the study but some other needs hard research. For instance, for the understanding of the concept, strategies and theory of deterrence there was enormous material. There is hardly any declassified governmental document on deterrence stability in the presence of tactical nukes. Literature review is covering a number of different aspects related to the topic of this study. Review will explain

Indian transformation of conventional doctrine. It will also explain the factors that compel Pakistan to move from minimum credible deterrence to full spectrum deterrence. At the end some futuristic aspects which will also be discussed which will affect the nuclear deterrence stability of South Asia.

The study presented a comprehensive analysis of the developments of nuclear strategies from 1945 to the end of Cold War. Writer has explained different concepts and doctrine of Cold War i.e. massive retaliation, mutual assured destruction, second strike capability and limited nuclear war. In addition to these American concepts writer has also explained nuclear policies and strategies of Soviet Union, China and European Countries. Book is a detailed account of the arms race between USA and USSR in search of credibility. This book explained chronologically explained all events from the nuclear bombing of the two Japanese cities to the USA invasion of Iraq. One of the major conclusions of this book is that nuclear weapons are only the weapons of politics and deterrence not a weapon of war (Freedman, 2003).

The study discusses an overview of South Asia nuclear threshold that Pakistan and India have a historical rivalry on territory and water issues. Both countries possess nuclear weapons which maintain the stability of South Asian Region. But it is difficult to determine whether nuclear weapons eliminate the chance of conventional war between two countries. India as compare to Pakistan is strong conventionally. India made a Cold Start Doctrine to launch quick, swift and short time period strikes against its neighboring state Pakistan to gain shallow

territorial gains. In response to Cold Start Doctrine, Pakistan made tactical nukes to deter any form of military retaliation of India. Pakistan tactical nuclear weapons in response to Indian proactive military strategy could escalate the chances of nuclear war in the region. After discussing an overview of South Asia nuclear threshold, he further identifies the repercussion of Indian Proactive strategy and Pakistan tactical nukes on existing South Asian nuclear threshold. He further discusses the nuclear prospects and aim of the nuclear weapons for the deterrence stability of the region (Mustafa, 2015).

This study has explained that till 2004, Indian military doctrine was non-aggressive and non-proactive which was known as Sundarji doctrine which had a limited offensive power. This doctrine was replaced with Cold Start Doctrine. Cold Start is an Indian aggressive military doctrine against Pakistan. It was proposed to allow Indian conventional forces, to holding attacks in order to prevent Pakistan for the nuclear retaliation. Under this doctrine, India can mobilize and retaliate quickly if any war would start with Pakistan. He further discussed the military spending of India which is continually increasing from 1997 onward at an average of 6.3 % per year. This military advancement further enhanced the conventional asymmetry between two states. This gap is filled by low yield warheads and delivery system used on the battle field, known as tactical nuclear weapons. Pakistan cannot compete India conventionally but maintain stability and balance in the region through tactical nukes (Ladwig, 2015).

The study explained the factors that compel Pakistan to acquire tactical nuclear weapons. Main motive of Cold Start Doctrine is to capture Pakistan's territory and would be returned on the demand of Pakistani extradition of militants inflicting militancy in India. Writer further explained Pakistan's stance on acquisition of tactical nukes to counter Indian conventional attack through CSD. After discussing Nasr as counter tactical nukes to Indian Proactive Strategy, he further mentioned two very important flaws i.e. Indian Proactive strategy has not actively implemented so it does not appears to be an actual threat to Pakistan. Secondly, establishment of the Command and Control system of Pakistan for Tactical Nukes that would avoid any unintentional or illicit launch is extremely difficult (Sankaran, 2014).

This study explains the Pakistan tactical nukes by comparing with Cold War tactical nuclear weapons and relates these insights to the contemporary South Asia. The writers define further that if USA and USSR experiences of Cold War have any indication, Pakistan's military planners and soldiers will find tactical nukes in battle field to be logistical nightmare. Writer has explained that military authorities of Pakistan may appear prone to make many of the same blunders as USA and USSR ground forces made during Cold War period. The development of Pakistan tactical nukes are to confront Indian increasing conventional power is similar to the challenges confronted in Cold War by USA and USSR but not identical. Cold War experience explained that tactical nukes were not the replacement for conventional forces and would not provide any guaranteed success. By comparing

Cold War experience regarding tactical nukes with contemporary South Asian dilemmas might be specifically useful in four areas i.e. military doctrine, operational aspects of TNWs, stockpile safety and survivability at peacetime (McCausland, 2015).

The study discusses the basic essence of acquiring nuclear weapon is to strengthen stability in the region, not only preventing nuclear war but also avoiding conventional clash. Pakistan is enhancing its full spectrum deterrent capability in South Asia through Tactical Nuclear Weapons strategy. According to Indian Nuclear Doctrine Pakistan 'First Use' policy either TNWs or Strategic nuclear weapons will be retaliated by India massively. He further elaborates the possibility of warfare in the region consequently negating the purpose of possessing nuclear arsenals. Tactical Nuclear Weapons (TNWs) threaten the deterrence stability of the region. At the end writer gave the best solution which is to wipeout TNWs from the list of nuclear weapons (Ghoshal, 2015).

This study deals with the advancement of strategic thought and military capacities is directly associated to the threat the state leadership perceive to its security. Pakistan is acquiring strategic nuclear weapons for their survival in South Asian Region and play essential role in its military strategy. With India's growing military spending and importing sophisticated weaponry to gain success against Pakistan through limited conventional war. In response Pakistan reliance on nuclear arsenals has further increased. Pakistan is adopting tactical nukes for

assured deterrence in the region, may help contain New Delhi from initiating a conventional war but it could also enhance the threats of a nuclear war in South Asia. Through Pakistani tactical nuclear weapons, Indian proactive strategy may have been counterbalance for the sometime. But if India reacts to Pakistan's short range TNWs then that would lead towards nuclear competition which ultimately disturb the South Asian regional stability. At the end writer gave the suggestions that instead of searching space for conventional war which would ultimately leads towards nuclear war, both countries should deem discussion on conflict resolution, nuclear and missile control strategy, military balance and ballistic missile defence system etc (Sultan, 2014).

The study explained TNWs of Pakistan as a short range surface to surface missile. The study is seeks to address the holistic assessment of the tactical nukes issue which was not discussed in existing literature. The article shows that short range ballistic nuclear weapons like Nasr has more shortcomings that benefit from all the perspectives like Nasr poses key challenges for nuclear deterrence stability in South Asia (Nagappa, Vishwanarhan & Malhotra, 2013).

This study has considered Pakistan TNWs as a main breakthrough to counter India's Proactive Strategy. India has conventional asymmetry over Pakistan and Pakistan considers employment of Tactical Nukes to regain balance on India's Proactive military strategy. He also expresses the presupposition that beginning of conflicts by one side may leads toward a nuclear war which would ultimately disturb the stability of the region. This study examines Tactical Nuclear

Weapons on a theoretical platform; further evaluate India's Proactive Military Strategy, Pakistan's developing concept of Tactical Nukes in South Asian deterrence stability/instability paradox, in order to describe significant lessons for Pakistan to ensure deterrence stability in the region (Ahmed, 2016).

The study explained the Pakistan's tactical nukes from the perspective of India's Proactive Strategy as a mean of counter force targets in battle field. He also talked about that in April 2011 Pakistan launched Nasr as first tactical nuclear weapon which is fired up to 60Km. it had been reported that new short range nuclear weapons in fully integrated in Pakistan command and control system. Test of tactical nuclear weapon Nasr was highly criticized for prompted further arms race in the region. After three months of Pakistani successful test of Nasr, India conducted test of Prahaar which have many similarities with Nasr. Pakistan tactical nukes are central part of its policy of deterrence. Through policy statements it is oblivious that Pakistan possesses its nuclear weapons with the objective to deter Indian offense. The Pakistani security dilemma is bounded by many restriction e.g. limited resources to maintain its tactical nukes if deployed, Pakistan doesn't have many ready suppliers of defence hardware, bread vs. gun dilemma and Pakistan image in the world as a responsible nuclear state of South Asia. He also gave the suggestion that through systematic arms limitation talk between two rival states India and Pakistan can end the arms race in the region. But it will require a lot of insight from the political leadership of both states (Yamin, 2015).

The study explained the importance of tactical nukes which are generally inferior and have relatively low range than that of the strategic nuclear weapons. They further describe that Pakistan tactical nukes would disturb the stability equation of the region. They said that Pakistan is acquiring tactical nuclear weapons in order to create stability in the region but fact is that TNWs further lower down the its nuclear threshold. Pakistan acquired TNWs to deter Indian devastating conventional offence to stop Indian army's attack into the territory of Pakistan. They further define the offensive and first use policy of Pakistan nuclear weapons. They mention that it's the India who wills response 'first strike' from Pakistan and need these TNWs to retaliate. They further discuss the complex issues i.e. Beijing collaboration on WMDs with Pakistan, nuclear command and control dynamic of Pakistan, TNWs implications and security, Indian response capability and more specifically focusing on technical aspects of Pakistan tactical nuclear weapons Nasr delivery system (Kanwal & Chansoria, 2013).

3. Research Methodology

This study uses qualitative methods. The nature of research is descriptive-exploratory. The research has used primary and secondary sources for data collection. Primary sources such as un-structured interviews from experts and analyst. Secondary sources include published literature such as books, News paper articles, research-articles from journals and organizational reports have been consulted. Along with that online documents (Agreements, Memorandums of

Understanding) and Joint Statements have also been consulted whenever required and available.

4. Organization of the Study

This research consists of five chapters. Chapter 1 related with the Introduction and second chapter deals with the India-Pakistan relations after independence. Chapter 3 related to the nuclearization of South Asia. Chapter 4 addresses the Indian offensive Military Cold Start Doctrine and Pakistan's security concerns. Chapter 5 deals with Pakistan's response to Indian Cold Start Doctrine. Chapter 6 addresses the Implications of Indian Cold Start Doctrine and Pakistan's Tactical Nukes on South Asian deterrence stability. Chapter 7 is related with the conclusion of the research.

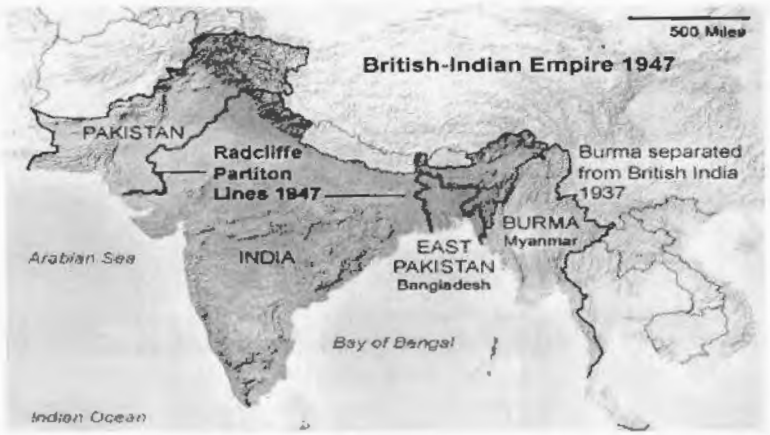
CHAPTER 2

HISTORICAL BACKGROUND

Hindus and Muslims were the two major communities in the Indian sub-continent. These two communities had social, cultural, political, economical and religious dissimilarity which was later known as 'two nation theory'. On the basis of two nation theory, Muslims of Indian sub continent started struggle for an independent Muslim state where they can freely practices their religious beliefs. Eventually this theory became the root cause of the creation of Pakistan. According to the partition plan of 1947, two boundary commissions were established for the redrawing of Punjab and Bengal boundary under the supervision of Sir Cyrill Radcliffe on the basis of ascertaining the contagious areas of Muslims and non-Muslims (Symonds, 1949). But in the demarcation of Punjab and Bengal boundaries, the Radcliffe awards were unfair. In Punjab, Muslim majority areas such as district of Gurdaspur consist of four tehsils (Gurdaspur, Batala, Shakergarh, Pathankot) in which except Pathankot, all other tehsils had Muslim majority. Gurdaspur district was awarded to India in order to get access to the princely state of Jammu and Kashmir (Ali, 1967). In the demarcation of Bengal Province, Redcliff not only gave Calcutta but also awarded Muslim majority areas Nadia and Murshidabad to India by ignoring the claim of Muslims.

Hence, demarcation of boundary was based on preference of interest rather than justice (Ali, 1967).

Figure 2.1 Partition of British Indian Empire 1947



Source: Jacobs, F. (3rd July, 2012). Peacocks at Sunset. *The New York Times*. Retrieved from https://opinionator.blogs.nytimes.com/2012/07/03/peacocks-at-sunset/?_r=0. Retrieved on 1st February, 2017.

2.1 Immediate Post Partition Problems

After the division of Sub-continent immediate problems such as the distribution of liabilities, assets, debts, military equipments and future of princely states came into front. Distribution was unfair between India and Pakistan. At the time of partition, Rs. 4 billion cash balance was in the reserve bank of India which had to be divided between Pakistan and India with the ratio of 5:17. On December 1947, it was decided that in distribution of liabilities and assets, Pakistan would receive Rs. 750 million from India as it share of balances. But Pakistan only received Rs. 700 million and pay 17 percent of the debt to Indian Government

(Gupta, 1961). Another post partition problem was the unfair division of military assets. It was decided that military assets would be divided between two sovereign states under the supreme command of Field Martial Auchinleck but he windup his task before duration and sent a report to British government that 'Present Indian cabinet was implacably determine to do all in their favor to prevent the establishment of the power of Pakistan on firm basis'. After his report, Pakistan received only scarp military equipments and unserviceable aircrafts. There were sixteen ordinance factories located in India and as a share Pakistan received only Rs. 60 million. It was evident that India wanted to bankrupt and destabilized Pakistan (Jha, 1971).

Indian subcontinent had 562 princely states which were under British Indian Empire. At the time of partition, there were certain uncertainties over the future of princely states. Lord Mountbatten was so engaged with the partition plan that he did not turn to the problems of princely states which eventually created a mess of history between two sovereign dominions. Princely states would decide to accede with one of the two powers India and Pakistan, in accordance with the partition principle. Most of the princely states were acceded with either of the two powers without difficulty. But three princely states name as Hyderabad, Junagadh and Kashmir where the rulers tried to remain as sovereign states. In the case of Junagedh and Hyderabad, rulers were Muslims and majority of the population were Hindu. Muslims rulers of these two princely states wanted to accede with Pakistan but it was be the violation of the partition principles of subcontinent

(Ganguly, 2007). The Governor General of India, Lord Mountbatten telegraphed to Muhammad Ali Jinnah that accession of Junagadh and Hyderabad was against the rule of partition so Pakistan followed the order of Mountbatten. Eventually, India forcefully annexed Junagadh and occupied Hyderabad without any justification (Ghaznawi, 1966).

2.2 Major Indo-Pak confrontations

2.2.1 India-Pakistan confrontation on Kashmir Issue (1947-48)

Princely state of Jammu and Kashmir was ruled by a Hindu Maharajah Hari Singh but the population was predominantly Muslim, contagious to Pakistan's territory and would be annexed with Pakistan. But Hari Singh concluded a standstill agreement which was accepted by Pakistan but not by India. After standstill agreement, Hari Singh started brutal killing of Kashmiri Muslim population. In response to atrocities, Muslim population revolted in Poonch district which was later joined by tribesman of North-West Frontier Provinces of Pakistan. The overthrow of Maharaja Hari Singh appeared almost imminent. Maharaja Hari Singh asked military assistance from Indian government and in return secretly signed accession of Kashmir with India (Cheema, 2015). After accession, Indian army entered into Kashmir through Gurdaspur in 1948. After viewing the situation, Pakistan army entered into Kashmir and a conflict between Pakistan and India was started (Hussain, 1998). By the mid of 1948, with the help of Pakistan army the freedom fighters were successful to take control of Baltistan, some parts of

MirPur and Poonch from India which is known as Azad Kashmir. India was successful to get control of Jammu, Ladakh, Srinagar and a large amount of Kashmir area (Bajwa, 2013).

India raised the Kashmir issue in United Nation Organization (UNO) and filed a case against Pakistan under Article 35 of chapter six which is related to 'peaceful resolution of conflict' rather than under chapter seven which deals with 'the act of aggression'. On 17th and 20th January 1948, UNO passed two resolutions for the settlement of Kashmir issue. According to the first resolution, both India and Pakistan stop taking actions that would further exaggerate the conflict. The resolution of 20th January 1948 was related to the establishment of commission named as United Nation Commission for India and Pakistan (UNCIP). Main objective of UNCIP was to play a role of mediator between conflicting states (Hussain, 1998). United Nation Security Council (UNSC) passed two resolutions for the settlement of Kashmir issue on 13th August, 1948 and 5th January, 1949 respectively, in which these suggestions were made:

i. Immediate ceasefire on all fronts in Kashmir.
ii. The armies of both countries should leave the disputed territory.
iii. Free and fair plebiscite should be held under United Nation supervision for the resolution of issue (Ghaznawi, 1966).

As a result, a ceasefire agreement was signed between India and Pakistan on 1st January 1949 and Ceasefire Line (CFL) was drawn on 27th July, 1949. According

to CFL India was able to get control of richest and most populated areas of Kashmir (Bajwa, 2013). India was agreed on UN recommendations but did not hold a plebiscite. In August 1953, the then Prime Ministers of both the states sat together and decided to settle dispute according to the wishes of people. United Nation Security Council had appointed Admiral Nimitz as administrator of plebiscite but at the same time Pakistan entered into a military alliance with United States of America which became an excuse for the then Prime Minister of India Nehru to refuse any further negotiation on Kashmir issue. Indian leaders called Kashmir as '[1]atoot ang' of India and didn't hold a plebiscite in Kashmir till date which became a contentious issue between India and Pakistan (Cheema, 2015).

2.2.2 Conflict on Rann of Kutch

Ran of Kutch was another territorial dispute between India and Pakistan. The disputed area of Rann was consisted of 3500 square miles, situated approximately with the 24th parallel (Buzan & Rizvi, 1986). Disputed area was situated on the border between the Sindh province of Pakistan and Indian state of Gujrat. According to the Redcliff Award, Kutch state annexed to India but did not demarcate the boundary which consequently became a territorial dispute between two dominions (Ali, 2009). Rann of Kutch has a strategic significance for both the states. For India, through this area it could disjoin the Northern and Southern parts of Sindh Province of Pakistan by cutting off the Karachi city from the rest of Sindh Province that can deprive Pakistan's connection with sea. Furthermore, it

[1] India considers Kashmir as an integral part of it.

facilitates New Delhi to launch a massive offence against the Thar Desert of Pakistan. Strategic significance of Kutch for Pakistan was concerned; in conflict with India Kutch was the only area from where Islamabad could initiate a joint operation of army, air force and navy (Ali, 2009).

Conflict over Kutch was started in 1956 when New Delhi vehemently captured the some areas of northern part of Kutch. Pakistan protested against New Delhi aggressive moves but India did not respond. On 1960s, both states India and Pakistan decided a ceasefire but in January 1965, India started developing naval base, air base and army barracks station in disputed territory. India continued to move forward in the disputed area which made it clear that India wanted to occupy the land forcefully. On 5th April, 1965, Pakistan's army command realized the severity of the situation and issued orders to retaliate in case Indian army move forward (Ahmad, 1971). Forces of both sides came into front on 10th April, 1965 and conflict started between India and Pakistan. As the conflict over Kutch continued Great Britain intervened and convinced both states for negotiation (Sattar, 2007).

Both the states signed a ceasefire agreement on 30th June 1965, for ending the conflict and initiation of bilateral negotiation for the peaceful resolution of dispute (Zafar, 2007). Although, no progress was made through negotiation, after that both the states were agreed to present a case in front of tribunal for the settlement named as 'India-Pakistan western boundary case tribunal' (Ortan, 2010). Both parties India and Pakistan committed to abide the decision of tribunal.

On 19th February, 1968, tribunal took final award in which Pakistan approximately gained an area of 350 square miles and India gained 3200 square miles and territorial dispute over Kutch was ended peacefully between two states (Ray, 1973).

2.2.3 Second Conflict over Kashmir Issue

The Indo-Pak war of 1965 was the second military conflict over the unresolved issue of Jammu and Kashmir but this clash did not produce any effective results for the resolution of the conflict. This conflict was actually the failure of United Nation, United State and Great Britain mediatory role to press the India for the peaceful solution of Kashmir issue, which encouraged Pakistan to take unilateral and offensive action against India for the resolution of issue (Hussain, 1998). Lieutenant General Akhtar Hussain Malik's plan named as 'Operation Gibraltar' was approved and operationalized on 5th August 1965 (Dixit, 2002). India responded strictly and blamed Pakistan for supporting insurgency in Kashmir. Pakistan countered Indian complains by refusing any connection with irregulars and described the situation as a revolt against oppressive policies of India. Till 16th August 1965, cross border firing and intense situation continued (Khan, 2009). On 6th September 1965, Indian military crossed the international border and launched a full scale war on Pakistan (Hagerty, 2005).

This war was mainly fought by the military and air forces of both states. On the 6th September 1965, Indian military crossed the border of Pakistan from Punjab

Province. The plan of Indian troops was to advance up to the Ichogil canal and capture the canal from Ranian from the north and Dograi on GT Axis. On 7th September, Pakistan air forces also took part in 1965 war and gave heavy loss to enemy air forces. Squadron leader Muhammad Mahmud Alam made the history by shooting down five enemy hunters in one single combat. On 8th September, Pakistan air force gave huge damage to Indian air force by destroying about 70 Indian aircrafts. On 9th September, Pakistani troops were successful to withdraw Indian troops from Kasur area. The grand tank battles of the 1965 conflict were taking place in Khem Karan Sector and the Sialkot Sector (Chakravorty, 2015).

This conflict was ended on 22nd September with the intervention of United Nation Security Council (UNSC). UNSC passed a resolution on 23rd September 1965 and demanded an unconditional ceasefire (Khan, 2009). Thereafter, Soviet Union former Prime Minister Alexie Kosygin offered his services for deciding permanent settlement of 1965 conflict. Talks were held in Tashkent between the then Prime Minister of India Shastri and former Pakistani President Ayub Khan under the aegis of the USSR Prime Minister. Both the states signed an agreement on 10th January 1966 named as Tashkent Declaration. Tashkent Declaration restored the status quo in Jammu and Kashmir as it existed before the 5th August 1965 (Bammi, 2016).

demonstrations were started which were soon turned into a violent conflict in East Pakistan. In order to control the running situation in East Pakistan former President Yahya Khan started a 'Search Light Operation' in 25th March 1971 against the demonstrators which further intensified the situation in East Pakistan (Kokab & Abid, 2013).

In order to exploit the East Pakistan situation in its favor, on 31st March, Indian parliament passed a resolution for full support for the East Pakistan protestors by stating that the struggle and sacrifices of East Pakistan's would receive full support from India (Sattar, 2007). India gave full military assistant to Muktibani fighters in East Pakistan. Government of West Bengal, Assam, Bihar, Tripura and Meghalaya established camps for refugees along with the border. On 17th April 1971, India allowed exiled leaders of Awami league to form a provisional government near Calcutta. On November 21st 1971, India launched a full fledge attack on East Pakistan. After Indian involvement, the situation in East Pakistan was getting worse and in response West Pakistan launched military strikes in 3rd December 1971 (Kokab & Abid, 2013).

The full scale war began on 4th December between India and Pakistan when former Prime Minister of India Indira Gandhi ordered joint operation of army, air force and navy against West Pakistan from three sides West Bengal, Tripura and Assam. It was very difficult for Pakistani forces to counter Indian military huge offense and Indian navy blockade further worsen the situation. On 15th December 1971, General Naizi offered a conditional ceasefire which was rejected by Indian

forces and untimely defeated the Pakistani forces in East Pakistan. On 16th December 1971, Pakistan was divided into two parts with the establishment of Bangladesh as a sovereign state on the world map (Rizwan, 2014). A large number of prisoner (civilians and military persons) were taken by Indian forces as a prisoners of war (POW). On 21st December 1971, UN passed a resolution (for the treatment of prisoners) to pledge both states to Observe Geneva Convention of 1949. On 28 June 1972, Prime Minister's of both states met at Simla for the post war settlement and concluded a Simla Agreement. According to the agreement, both states would respect the ceasefire line in Kashmir and refrain from the threat and use of force against each other. Both states also decided to take possible measure for the peaceful settlement of Kashmir issue (Hassan, 2009).

2.2.5 Water Issue between India and Pakistan

The water dispute between India and Pakistan, took date back to the pre-partition era, when there were significant differences between inter-state of Punjab, Bikaner, Sindh and Bahawalpur. The system of river in the Indus basin comprises 2000 miles of the river Indus and its five tributaries from the east named as Jhelum, Chenab, Sutlej, Ravi and Beas with an aggregate length of 2800 miles (Arora, 2007). After the partition of subcontinent, this inter-state water dispute became an international dispute among newly independent states. The issue around water sharing was now between west Punjab of Pakistan and East Punjab of India. The land of the West Punjab (Pakistan) was fertile but the land of East Punjab (India) was not considered particularly fertile. At the time of partition, Sir Cyril

Radcliffe drew a line across the Indus, dividing not just the land but also waters and integrated Indus canal system. Consequently, India and Pakistan had the difficult responsibility of finding a proper mechanism for management of irrigation system for the future (Verghese, 1997).

Chief engineers of East and West Punjab signed a 'standstill Agreement' on 18th December 1947 in order to resolve the conflict. Standstill agreement froze water allocation allowing discharges from headwork on the Upper Bari Doab Canal, the Bahawalpur Canal and Dipalpore canal system. This agreement was expired on 31st March 1948 and the absence of any other formal agreement with Pakistan, the India acquired legal right to use water of Sutlej, Beas and Ravi. In 1951, David Lilienthal visited India and Pakistan and suggested some system to manage the Indus Basin by joint control. It was after Lilienthal suggestions; the World Bank former president Eugene Black invited the Prime Ministers of India and Pakistan to Washington for the resolution the water dispute. The World Bank then came with a proposal which suggested division of the Indus western tributaries to Pakistan and the eastern tributaries to India, besides a proposal of continued deliveries to Pakistan during transition period of ten years. India accepted the World Bank proposal while Pakistan gave its qualified acceptance on 25th March 1954. Later when the World Bank arranged an international Indus Basin Development Fund and raised 893 million dollars, the Indus water treaty was signed by the both states on 19th September, 1960. According to this treaty, India was given an exclusive right of three eastern rivers name as Sutlej, Ravi and

Beas, where as Pakistan was given the right of three western rivers Indus, Jhelum and Chenab. The tributaries of these rivers were also considering their part under the treaty (Vaid & Maini, 2012). The Indus water treaty has proved to be an outstanding example of conflict resolution between two states. Since the early 1990's, water stress in Indus basin was rise, after that the treaty came under strain. Increasing Pakistani demands and Indian continued building of hydro-power and other dams by India on the western rivers may further threaten the treaty. Another war between India and Pakistan is expected to be fought over water issue.

2.2.6 Conflict over Siachen Glacier

The Siachen glacier which is 70 kilometer long located in the eastern Karakoram Range and runs from Indira Colin the north-west to the starting point of Nubra river in the south east. The total area of this glacier is less than 1 thousand sq. km. Siachen glacier is the world second non polar glacier. India initiated Siachen dispute by launching secret operation Meghdoot in April 1984. Through this operation, India was successfully captured Siachen glacier and its approaches in the eastern Karakoram mountain range, adjacent to the borders of India, Pakistan and China (Watson, 2003). Strategically Siachen glacier has significant importance for India and Pakistan because it's the largest single source of fresh water on the Indian subcontinent. India signed an agreement in June 1989 for the withdrawal and re deployment of troops in Siachen but later reneged from the agreement. In November 2003, both the nuclear armed rival states took a significant step to end conflict over Siachen glacier and agreed to a cease fire.

Presently, both the states deployed their troops in Siachen and are not ready to resolve the issue through bilateral talks (Khan, 2012).

Thus, the history of Indo-Pak is the history of conflict which was motivated by the conflictual interest, ideological clash and struggle for power. It is evident that both the South Asian neighbour countries are in a relationship of hatred and mistrust from the beginning. Since independence, there had been clashes between the two states over territory and resources. India and Pakistan fought two full fledge wars over Kashmir issue. Indian involvement in civil war in East Pakistan resulted in the partition of Pakistan. 1971 conflict with India intensified the Pakistan's fear about the intensions of New Delhi.

CHAPTER 3

NUCLEARIZATION OF SOUTH ASIA

India initiated its nuclear program before the partition of sub continent. Dr Homi J. Bhabha, the father of India's Nuclear Program, in 1945 managed to establish the institution named as 'Tata Institute of Fundamental Research' (TIFR) with the assistance of 'Sir Dorabji Tata Trust' to build up a school of physics. In 1948, 'Indian Atomic Energy Commission' was established under the supervision of the then Prime Minister Jawaharlal Nehru. In early 1950's, Indian department of Atomic Energy Commission designed technological objective of Indian nuclear program. The aim of the program was to produce Plutonium with the help of local Uranium sources both for nuclear energy and weapon production (Ganguly, 2002. p, 102).

India established 'Department of Atomic Energy' (DAE) in 1954, which was also under the direct control of Prime Minister (Marwah & Pollack, 1980). After DAE, Indian scientists under Dr Bhabha supervision were successful for carrying out first persistent chain reaction in Asia. This test was carried out at the indigenously created 1 MW research reactor, named as 'Apsara' (Menon, 2002). In 1958, Indian scientist Dr Bhabha declared publically that within eight months, India could produce a nuclear explosive device. It was an ambitious claim because India had no source for the production of plutonium at that time, which is the

significant element for the production of nuclear device. The second reactor named as CIRUS was established in 1960, with the assistance of Canada without any safeguard agreement signed between them. CIRUS was the first and only source of fissile material for India. This reactor has a capacity of 40 MW and can produce up to 15 Kg of Plutonium working on 100 percent capacity (Koch, 1999).

Indian third research nuclear reactor named as Zerlina became operational with the capacity of 100 MW in 1961. In 1962, first heavy water plant of India was commissioned at Mangal. An agreement was signed with USA in 1963 for assistance of nuclear power station at Tarapur. After China-India border war in 1962 and Chinese nuclear test in 1964, US assured supports to India which prevents India from developing a nuclear weapon. In April 1964, the then Indian Prime Minister Shastri inaugurated first Plutonium Separation Plant and India became fifth country of the world which had this technology (Ali, 1984).

Chinese nuclear weapon test in 1964 raised alarms in Indian Parliament and on 16th November 1965, Indian the then Prime Minister Lal Bhaadur Shastri during an address in Upper House of Parliament, was forced to admit that Indian commitment to stand for non-proliferation of nuclear weapons was not immutable. But on 3rd December 1965, Indian Prime Minister back away from his previous statement by saying that India has gave up the idea of making a bomb because it cannot afford the cost. In March 1966, US state department stated that fuel had been removed from CIRUS reactor that could be used for the development of nuclear weapon in future. This showed that India was taking steps for making

nuclear weapon that could be converted into operational capability with a short period of time. In 1966, in the meeting of National Security Council under acting Secretary of State, George Ball affirmed that India was almost firm to develop nuclear weapon and efforts to influence Indian decision were not likely to attain more than a short delay in development of nuclear weapon (Salik, 2009).

3.1 India First Peaceful Nuclear test (1974)

India conducted a successful underground peaceful nuclear explosion (PNE) in 18th May 1974, which shocked the international community in general and South Asian countries in particular. The nuclear explosion with an explosive power of 10-15 kilotons was carried out at a depth of 100 meters. After nuclear test, Atomic Energy Commission official announcement was that India would only use nuclear explosion for the peaceful purposes. After nuclear test, Indian former Prime Minister Indira Gandhi said that India would not use the knowledge of nuclear power other than peaceful purposes (Salik, 2009). India and Canada agreement on CIRUS was based on trust and did not sign any safeguard agreement. It was widely known that plutonium used in nuclear weapon was extracted from CIRUS, consequently Canada cancelled its assistance for the Rajasthan power plants. International community established Nuclear Supplier Group (NSG) soon after Indian nuclear test to restrain nuclear material transfer to other countries (Rosenstein, 2010).

3.2 Pakistan's Nuclear Program (1974)

Pakistan in comparison with India was a late participant in nuclear field because from the beginning Pakistan was surrounded by number of problems. Pakistan had initiated peaceful nuclear program but had been slow in taking it forward because of lack of interest at political level. In 1954, Pakistan appointed a twelve member Atomic Energy Committee to made plans for the promotion of atomic energy for the peaceful purposes. On 11thAugust 1955, Pakistan signed an agreement with US to cooperate for the peaceful use of nuclear energy. On March 1956, Atomic Energy commission was established to participate in US Atom for Peace initiative. The Atomic Energy Council was consigned the task of planning and developing the peaceful uses of atomic energy (Charnysh, 2009). In 1958, Zulfiqar Ali Bhutto became the minister of fuel, power and natural resources and mentioned the badly need of atomic energy program. In 1963 research reactor supplied by US was finally set up at PINSTECH (Pakistan Institute of Science and Technology) under (IAEA) safeguards (Kapor, 1987).

Pakistan Atomic Energy Commission started negotiation in 1962 with Canadian General Electrical Company, for establishment of heavy water nuclear reactor at Karachi. Agreement was signed in May 1965. With Canadian assistance, Pakistan inaugurated KANUPP reactor in 1972. KANUPP is under the safeguard of IAEA. In mid 1960s, Pakistan entered into agreements with Italy, Spain, Denmark and France for the supply of nuclear materials and equipments. In 1969, Great Britain Atomic Energy Agency agreed to provide nuclear fuel reprocessing

plant which had a capability of extracting 360g of plutonium annually. In 1970's Pakistan and Soviet Union entered into an agreement for the exchange of atomic information, scientist and material for the next ten years (Salik, 2009).

In 1970, for the concentration of Uranium Ores Pakistan built a pilot scale plant at Dera Ghazi Khan. General Ayub Khan repeatedly said that we will buy the bomb off the shelf if India goes nuclear. After the separation of East Pakistan from West Pakistan in December 1971, Zulfiqar Ali Bhutto resumed power as a President and established a separate ministry of science and technology. In 1972, thinking about the bomb was started in Pakistan after India's active military intervention in East Pakistan which ultimately divided Pakistan into two parts. After loss of Eastern Pakistan, Pakistan realized the conventional gap between India and Pakistan. The conventional disparity forced Pakistan to develop nuclear weapon (Matto, 1999).

In March 1974, under the supervision of Dr Munir Khan, Pakistan Atomic Energy Commission started to work on nuclear explosive device (Charnysh, 2009). In spite of Pakistan's poor economy and limited financial resources, Bhutto expressed his determination for acquisition of nuclear weapons for Pakistan in following words ' If India developed a nuclear bomb, we will too develop one, even if we have to eat grass because there is no conventional alternative to atomic bomb' (Chakma, 2009, p, 17). After Indian nuclear test in 1974, Islamabad also proposed a South Asian nuclear weapon free zone which was rejected by India (Menon, 2002). Former Prime Minister Zulfiqar Ali Bhutto perceived Indian

nuclear test as final anticipation for Pakistan's death. A press conference was held after Indian nuclear test in which former Prime Minister said that nuclear program of India was designed to threaten Pakistan and create hegemony in South Asian Region. Therefore, anarchical international system and presence of nuclear hostile neighbor pushed policy makers of Pakistan to pursue nuclear weapon in order to create deterrent posture (Salik, 2009).

3.3 Sundarji Doctrine (1981)

After independence, military posture of India had been fundamentally defensive. Former Indian Defence Minister George Fernandes explained military doctrine as 'a non aggressive and non proactive defense'. Sundarji Doctrine was named after India's former Chief of Army Staff General Krishnaswamy Sundarrajan Sundarji. This military doctrine was practiced by India from 1981 to 2004 (Ladwing, 2015). According to this doctrine Indian borders were protected by seven defensive 'holding corps' which consisted of infantry and extensive artillery. These corps would be trained to hold any kind of strike from Pakistan. Indian policy makers were satisfied with the ability of their conventional forces that they would be able to defend any offensive attack on Indian territory. According to this doctrine, in case of any conflict, Indian army should take only 72 to 96 hours for complete deployment (Chandio, 2016).

3.4 Brasstacks Crisis (1986)

Indian military started exercise named as 'Brasstacks' near South-Eastern border of Pakistan which resulted in crisis between two states in November 1986 (Sagan, 2002). In this exercise India mobilized 15, 0000 troops in Rajasthan province which is 100 miles away from Pakistan's border. Brasstacks was a planned operation to assess the electronic warfare equipment and demonstrations of Indian army's computerized units. This largest military exercise raised fear in Pakistan that India was planning to launch an immediate attack on it. The then Pakistani army Chief Pakistan General Muhammad Zia-ul-Haq in response immediately mobilized its forces close to the Indian border (Weisman, 1987).

Lack of information and bad communication created an atmosphere of intense crisis in 18th January 1987. Both the countries placed their all armed forces on high alert. On 20th January 1987, when Indian former Prime Minister Rajeev Gandhi decided to begin airlifting troops to Punjab province, which further escalated the conflict into an all out war. On 28th January 1987, situation was more tensed when India demanded that Pakistani soldiers be withdrawn to peace time positions. During the Crisis of 1986-87, Pakistani officials reportedly convened implicit nuclear threats by stating that Pakistan had acquired nuclear weapons capability and if needed nuclear weapon could also be assembled on a short notice. In an interview with Indian Journalist on 28th January 1987, Dr Abdul Qadir Khan disclosed that Pakistan developed a nuclear weapon, which could be used to defend Pakistan against Indian attack. After these statements from Pakistan,

International community also effectively contributed towards diffusing the crisis. Indian exercise Brasstacks was designed to launching conventional attack across the International border was contained effectively due to the nuclear signaling from Pakistani side. Therefore, the concept of deterrence stability was introduced for the first time in South Asia in Brasstacks crisis (Matinuddin, 2002).

In response, USA and USSR played an effective diplomatic role in resolution of Brasstacks crisis. The then President of USA Ronald Reagan telephoned to the Prime Ministers of both states and instructing them to 'Cool it' (Kux, 2001). These efforts prevented the crisis from escalating into a nuclear conflict. On 2nd February 1987, former foreign secretaries of both states agreed in a meeting at New Delhi for the reduction of conflict. General Zia-ul-Haq 'Cricket Diplomacy' played a significant role in resolution of Brasstacks crisis. On 21st February 1987, General Zia-ul-Haq reached New Delhi to watch the final cricket match between India and Pakistan at Jaipur. In his visit, General Zia meet with former Prime Minister of India Gandhi who assured him that Brasstacks crisis would be resolved. The Brasstacks crisis was followed by Confidence Building Measures (CBMs) between India and Pakistan. One of the important CBMs which were signed in 31st December 1988 was the prohibition of attack against nuclear installation and facilities (Khalid, 2012).

3.5 Spring Crisis (1990)

From the beginning, Pakistan was in a conflict with India for the forceful occupation of Kashmir. Therefore, India's forceful Occupation of Kashmir resulted in freedom movement by the Kashmiri people in 1990. Being disappointed by the efforts of International Community, Pakistan adopted compellence strategy to support freedom struggle in Indian Occupied Kashmir (Ghani, 2012). A freedom movement was started in occupied Kashmir in late 1989 which ultimatcly created 1990's spring crisis. India accused active militants in Kashmir that they had link with Pakistan Intelligence Agency. In response India reinforced its one division army in Punjab and three divisions in Occupied Kashmir as part of its 'Precautionary movements' which brought two states at the brink of war. Pakistan positioned its military corps in Punjab and Azad Kashmir (Cheema, 2010).

Pakistan implicitly threatened to use its nuclear arsenals in case India violated the ceasefire line. In March 1990's, thousand of forces of both states were positioned against each other across the line of control which seemed to be heading towards full scale war between two nuclear states. The unresolved territorial dispute over Kashmir brought two states face to face with a full scale conflict (Cheema & Cohen, 2007). United State played a pro-active role in resolution of spring crisis. US Ambassador William Clark and Robert Oakley played active role in New Delhi and Islamabad respectively. American ambassadors sent representatives to the crisis areas on both side and reported that no military

preparedness were afoot which assured both states each other intension's and conflict was resolved (Badmus, 2006).

3.6 1998 Nuclear Tests

3.6.1 Indian Second Nuclear Test

After first peaceful nuclear explosions (PNE) in 1974, Indian scientists started work on further nuclear explosion with more sophisticated designs (Hoodbhoy, 2013). In 1983, India commenced a military missile program through the initiation of Integrated Guided Missile Development Programme (IGMDP) with clear purpose of developing five missile types named as Nag (an anti tank guided missile), Trishul (a short range surface to air missile), Akash (a medium range surface to air missile), Prithvi (a short range battlefield support missile), and Agni (an intermediate range ballistic missile). In 1983, R5 reactor was commissioned which produced 23.4 kg Plutonium annually. Extracted Plutonium from R5 was used in bomb program (Salik, 2009). On 4th February 1998, the BJP came into power in India with the manifesto of test and induct nuclear weapons. After one month of its taking power, BJP government made second nuclear tests on 11th and 13th May at Rajasthan desert. The tests were named as 'Shakti' series of test (Sing, 12 May 1998).

3.6.2 Pakistan nuclear test (1998)

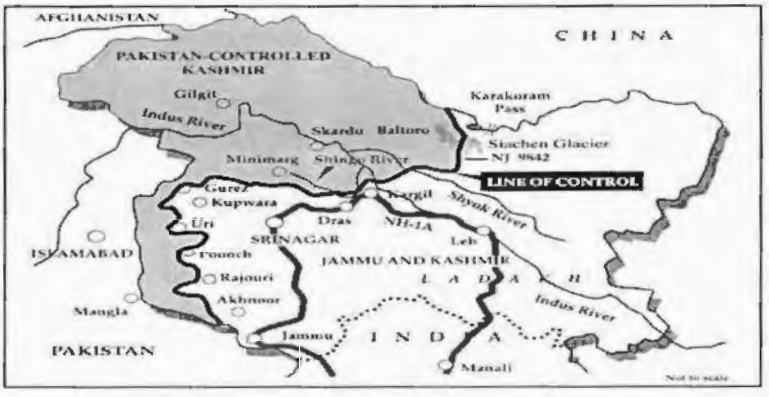
Pakistan started its nuclear program after nuclear test by India in 1974. Pakistan nuclear program is India-centric and predominantly security driven. In 1976, Pakistan established Kahuta Research Laboratory for the development of Uranium enrichment capabilities. In 1983, Pakistan successfully conducted 'Cold Test' of its nuclear bomb. Till 1986, Pakistan crossed the threshold of weapons grade Uranium production and continued advancing its Uranium enrichment programme which is essential ingredient in making a nuclear weapon (Salik, 2009). Pakistan developed its first nuclear weapon in 1987 but kept it in a secret. NSG and MTCR were created after Indian nuclear test in 1974 which restricted the exchange of nuclear materials which put impediments in Pakistan nuclear journey. In 1986, Chinese Minister for science and technology and Pakistan's Foreign Minister signed an agreement in Beijing for peaceful nuclear cooperation (Ramana, 2011).

China subsequently helped Pakistan's government in the construction of Chashma I and Chashma II civil nuclear power generation facilities with the capacity of 300 MW (Jabeen, 2012). Beijing supplied heavy water Khusab reactor in 1990's to Islamabad, which played significant role in production of Plutonium (Akhtar, 2013). On 28th May 1998, Pakistan conducted five underground nuclear tests in the Ras-Koh mountain range in the Chagai district of Baluchistan with the yield of 40 Kilotons. Pakistan conducted another test on 30th May 1998 with a reported yield of 12 Kilotons (Rizvi, 2001).

3.7 Kargil Conflict (1999)

Kargil crisis was the first serious conflict of the post nuclearization era in South Asian region between India and Pakistan. Kargil being a part of Azad Kashmir was under the control of Pakistan till 1971 but under Simla agreement it went under New Delhi control. At that time both states agreed on a status quo of Jammu and Kashmir, in which Kargil went under Indian control. On 7th October 1998, General Prevaiz Mushraf took charge as a Chief of Army Staff (COAS) and made a fresh planning on Kargil issue. On 8th May 1999, former COAS General Prevaiz Mushraf launched Kargil Operation named as al-Badar when Pakistani forces and Kashmiri freedom fighters were taking positions at different ridges of Kargil. On 27th May 1999, a Mig-27 was attacked by Kashmiri freedom fighters in Batalik sector and was shot down (Farooque, 2006).

3.1 Figure Line of Control and Kargil Sector



Source: Lambeth, B. (2012).The Indian Air Force in the Kargil war. *Carnegie Endowment for International Peace*. Received from http://carnegieendowment.org/files/kargil.pdf

Indian army launched Operation Vijay to mobilize Indian troops to Kargil sector and regain its lost territory from Kashmiri freedom fighters. India was successfully gain the support of international community which put pressure on Pakistan to withdraw its forces from Kargil sector. At the end of the May and early June 1999 a serious military conflict was started including artillery clashes, infantry attack and air battles by India against Pakistan (Cheema & Cohen, 2007). By the late June 1999, the situation was deteriorating rapidly and danger of full scale conflict was become a real possibility. Between 26th May to 30th June leaders of both side exchanged direct or indirect nuclear threats during Kargil war in 1999 (Sood & Sawhney, 2003). Consequently, former President of US Bill Clinton played significant diplomatic role in the resolution of Kargil. On 4th July 1999, US President successfully agreed Pakistani former Prime Minister Nawaz Sharif to back off forces from Kargil sector. The conflict over Kargil between India and Pakistan was resolved on 14th July through the active efforts of USA. The employment and signaling of nuclear deterrence played significant role in thwarting the Kargil crisis from escalation and its final management (Farooque, 2006).

3.8 Border Standoff 2001-2002

After terrorists attacked on Indian Parliament in December 2001, New Delhi started operation Parakram. In this operation, New Delhi mobilized its armed forces and cut off all channels of communication with Islamabad. In operation Parakram India deployed 80,000 troops across Line of Control (LoC) and Thar

Desert in Rajasthan (Sood & Sawhney, 2003). In response, Pakistan mobilized its forces across the border. The mobilized forces of both sides were placed on high alert and ready for conflict for many months. In June 2002, former Prime Minister Vajpayee and former General S. Padmanabhan prepared for a decisive conventional attack on Pakistan to seize Sindh Province and effectively cut Pakistan into two parts. Former Director General of ISI Pakistan Lt. General Javed Ashraf Qazi warning that if India attacked on Pakistan by using conventional means than Pakistan would respond by using nuclear option (Narang, 2010).

Former Pakistan's Chief of Army Staff General Pervez Musharraf claimed that he has conveyed to former Indian Prime Minister Vajpayee that if New Delhi troops crossed the International border even an inch then Pakistan would respond through its nuclear weapons. After these statements by Pakistan and its open nuclear posture effectively shaped India's decision to not launch a conventional attack on Pakistan. Until October 2002, troops of both countries remained deployed at border. Once again US played significant role as a mediator and border standoff was officially called off after ten months. Strategic analyst and military officials of India demonstrate operation Parakram as an ill-conceived mobilization that finished without achieving its minimum objectives (Ghani, 2012).

The limitations of Indian Military Doctrine Sundarji were exposed in Operation Parakram. India started Operation Parakram after militants attacked on Indian Parliament. From the time, the mobilization order was given for Operation

Parakram (2001-2002) but Indian army failed to deploy their forces within 72-96 hours. Indian forces took more than almost three weeks in deployment. In these weeks, Pakistan was able to counter mobilize their troops across the border and prepare them for any aggressive action by India. Most importantly at the same time international community intervened and pressurized both the states to de-escalate the tension. United States played a significant role for the resolution of conflict. Once again nuclear weapons used as a deterrent tool against India. Frustrated by this experience and failure of Sundarji Doctrine compelled the strategic community of India to rethink and revise their military doctrine (Ali, 2015). In 2004, India came up with a new concept called the Cold Start Doctrine, according to which limited conventional war would be possible under nuclear umbrella (Khattak, 2011).

3.9 Mumbai Crisis (2008)

The Mumbai terror attacks stunned New Delhi and the whole world. The Mumbai crisis was a series of terrorist attacks on 26 November 2008 in different parts of Mumbai city. Mumbai terrorist attacks were carried out by ten terrorist and one was captured alive. His name was Ajmal Amir Kasab. After interrogation, he revealed that he was trained Laskhar-e Taiba. In response to Mumbai attack, India decided to launch limited war on Pakistan, which was to include air strikes on Lashker-e-Taiba camps in Azad Kashmir and Punjab (Shahzad, 2010). The situation was beginning to unravel as a fourth war between India and Pakistan. But Pakistan nuclear weapons deterred India to launch any hostile action against

Pakistan. India and Pakistan was started a composite dialogue process in 2004 but has been suspended after 2008 Mumbai incident. After Mumbai attack, relations between India and Pakistan was further strained (Ghosh, 2009).

Hence, it can be concluded that after acquisition of nuclear weapons by Pakistan and India, historical rivalry between two states transformed from conventional to non conventional phase. According to Peter Lavoy, the presence of nuclear weapons has not altered the desire of India and Pakistan to win a crises but it has strengthen their interest in avoiding war (Lavoy, 2003). After acquisition of nuclear weapons, there had been no full military conflict between two states and chances of conventional conflict are decreased.

CHAPTER 4

INDIAN COLD START DOCTRINE AND PAKISTAN SECURITY CONCERNS

Cold Start Doctrine was the result of the failure of Indian military operation Vijay and Operation Parakram. India launched Operation Parakram after militants attack on Parliament, believing Pakistani involvement in it which urged them to respond through military means but India failed to deploy its force in 72 to 96 hours which gives time to Pakistan to counter mobilize their troops across the border and prepare them for any aggressive action by India. During Border Standoff, international community intervened and pressurized both the states to de-escalate the tension (Hassan, 2009). As a lesson from the above mention crisis's Indian army revised its military doctrine with Cold Start Doctrine on 28 April 2004. The main objective of Cold Start Doctrine was to rapidly deploy armed forces against Pakistan, reduce the role of political leadership, pre-emptive diplomatic intervention of international community and thrash the military counter-mobilization capability of Pakistan (Ladwing, 2008).

4.1 Indian Military Cold Start Doctrine

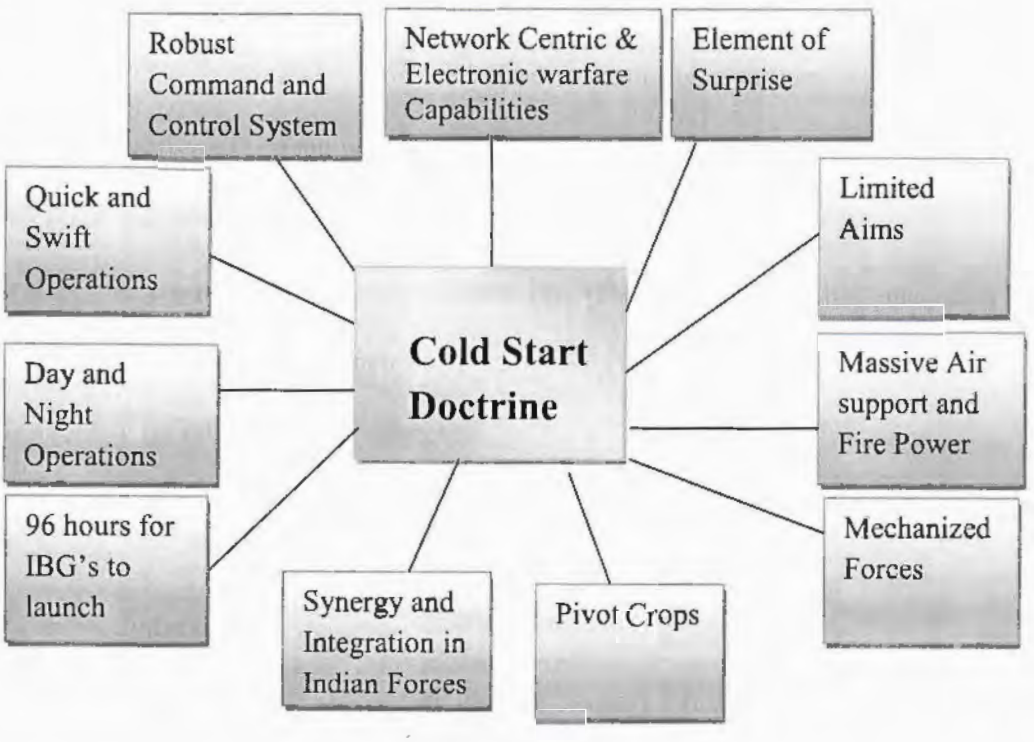
To correct the perceived deficiencies in Indian military doctrine (Sundarji), Indian strategist came up with a new concept on April 2004, which was labeled as

'Cold Start 'or 'Proactive Operations' to fight short duration of conventional war with Pakistan under the nuclear shadow. Cold Start Doctrine involves restructuring of its defensive formations of army stationed near to the international borders, expansion of their offensive capability with higher mobility, make preliminary gains by exploiting the element of surprise and more focus on combined operations of air-land forces (Salik, 2009). Military offensive power of India is consisted of three strike corps, an armored division each with mechanized infantry and extensive artillery support. Holding corps operate as defensive corps stationed closed to the international border and primarily meant for enemy penetrations. Indian Cold Start Doctrine would require reorganization of the Indian military offensive power into eight small sized battle groups called Integrated Battle Groups (IBGs), comprising of major elements of military with close support of the air force and if need arises expanded to include naval forces (Kapila, 2004).

In military doctrine, main role played by the air forces through which India gain air superiority over Pakistan air forces (PAF) and to provide edge to ground forces for their military operation against Pakistan. Primary element of CSD is to create integration and cooperation between Indian forces. Joint operation of Indian three forces is the essential element of CSD. Cold Start Doctrine is based on the idea of pre-emptive strike and rapid deployment of integrated battle groups by exploiting the element of surprise (Ladwing, 2009). Main objective of Cold Start is to undermine Pakistan's conventional capability and occupy its small territory which could be used as a significant tool in post conflict negotiation. Most

importantly, CSD would launch operation at eight different fronts with eight integrated battle groups to put Pakistan's army into quandary. Main objective of CSD is to launch limited action and destroy Pakistan's military power. The political objective of limited war doctrine is to bring war into the enemy's territory under the nuclear shadow before the international community intervene to de escalate the conflict and enforce a cease-fire (Hassan, 2009). After analyzing Indian military Cold Start Doctrine, it can easily be assumed that CSD would compromise on following core elements:

Figure 4.1 Elements of Cold Start Doctrine



Source: Khattak, M. (March 2011). Indian Military's Cold Start Doctrine: Capabilities, Limitations and Possible Response from Pakistan. *South Asian Strategic Stability Institute*.

4.2 Concept of Cold Start Doctrine

Indian military Cold Start Doctrine is indigenous attempt to design a military solution to counter security challenges originate from Pakistan. New Delhi formulated offensive doctrine in order to face growing terrorist threats from Pakistan. Officially till 2016, it was an Indian proactive strategy designed to counter offensive threats in proxy operation at sub conventional level. After securing power as Indian Army Chief, General Bipin acknowledged the existence of Cold Start. In an interview to India Today newspaper on 6th January 2017, he said that the Cold Start doctrine exists for conventional military operations. Indian operational frame of CSD is the rapid deployment of strike corps to launch swift military operation against Pakistan. The key objective of this limited war strategy is to initiate a conventional attack on Pakistan from multiple fronts and rapidly achieve military objectives before international community intervenes for the resolution of conflict. Objective of Proactive military strategy is to inflict significant harm on Pakistan army while keeping Pakistan bound not to escalate the conflict to the nuclear level (Ladwing, 2009).

This military doctrine is not a strategy to occupy Pakistan but instead it is a rapid, time and distance bound military operation into Islamabad. The Indian military forces would try to seek benefit of surprise attack at strategic and operational level to reach the decisive edge before international community intervenes. Main task of IBG's would be to gain shallow territorial gain by

invading 50 to 80 km deep inside Pakistan, primarily by contiguous cities e.g. Lahore and Sialkot, that could be used as a bargaining tool (Hassan, 2009).

4.3 Importance of CSD for Indian Military

The Indian military doctrine Cold Start is assumed to be new organizational setup for Indian forces that would help in its short time employment program. This new strategy is a major shift from New Delhi's traditional warfare strategy to new offensive warfare strategy. By comparing Cold Start with Sundarji doctrine, it can be easily found the importance of Cold Start for Indian military in two ways: Firstly, old military doctrine mainly focused on Indian army as consisted of seven holding corps which was defensively deployed along the international border and Line of Control (LoC) to restrain Pakistan incursion in Indian soil. On the other hand CSD have offensive capabilities and consisted of three strike corps. These three corps stationed inside New Delhi central location with their ability to start devastating counter blow into Pakistani territory especially through Rajasthan desert (Ladwing, 2008).

The existing three strike corps transformed into eight small strike groups known as Integrated Battle Groups (IBGs) under Cold Start Strategy. In order to reduce the deployment time, these integrated battle groups are deployed near international border with Pakistan to launch swift action from eight different locations. Each integrated battle group consisted on armored units, artillery support and mechanized infantry and also have air support which provide fire power

against defensively positioned armed forces of Pakistan along the Indian border. India's swift and surprise attack over Pakistan would reduce reaction time by Islamabad (Ashraf, 2004).

Secondly, CSD is important for Indian army as compared to Sundarji doctrine because Indian would be able to launch conventional offence without crossing nuclear brink. According to Sundarji military doctrine the offensive strike objective was 'Sledge hammer blows' against Pakistan rather than achieving limited objectives of 'shallow territorial gains' or causing huge damage to Pakistani armed forces. While in CSD the integrated battle groups are designed to cause limited damage, panicking Pakistani command and control and consequently freezing Pakistan's nuclear strike back capability. The three corps designed under Sundarji doctrine would be reconstructed with added armored and artillery to their basic defensive structure. This offensive capability would allow the defensive corps to play role of 'Pivot corps' which initiated strikes independently thus paving way for IBGs to start an operation (Rhodes, 2010).

4.4 Operationalization of Cold Start Doctrine

During and after formulation of Indian limited conventional war Doctrine in 2004, Indian forces had conducted major cohesive military exercises in order to test Cold Start operational capability. These military exercises were significant for the development and expansion of military forces. Military exercises facilitate to bring advancement, development and flexibility in Indian armed forces war

fighting capabilities. It also helped India to test its new military doctrine and strategies. New Delhi has carried out twelve major military exercises with the objective to test military capabilities for the operationalization of Cold Start Doctrine which are as following:

4.4.1 Exercise Divya Astra (2004)

Divya Astra (Divine Weapon) military exercise was conducted in March 2004 at Rajasthan about 70 km far from Pakistani border. This exercise was initiated to test the Indian armed forces capabilities of launching pre-emptive strike operations. Indian military forces used Long Range Reconnaissance and Observation System (LORROS) which has brought from Israel. LORROS is designed for medium and long range surveillance. It has the ability to identify the targets at long range. In Divya Astra exercise, Indian armed forces practiced both capabilities of surveillance and neutralization (Mohsan, 2004).

4.4.2 Exercise Vajra Shakti (2005)

Vajra Shakti (Thunder Power) exercise was conducted one year after Divya Astra exercise in 2005 at Jalandhar. In this ten days exercise schedule, 25,000 armed forces participated. In this exercise New Delhi brought flexibility in the operational concept of holding corps. First time, holding corps were assigned new role of 'Pivot corps' and new responsibilities of offensive limited military operation if required in the battlefield (Khattak, 2011). Vajra Shakti exercise was significant in manner that along with the defensive role, holding corps practices

offensive actions from Western front. This strategic change in force structure will facilitate military operations under Cold Start Doctrine. These Pivot Corps would be used to launch an offensive strike to engage the enemy in one area which will facilitate strike corps to open a new front in another place. This tactical change will give advantage to Indian forces with the element of surprise (Mohan, 2005).

4.4.3 Exercise Desert Strike (2005)

Indian army conducted another military exercise named as 'Desert strike' at Rajasthan Thar desert in November 2005 for fourteen days. This exercise started with the objective to test war fighting capabilities of armed forces in desert areas. In this exercise 20,000 military personnel participated. Main objective of this exercise was to improve joint operations consistency with air force and enhance capabilities of Indian armed forces to launch proactive military operations under CSD. The major focus of desert strike was to test the military capability to overcome enemy attack by causing psychological setbacks through pre-emptive distraction and dislocation (Ladwing, 2008). Without coordination between military and air forces, it would be difficult for New Delhi to launch offensive operations. Desert strike exercise was another step towards operationalization of Indian offensive military doctrine Cold Start (Khattak, 2011).

4.4.4 Exercise Sanghe Shakti (2006)

Indian armed forces conducted Sanghe Shakti exercise in May 2006 at Sidhwans Khas in the plains of Punjab to further evaluate offensive military

doctrine Cold Start at corps level. In this exercise 20,000 personnel were selected to conduct operations in Cholistan. The objective predicted in this exercise was degrading the counter offensive capabilities of the enemy and draw out enemy reserves in the general areas. In Sanghe Shakti exercise, Indian armed forces practice war fighting capabilities in night time. This exercise further enhances Indian military capabilities to start limited offensive operation without time and weather barrier (Roomi, 2010).

4.4.5 Exercise Ashwamedh (2007)

Another military exercise was started in May 2007 named as Ashwamedh. This exercise was conducted in a 130 km corridor between Suratgarh in Rajasthan and Bhatinda in Punjab. In this exercise, 25,000 military personnel from Strike Corps I which was supported by main battle tanks, infantry fighting vehicles, heavy artillery and army's attack helicopter were participated. The main objective of this exercise was to practice its air force abilities along with Special Forces to launch surgical strikes inside Islamabad. Moreover, New Delhi practiced its capacity to fight limited conventional war under nuclear shadow. Ashwamedh military exercise gave confidence to Indian armed forces to start offensive attacks without fearing any nuclear retaliatory response (Ladwing, 2008).

4.4.6 Exercise Shatrunash (2007)

Indian military conducted another exercise in May 2007 known as Shatrunash military exercise at Ludhiana Punjab. In this exercise, Indian armed forces tested

the battle readiness of its strike formations and coordination between air and ground forces. India's new weaponry system and surveillance equipments were also examined by Indian armed force for quick time wars. In Shatrunash military exercise, almost 15,000 troops were participated. Shatrunash exercise further improved Indian armed forces operational capacity to launch swift and quick limited conflict (Rajagopalan & Mishra, 2014).

4.4.7 Exercise Brazen Chariots (2008)

This exercise was conducted in 2008 in Thar Desert and almost 37,000 troops took part in it. Main objective of this exercise was to show flexibility and assortment of Indian air forces in future conflicts. In Brazen Chariots exercise, armed forces displayed air defence missiles, Heli drop, firepower of T-90 main battle tanks (MBT), fire of multi barrel launcher batteries and special heliborne operations. Indian military practiced quick mobilization and operations behind the enemy lines. In this exercise, India tested its potentials to carry out operations by its mechanized forces along with close support of air forces. Brazen Chariots exercise helped Indian military to enhance its offensive capability to launch operations under Indian military doctrine Cold Start (Singh, 2008).

4.4.8 Exercise Hind Shakti (2009)

In order to test Indian military capabilities, military exercise Hind Shakti was conducted in April 2009 at Punjab. The then Indian Army Chief General Deepak Kapoor said that this exercise was another step in armed forces continued

venture to operationalise its offensive Cold Start Doctrine (CSD). Indian military Ambala based II-corps took part in Hind Shakti exercise and practiced rapid penetration into enemy territory with assistance of IAF. Strike corps also tested the ability of armed forces to carry out and maintain operational maneuvers against intensive electronic and information warfare. Main task of this exercise was to use satellite imagery, unmanned aerial vehicles (UAVs), weapon locating radars (WLRs) helicopter borne surveillance systems and ground based surveillance resources. This exercise was significant for New Delhi because armed forces used advance technologies which will enable India to operationalise its military doctrine Cold Start based operations with more accuracy (Khattak, 2011).

4.4.9 Exercise Vayu Shakti (2010)

Indian military carried out Vayu Shakti exercise in February 2010 at Pokhran ranges in Rajasthan. In this exercise, Indian air force (IAF) tested strike capabilities during day and night operations. In order to display coordination among the forces, Army's Special Forces and Navy Marine Commandos also participated in this exercise. This exercise had effectively proved the Indian ability to launch joint operations. In this exercise, Indian air forces practiced its fire power and its capacity to work with ground forces in future limited conflicts. Additionally, Swift and quick mobilization capability of Indian forces for CSD based incursion was tested in this exercise (Roomi, 2010).

4.4.10 Exercise Yodha Shakti (2010)

Yodha Shakti military exercise was conducted in May 2010 at Rajasthan desert in order to test capabilities of Indian forces to impose maximum damage on enemy lines within a short period of time (Dutta, 2010). It was another step towards operationalization of military Cold Start Doctrine. Night vision operation, co-ordination between air and land forces was also tested in this exercise. All these capabilities are significant elements of Indian military Cold Start Doctrine. Approximately, 12,000 to 14,000 personnel's were pulled out from the Mathura based corps I, the armoured formation at Patiala, Jhansi and Hissar. The Indian air forces displayed its capacity to use the aerial routes to send supplies to an armoured division deep inside enemy territory (Banerjee, 2010).

4.4.11 Exercise Vijayee Bhava (2011)

India conducted a joint exercise of army and air force in northern Rajasthan near Suratgarh and Bikaner, code named 'Vijayee Bhava'. In this exercise, 50,000 soldiers took part in it. This exercise was started with the main objective to cut down the mobilization time of the military forces, which took 27 days to mobilize during Operation Parakram. The Indian officials confirmed that this exercise was successfully achieved desire outcome (Bhatia, 2011).

4.4.12 Exercise Sudarshan Shakti (2011)

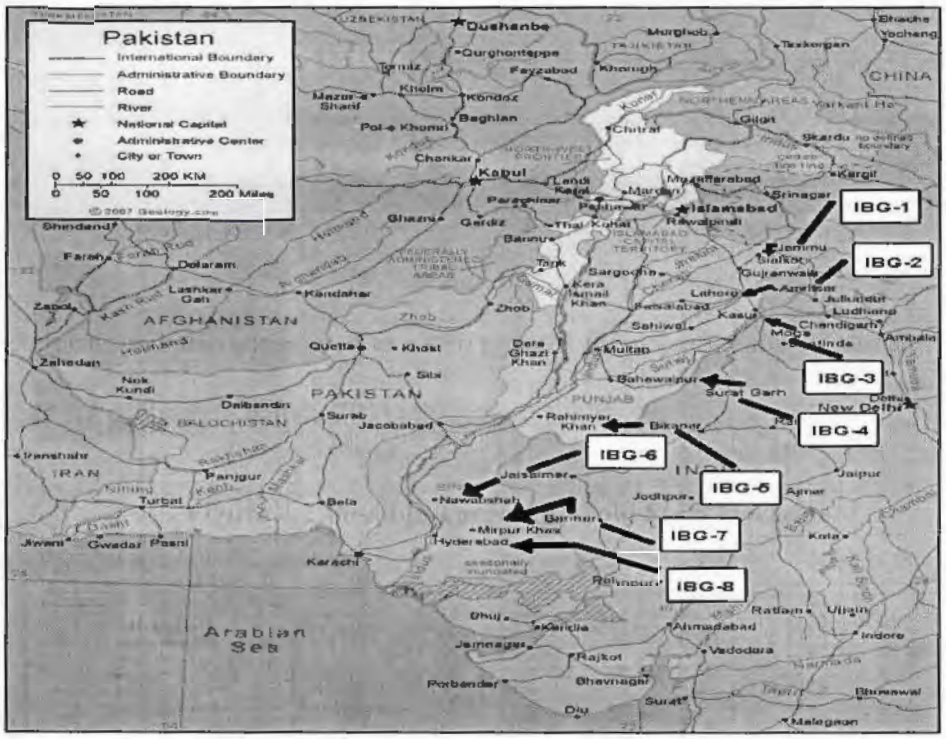
This exercise was conducted in November 2011 with the purpose to strengthen the war fighting capabilities of army Southern Command 21 Corps

(Strike Corps) and South Western Air Command (SWAC). Exercise was spread over the 'huge geographical area' in the deserts of Jaisalmer, Pachparda, Barmer and Pokhran. All these areas are close to the Pakistani border. In this exercise almost 50,000 soldiers along with 500 MBT's including T-90'S, T-72s and indigenously developed Arjun, 120 artillery guns, rocket aircrafts like Jaguars, Su-30 MKIs, Mig-27's, Mig-21, Airborne Early Warning and Control System (AWACS), weapon locating and battlefield surveillance radars, attack helicopters including the MI-35 took part in it. The Indian military has also utilized the medium lift transport helicopters and Army Aviation Corps for logistical transport operations (Kattakayam, 2011).

This exercise was initiated to adopt capability based approach and the absorption of advanced technology like advance surveillance systems, precision munitions, space and network centricity. The basic aim of this exercise was to practice swift military operations along with the synergy and integration with the Indian Air Force. India army also carried out network centric and warfare capabilities in Sudarshan Shakti exercise. An Indian Naval component was also part of this exercise. Airborne operations with Special Forces, pivot corps, para-dropped, air fire power and Strike corps were also part of this exercise. All these above mentioned elements are necessary for the offensive, rapid and quick operations that are a basic need of Indian offensive military doctrine based operations. This exercise was the biggest exercise as compare with the previous

exercises and also considered to a step towards the operationalization of the Indian military doctrine (Khattak, 2011).

Figure 4.2 Possible Targets of Cold Start Doctrine



Source: Khattak, M. (March 2011). Indian Military's Cold Start Doctrine: Capabilities, Limitations and Possible Response from Pakistan. *South Asian Strategic Stability Institute.*

The figure 4.2 demonstrates the Pakistani cities that would come at stake and possible routes of deployment of Integrated Battle Groups, in case of Cold Start Doctrine operationalise by Indian army. According to the figure above IBG-I may commence its operation from Jammu to carry out attack on Sialkot city and its nearby areas. IBG-II may be deployed at Amritsar to target Lahore city of Pakistan. Probably IBG-III can be deployed at Moga near Chandigarh to launch an

offence on Kasur area of Pakistan. Likely India may deploy of IBG-IV at Suratgarh to hit Bahawalpur or its contiguous areas. India may position IBG-V at Bikaner to strike on Rahim Yar Khan or its adjacent areas. IBG-VI may carry out its attack from Jaisalmer to launch operations against Sindh province of Pakistan. Integrated Battle Group VII may deploy at Barmer to attack on Mir Pur Khas or its nearby areas and IBG-VIII can start its attack from Palanpur to target Hyderabad or its contiguous areas. Possible route which is mentioned above seem to be geographically appropriate for the implementation of CSD because of plains and deserts territory support the tank warfare.

Indian military doctrine transformation from Sundarji to Cold Start remains Pakistan specific. Indian strategist believes that Indian military could launch a limited conventional war with Pakistan without allowing the crisis to escalate to the nuclear threshold. According to the then Chief of Army Staff General V.P. Malik said that space exists between limited/ low intensity conflict and a nuclear umbrella within which a limited military conflict can be possible. The main concern about any limited conventional conflict strategy in South Asian region is that clash begun with limited purpose but escalate into a much bigger conflagration. Possible target areas of Cold Start are important communication lines and cities of Pakistan; if CSD operationalise than limited conflict will not remain limited (Ladwing, 2008).

Table: 4.1. (Annual Indian Defence Budget (2004-2016) in Rs. Crore)

Years	Budget	Growth of Defence Budget (%)
2004-2005	77, 000	17.92
2005-2006	83, 000	8
2006-2007	86, 000	7.23
2007-2008	96, 000	11.63
2008-2009	114223.28	10
2009-2010	141781.08	34.19
2010-2011	154116.71	3.98
2011-2012	170936.81	11.59
2012-2013	193407.2	17.63
2013-2014	203672.12	5.3
2014-2015	224000.0	12
2015-2016	246727.0	7.74
2016-2017	249099.0	0.96
2017-2018	262389. 8	5.34

Source: Military Budget. *Global Security Organization*. Retrieved from http://www.globalsecurity.org/military/world/india/budget.htm. Retrieved on 4th July, 2017.

Table 4.1 shows that India defence allocation for the FY 2004-05 was increase 17.92 percent over the previous year allocation of Rs. 65, 300 Crore. The defence budget for FY 2005-06 was 8 percent higher than the previous year defence budget. India allocated Rs. 86,000 Crore for the FY 2006-07 which was 7.23 percent higher than the previous defence budget. The defence budget for FY 2007-08 was 11.63 percent increase over the previous defence budget. For the Fiscal year 2008-09, Indian defence allocation increased by 10 percent over the previous year's allocation of Rs. 96,000 Crore. In fiscal year 2009-10, Indian defence budget increased 34.19 percent as compare to the previous budget of FY 2008-09 and in 2010-11 defence budget of India was 3.98 percent higher than the

previous budget. In FY 2011-12 India's budget was increase 11.59 percent. India allocated Rs. 193407.2 Crore for the defence budget of FY 2012-13 which represent a growth of 17.63 percent over the previous defence budget. The defence budget for fiscal year 2013-14 was 5.3 percent higher than the previous year defence budget. For the FY 2014-15, Indian defence allocation increased by 12 percent as compare to the previous defence budget. India allocated Rs. 246727.0 Crore for the defence budget of FY 2015-16, which shows 7.74 percent growth as compare to the previous budget. Indian defence budget of FY 2016-17 was 249099.0 which was only 0.96 percent higher than the previous budget. India allocated Rs, 262389. 8 Crore for the fiscal year of 2017-18, this is 5.34 percent higher than the previous defence budget.

4.5.1 Indian Military Modernization

It is necessary for Indian military to acquire advanced fighters jets along with latest main battle tanks because Cold Start doctrine based operations would require mechanized armour and advanced fighter jets to carry out rapid and timely operations with lightening speed. India has added 230 Sukhoi-30 MKI fighters in its air force and almost 800 T-90 tanks from Russia. India also added A-50/Phalcon Airborne Early Warning (AEW) system from Israel and Russia (Nekrasove, 2017).

New Delhi would be able to have 272 SU-30 fighter jets in Indian air force and 1000 T-90 tanks by 2020. Currently, Indian air force operates three Israeli

Phalcon airborne warning and control system (AWACS) mounted on Moscow IL-76 heavy lift planes. This system has the capability to carry out surveillance at about 400 km under all situations. But the existing numbers of AWACS are not enough to cover the eastern and western sectors during offensive operations (Khattak, 2011). For the swift day and night operations, the offensive strikes corps will need active support by advanced C4I (Command, Control, Communications, Computers and Intelligence) system (Kapila, 2005). Space satellites are essential for C4I system. In April 2009, India successfully launched its first all weather Israeli spy satellite named as RISAT-II that has day and night viewing capabilities (Lele, 2012).

India Space Research Organization (ISRO) has developed first radar satellite named as RISTA-I on 26^{ih} Aril 2012. Both the satellites RISAT I and II have the capability to keep watch over Pakistan even during bad weather and give India an edge in the space. These radar satellites are relevant for the purpose of reconnaissance, surveillance and intelligence. These radar satellites further enhance Indian capabilities to launch swift and rapid penetration under Cold Start Doctrine (Raj, 2012). In order to overcome the technological shortfall in armed forces, India added many new technically advanced systems to its arsenals. Indian army has several Battlefield Surveillance Radars (BFSR's). The longest ranged BFSR in the Indian army inventory is the X-band PIT 530 BFSR-MR which has the capability to detect a group of moving people at 18 km, low flying helicopters at 25 km, 155 mm artillery blast at 15 km and moving vehicles at 40 km. Presently

BFSR are deployed with Indian army's mechanized infantry units. Indian army employed BFSR in the border areas with Pakistan for surveillance and prevention of infiltration (Krishnan, 2002).

Israel and India are involved in close cooperation in upgrading Russian-supplied Mig-21 Bison aircraft and T-72 tanks to make them capable of conducting night operations (Pant, 2004). For the modernization of armed force, India needs to replace outdated T-72 tanks with T-90 main battle tanks. In order to upgrade army, India is in negotiation with Russia for buying upgraded version of powerful T-90 tanks. The acquisition of T-90 tanks would not add a potent weapon in the hand of Indian army but would also send a strong warning to Pakistan. The New T-90 tank will act as a force multiplier when it comes to war in the planes against Islamabad. It also has a night fighting capability which is sorely needed for the operationalization of Cold Start Doctrine (Jain, 2016).

The Indian Air Force has a fleet of Harpy Unmanned Air Vehicles (UAVs), used for neutralizing opponents radars. India acquired Harpy UAVs from Israel but these are not equipped with missiles. In worst case situation, New Delhi neutralizes Islamabad's radar system then it would be difficult for Pakistan to defend its borders from Indian surprise air strikes (Pant, 2004). Additionally, New Delhi has already inducted Israeli Green Pine Fire control radars and lethal drone in its military. Lethal drones are designed to take out high value targets such as missile sites, senior opponent personnel and radars. Such drones can be used against suspected militants in Pakistan, adversary high military command or

training camps to gain maximum advantage before initiating offensive operations (Khattak, 2011). The Indian Air Force also introduced its first indigenously developed airborne early warning and control (AEW&C) system in February 2017 named as Netra. The Netra AEW&C has a range of around 200 km and developed by the Defence Research and Development Organization. It will further enhance Indian air force capabilities to launch offensive operations (Singh, 2017).

India indigenously developed Dhanush a 155 mm gun, which has a strike range of 38 km is an improved version of imported Bofors gun. Indian army placed an initial order of 114 guns in order to enhance its firepower out which six guns are delivered to Indian army. If the guns prove its mettle then Indian army would place an order of 414 Dhanush guns (Arya, 2017). Indian Defence Research and Development Organization in collaboration with private firms built the Advanced Towed Artillery Gun System (ATAGS), a 155 mm, 52 caliber towed artillery gun. ATAGS can detect 150 targets simultaneously. The ATAGS might be commissioned into Indian army by 2022. After the induction of these guns in military, India will be able to launch swift attack on Pakistan (Gady, 2016).

India indigenously developed weapon locating radar named as Swati. It has a range of 50 km, which brings all artillery guns currently in service worldwide under coverage. It will provide accurate information about the location of enemy weapons. Four weapon locating radar systems are presently deployed along the LoC for trails. According to the Chief of Army Staff General Bipin Rawat 'Swati is being used extensively along the Line of Control (LoC) and army has sought 30

WLR's. He further said that modernization of Indian army would move at a faster pace. According to the Indian defence officials that weapon locating radar Swati played a significant role in suppressing Pakistani fire capability (Peri, 2017).

India signed a deal with Israel for the 10 Heron TP-armed drones at a cost of $400 million in September 2015 which are now ready to be delivered to India once a final payment is completed. It is the most advanced UAVs with 40 hour endurance, payload of 1,000 kg and maximum takeoff weight of 5,300 kg. Heron TP armed drones can be used for reconnaissance and combat roles. They can be used to carry air to ground missiles to take out hostile targets. In IAF almost 180 Israeli made. These UAVs are used for surveillance and intelligence gathering. A fleet of IAI produced Harpy UAVs which carry a high explosive warhead and self destructs to take out targets such as radar stations. After getting Heron TP armed drones, India will be able to carry out cross border strikes (Pubby, 2017).

India signed a $3 billion deal with US Company Boeing for the transfer of 22 Apache attack helicopter and 15 Chinook heavy lift helicopters. Apache helicopter is the most advanced multi role heavy attack helicopter in the world. The Apache equipped with laser and infrared systems for all weather day and night operations. This helicopter will be the first pure attack helicopter in New Delhi's possession. The Chinook airlift helicopter can carry 9.6 tons of cargo, including heavy machinery, light armoured vehicles, and artillery guns. It is suitable for mountain operations. The long pending acquisition of Chinook airlift helicopter will not only enhance Indian air force's heavy lift capability for military purposes but a very

important addition for the construction of strategic roads and infrastructure projects on the border. As the modernization efforts of Indian armed forces progresses with the acquisition of new platforms and up gradation of existing ones, a major focus is on ensuring operational readiness, which is necessary for launching offensive operations (Pubby, 2015).

In order to modernize armed force, India and Russia have been in talks for over a year for the purchase S-400 Triumf long range air defence missile system. The contract has not yet been signed between two states. The S-400 anti aircraft will be a game changer in South Asian region. It has the capability to destroy incoming hostile missiles, aircraft and drones at range of up to 400 km. New Delhi is steadily trying to plug the holes in its airspace surveillance and defence network with induction of advanced S-400 anti aircraft missiles (Pandit, 2015). India has planned to modernize its infantry with F-INSAS system. F-INSAS stands for Future Infantry Solider as a System. F-INSAS has been launched to equip Indian infantry with modernized weaponry, smart electronic displays, sensors for night vision, lightweight energy absorbing protection, communication network and instant access to information on the battlefield, which will able them to perform function more efficiently and effectively (Luthra & Patankar, 2007).

The level of funds New Delhi is allocating for the modernization of military capabilities reveals that Indian military is on route to achieve the potential to initiate Cold Start based offensive military strikes against Pakistan. Induction of sophisticated aircrafts and airborne early warning system will further boost its air

mobility, reconnaissance, firepower and surveillance capabilities. Such capabilities are necessary for the swift and quick operations as envision by the Indian offensive military doctrine. India also acquired Electronic Warfare system and unmanned aerial vehicles (UAVs), which will enhance its capabilities for reconnaissance, surveillance, information and coordination between armed forces which is important for the implementation of Cold Start Doctrine. Full implementation of Cold Start Doctrine need modernized army, air force and sophisticated IRS system (Intelligence, reconnaissance and surveillance). Currently India is working on the modernization of armed force but Indian Cold Start Doctrine is still in experimental phase. For the operationalization of Cold Start Doctrine, India needs high-tech armour including T-90 main battle tanks, S-400 anti missile aircraft, unmanned aerial vehicle Heron, Gunship Apache, Glibemaster Chinook C-130, F-INSAS, weapon locating radar Swati, battlefield surveillance radar, space assets (RISAT-II), for modernized artillery India need Dhanush and ATAGS guns (Pandit, 2015).

In the decade since it was proposed, Indian Military Doctrine has faced serious conceptual, logistical and political challenges. New Delhi has not enacted necessary defense procurement reforms needed to equip Cold Start Doctrine, and chronic inter service rivalries within the military render joint operations aspiration at best. Most Importantly, Cold Start does not appear to have political support required for it ever to be authorized. The Indian Government did not respond militarily to the Mumbai attacks (2008) and former Chief of Army Staff V.K.

Singh claimed in 2010 that 'there is no such thing as Cold Start' (McCausland, 2011, p.17). As stated by Masood Khattak, former Research Fellow at SASSI, that 'at this moment India is not ready for any limited, quick and swift warfare operations. They lack adequate offensive elements in their overall military capabilities. They need more time to fill the operational gaps to bring into practice their CSD' (Masood Ur Rehman Khattak, personal communication, August 26, 2017).

Most of the Indian offensive military capabilities are under process. It could be assumed that by 2025, New Delhi would be able to fulfill its deficiencies in its army and air force capabilities and would be able to launch joint military and air force operation with the support of political leadership (Khattak, 2011). Shams-Uz-Zaman an academic and research scholar said that India has made noticeable strides towards operationalising the Cold Start Doctrine which includes weapon and equipment procurements, forward leaning posture by constructing cantonment near the international border and shifting of logistical units and depots to forward locations. This implies that India is fast moving towards fully operationalising the Cold Start Doctrine by meeting all the requirements to successfully implement such a strategy. However, to what extent it can dent the Pakistani defenses or to what extend it can achieve its stated objectives remains a different proposition which remains a subject of debate and is difficult to predict with certainty (Shams-Uz-Zaman, personal communication, August 10, 2017). According to Dr. Shahid Bukhari a Senior Research Fellow at Strategic Vision Institute (SVI), that India did

not have yet enough capabilities to execute its Cold Start Doctrine. India changed its military doctrine only to threaten Pakistan not for initiation of limited conflict against Pakistan (Dr. Shahid Bukhari, personal communication, August 15, 2017).

4.6 Pakistan's Security Concerns

Despite the above mentioned difficulties in implementing Cold Start Doctrine, the prospect of limited war, combined with Indian increasing conventional force advantages, New Delhi's interest in developing ballistic missile defense capabilities and potential to achieve air superiority create serious security concerns for Pakistan. After nuclear tests in 1998, Pakistan has decided to use nuclear capability as an equalizer against New Delhi's conventional military advantage thereby preventing it from initiating any kind of aggressive action against Pakistan. But Cold Start Doctrine posed a new challenge for the credibility of Pakistan's strategic deterrent. Massive nuclear retaliation against limited Indian military incursions could be viewed as a disproportionate response. Therefore Pakistan adopted minimum credible deterrence with full spectrum, in order to restore stability at lower level of crisis. Pakistan developed short range tactical nukes in response to Indian new developments (Sultan, 2013).

CHAPTER 5

PAKISTAN'S TACTICAL NUKES: A RESPONSE TO COLD START DOCTRINE

Cold Start Doctrine posed a new challenge for the credibility of Pakistan's strategic deterrence. Massive nuclear retaliation against limited Indian military incursions could be viewed as a disproportionate response. In 2009, former Indian Army Chief General Deepak Kapoor said that the Indian army had made progress in operationalising a strategy for rapid mobilization of conventional military forces capable of mounting a decisive attack on Pakistan (Pandit, 2009). Indian large military exercises from 2004-2011 closes to the international border of Pakistan, raising security concerns in Islamabad. In response to the 2009 General Kapoor statement, former Pakistani Chief of Army Staff General Ashfaq Parvez Kayani on January 2010 said that 'proponents of conventional application of military forces in a nuclear overhang, are chartering an adventurous and dangerous path, the consequences of which could be both unintended and uncontrolled' (Khan, 2010, p.45).

General Kayani reportedly said that New Delhi's military doctrine was based on hegemonic designs, had not been taken lightly, Pakistan's conventional forces are capable of responding to the emerging challenges and protecting the borders of the country (Khattak, 2011, p. 32). Cold Start doctrine has heightened

Pakistan's threat perceptions. A number of statements at the official level indicate Islamabad's heightened threat perceptions and its response to it. The National Command Authority in January 2010 took note of destabilizing developments in the region in these words 'New Delhi continues to pursue an ambitious military program and offensive military doctrine. Massive induction of sophisticated weaponry including installation of anti ballistic missiles, nuclear arsenals and delivery systems through ongoing and new programs, assisted by some external quarters, offensive doctrines like the Cold Start Doctrine and similar accumulations in the conventional realm, tend to destabilize the regional balance' (Jalil, 2015, p. 52).

Former Chairman Joint Chief of Staff Committee General Tariq Majid in June 2010 stated that ' increasing power imbalance due to continuing build up of massive military machine, including both high technology conventional and nuclear forces, adoption of proactive military strategy are all destabilizing trends, carrying implications for Pakistan's security (Jalil, 2017, p.34). The above mentioned officials statements demonstrates the extent of Pakistan's concerns with the offensive military doctrine Cold Start and its solution to counter its destabilizing impacts (Sultan, 2013).

5.1 Pakistan's Response to Cold Start Doctrine

In order to readdress the instability introduced by Indian military Cold Start Doctrine, Pakistan has responded in two folds: conventionally and strategically. In

conventional response, Pakistan has conducted several military exercises and adopting a new concept of war fighting. In strategic response, Pakistan has developed tactical nuclear weapons with the objective to have assured deterrence.

5.1.1 Conventional Response

5.1.1.1 Military Exercises

The former Army Chief of Pakistan General Pervez Kayani in 2009 asserted that 'Pakistan's army cannot be caught unaware and is capable of responding to the challenge of Indian military doctrine Cold Start, Pakistan army is fully prepared to give a 'befitting response' to any 'misadventure' from the eastern border'. Later on he also declared 2009 the 'Year of Training', ostensibly to prepare the armed force to respond to the Indian limited war doctrine in the nuclear age (Khattak, 2011, p. 31).

5.1.1.1.1 Azm-e-Nou

Pakistan conducted large military exercises named as Azm-e-Nou in order to formalize and operationalize a conventional response to Indian military doctrine. Azm-e-Nou exercises were started in 2009 and ended in 2013. These exercises were the biggest Pakistani military drills in last twenty years. In these military exercises fifty thousand troops were involved. Azm-e-Nou exercises were conducted in Punjab and Sindh province near the Indian border. These exercises were a display of military preparedness of Pakistan to tackle any conventional challenge from the eastern border in future (Tavernise, 2010). In these military

drills, Pakistan armed forces used its surveillance, reconnaissance and intelligence resources such as UAVs, early warning and aerial imageries to get transparency in the battlefield. Strategic surprise is the essential element of Indian military doctrine. The early information of the adversary movement will offset the Cold Start element of surprise and its proactive maneuvers. The prior information will also help the Pakistan army field commanders to take decisions according to the changing situation on ground and hinder Indian offense against Islamabad. According to the former Army Chief General Kayani, the purpose of the military exercises was to keep the army ready at all times and continually refine and improve the reaction time. He further said that idea behind Azm-e-Nou exercise was to analyze different hostile doctrine and their implication (Jamal, 2010). In these exercises Pakistan air force also took part in it. In June 2013, Pakistan conducted Azm-e-Nou IV exercise, to operationalise new strategies against the evolving challenges. In sum, objective of the Azm-e-Nou exercises were to assess military capabilities, tactics and explore strategies for joint military operation with other forces (Sood, 2017).

5.1.1.1.2 High Mark Exercise 2010

Pakistan Air Force exercise High Mark was conducted alongside army exercise Azm-e-Nou III in 2010. High Mark exercise was took place at the air force's tactical range in Thal. This exercise was conducted to show integration in operation between the army, air and navy in crisis situation. In High Mark exercise, Pakistan Air Force conducted combined operations with ground forces.

In this drill, PAF provided air cover to ground forces that shows the power of forces to fight in integrated battles to handle Indian offensive military doctrine based operations. Such capacity is significant to meet future challenges from Indian side. The aim of the High Mark exercise was to conduct operations in a near realistic strategic setting; integrate new inductions, giving role oriented training to combat and supportive elements of the air force. All the main and forward operating bases of PAF participated in this exercise. High Mark Exercise display Pakistan's alertness and awareness towards defense of the state (Abdullah, 2012).

Pakistan's JF-17 Thunder, F-16s, F-7 PG aircraft and helicopters were used in the demonstration of firepower skills. Force multipliers i.e. Saab-2000 Airborne Early Warning and Control (AEW & C) aircraft and air to air refueller aircraft also took part in this exercise. A special feature of exercise was the PAF ability to launch a sensor missile and hit a target from sixty kilometers away (Minhas, 2010). Midair refueling and air to land targeting through missiles and bombs were also tested. A search and relief operation, the expeditious supply of heavy apparatus using transport planes , the use of spy planes, and a land operation backed by the Pakistan Air Force. These exercises will help Pakistan to reduce the reaction time to response to any incursion. These exercises played a significant role to develop and enhance coordination between armed forces. Thus, these above mentioned exercises are a step forward to mitigate threats from Cold Start Doctrine but still need to improve the overall capabilities and harmony of the armed forces (Khattak, 2011).

5.1.1.2 Pakistan Military Modernization

In order to counter threat emerging from Cold Start Doctrine Pakistan modernize its armed force. Pakistan inducted Spada 2000 air defense system to the Pakistan Air Force. Spada 2000 has 60 Kilometer range radar and two firing section, each containing two missile launchers with six spada 2000 missiles each. The missile has an intercept range of more than 20 kilometers (Kington, 2010). This system further improved Pakistani air defence capabilities and it can counter any offensive attack. Islamabad also made Unmanned Aerial Vehicles (UAVs) for inspection and reconnaissance purpose. PAF has two UAV squads and is looking to create up to six. These UAVs can be used by Pakistan at sensitive areas near the eastern border. This ability will give Islamabad more space and time to counter Cold Start Doctrine (Shachtman, 2010). In 2009, Saab- 2000 aircraft would added into Pakistani fleets which enable the air force to intercept the taking off and landing of all aircrafts of New Delhi air bases adjacent to Islamabad, also recognize the type of aircraft, their vector, weapons system and elevation. The radar capacities and range of the system allow the operator to receive an early warning in case of pre-emptive assault from across the border (Khan & Malik, 2009).

Indian heavy military spending, attainment of sophisticated weaponry, waiver to long held non-proliferation principles and successful test of nuclear capable K-4 submarine launched Ballistic Missiles (SLBMs) from nuclear powered INS Arihant compel Pakistan to modify its nuclear policy in order to maintain

deterrence stability of the South Asia (Abbas, 2016). Pakistan also inducted F-16 C/D Block 52 aircraft which will provide PAF all weather precision attack capability. In 2009, Pakistan acquired four Chinese Airborne Warning and Control Systems. On the Naval front, Islamabad also purchased four F-22 frigates from Beijing. Pakistan signed a deal with China for the purchase of J-10 fighter aircraft and will receive it soon. J-10 fighter aircraft will further enhance Pakistan air force capabilities against offensive operations.US provided advances f-16 aircraft, Harpoon anti-ship missiles, P-3 Orion anti-submarine aircraft, TOW anti armor missile[2], sidewinder air to air missiles and 155mm howitzers to Pakistan, which could be used in future conflict with India (Aguilar, Bell, Black, Falk, Rogers & Peritz, 2011). Pakistan is in negotiation with China to purchase HQ-9 air defense missile system (Khan & Ahmad, 2015). The HQ-9 can intercept various aircraft, UAVs, air to ground missiles, helicopters, guided bombs and theater ballistic missiles at medium to long ranges. This system uses two stage missiles with thrust vector control. Missiles have a range of 125 kilometers against aircraft and 15 to 25 kilometers against cruise and ballistic missiles (Gady, 2016).

5.1.1.3 Change in Pakistan war fighting concept

Pakistan has conducted several military exercises codenamed Azm-e-Nou from 2009 to 2013 in order to formalize and operationalise a conventional response to Cold Start Doctrine. At its conclusion, Islamabad adopted a 'New Concept of War Fighting' (NCWF). This new concept of war fighting seeks to

[2]Tube-Launched, Optically tracked, Wire Guided

improve the mobilization time of troops and develop an integrated response from the combined fighting arms of the army, air and naval forces, in case of any conventional military threat (Sood, 2017). According to the Inter-Services Public Relations (ISPR), the war games (Azm-e-Nou Exercises) were meant to operationalise new strategies against the evolving threat. According to the military officials, after the implementation of the new war fighting strategy, the Pakistan army would be able to mobilize its military forces faster than India. Hence, Pakistan new war fighting concept aimed at pre-empting Indian offensive military doctrine (Yousaf, 2013).

5.1.2 Strategic Response

After nuclear weapons tests in 1998, Pakistan adopted minimum credible deterrence posture to ward off security challenges from India. This posture effectively meant that Pakistan would use its strategic nuclear weapons only when the adversary goes beyond nuclear threshold. Since 1998, there have been a number of developments which forced Islamabad to make adjustments in its nuclear doctrine and take a nuclear posture deemed more effective to maintain existing deterrence. The discriminatory Civil nuclear agreement between India and USA in 2005, favor given to New Delhi by the Nuclear Suppliers Group due to which India get an accord for nuclear fuel supply and introduction of Anti Ballistic Missiles gave New Delhi advantage over Islamabad, which also disturbed the strategic stability of the region (Abdullah, 2014). In New Delhi's calculations, Islamabad would not resort to the use of strategic nuclear arsenals in reaction to a

limited military incursion by India, thereby providing freedom to successfully engage in limited conventional operations even in a nuclearized environment. With these developments and advancements, it was becoming increasingly impossible for Islamabad to keep its original nuclear doctrine without making adjustments (Sagan, 2011).

New Delhi military expansionism, its strategic alliance with western states, strategic partnership with United State and arms procurement from different states added to the deterrence balance in India's favor which put Pakistan's minimum credible deterrence posture under pressure. Consequently, Pakistan restructures its strategic doctrine in order to counter the New Delhi conventional-cum-strategic, economic and diplomatic expertise, which otherwise is expected to make Pakistan much weaker state materially as well as psychologically (Khan, 2011). Therefore Pakistan adopted minimum credible deterrence with full spectrum deterrence capability. According to the foreign office spokesperson statement that Pakistan's nuclear policy is shaped by evolving security dynamics of the region, increasing conventional disparity, proactive military doctrines and offensive posturing by New Delhi, which obliges Pakistan to take all suitable measures to maintain full spectrum deterrence capability to safeguards national security, maintain existing deterrence stability and deter any kind of aggression from New Delhi side (Haider, October 8, 2015).

Full Spectrum deterrence effectively modify Pakistan nuclear policy, according to which Pakistan no longer waits for a nuclear attack to counter with

strategic nuclear weapons, it will deter conventional force by employing nuclear deterrence (Yousaf, September 9, 2015). According to official statements of Pakistan's National Command Authority (NCA) and Strategic Plans Division (SPD), purpose of Full Spectrum Deterrence is to plug the gap created by New Delhi conventional advantages which disturb the deterrence stability of the region. Full Spectrum is a qualitative response by Islamabad to counter the challenges created by Indian Cold Start and proactive operations. Full Spectrum Deterrence scope ranges from conventional to strategic and to the tactical levels (Sultan, December 8, 2013). For operationalization of Full Spectrum Deterrence, Pakistan developed non-strategic low yield short range battle field nuclear weapons which gives flexible options to strategist for a suitable response to Cold Start Doctrine because Pakistan could not use its strategic nuclear weapons in response to low intensity conflict and neither could afford to fight a war with conventionally superior India. This created a gap in deterrence stability of South Asia which is filled with the developments of tactical nuclear weapons (Siddique, 2016).

In view of Dr. Shahid Bukhari, Pakistan developed TNWs to deter India's conventional military superiority. It is well known that conventional asymmetry between India and Pakistan is continuously widening with the passage of time. India also allocated huge budget for its military which defiantly have ramifications for Pakistan. Pakistan cannot afford arms race with India for the purpose of conventional military parity, consequently Pakistan developed such a capabilities (TNWs) which could deter India's conventional military superiority (Dr. Shahid

Bukhari, personal communication, and August 15, 2017). Pakistan nuclear strategy of 'deterrence by denial' would convince New Delhi to refrain from attacking or to design for winning a conflict, whether conventional or non-conventional against Pakistan (Khan, 2011). According to Masood Khattak, Pakistan has declared policy of full spectrum deterrence and there is no doubt about the operationalization of tactical nukes in the real war scenario. It has been tested many times since 2011. But its major purpose is to maintain deterrence and bar India from any conventional misadventure against Pakistan (Masood Ur Rehman Khattak, personal communication, August 26, 2017). According to Pakistan narrative, tactical short hand nuclear weapons are to balance the conventional advantage of New Delhi. The policy of flexible response was first developed in 1960s by United States against USSR threat. In order to prevent Soviet overwhelming conventional advantage, the USA had introduced tactical nuclear weapons in its deterrent force structure (Joshi, 2013).

5.1.2.1 Pakistan's Non-Strategic Nuclear weapons

Non- strategic nuclear weapons (NSNWs) are also named as intermediate range, sub strategic weapons and tactical nuclear weapons (TNW). Strategic nuclear arsenals are used to deter the enemy state with the threat of heavy damage while military targets are attacked by non-strategic nuclear weapons. Low yield nuclear weapons are the part of NSNWs which are designed primarily for battlefield contingencies. According to the Sokov, TNWs refers to the short range arsenals with the range less than 500 km including land based missiles and a range

of 600 km including sea and air based weapons (Sokov, 2002). These are not universally accepted definition of non strategic nuclear weapons but the United States office of secretary of Defense defined non strategic nuclear weapons as nuclear weapons that are not part of the nuclear triad-International Ballistic Missiles (ICBMS), long range bombers and strategic nuclear submarine (Rovere, 2013).

5.1.2.2 Tactical Nuclear Weapon Nasr/Hatf-IX

Pakistan conducted first successful flight test of its TNWs Hatf-IX also known as Nasr missile on April 19, 2011 which was described by ISPR as a 'Short Range Surface to Surface Ballistic Missile'. Pakistan again successfully tested Nasr missile twice on 29th May, 2012 and 11th February, 2013. The Hatf-IX with the range of 60 km carries 'nuclear warheads of appropriate yield with high accuracy shoot and scoot attributes' (Nagappa, Vishwanarhan & Malhotra, 2013). Pakistan again tested its Short Range Ballistic Missile Nasr in 2017, July 5 with improving its range from 60 to 70 km (Panda, 2017). The carrier vehicle for the Nasr missile was AR1A/A100-E multiple launch rocket system (MLRS). The visible difference is that a two tube launcher was used for the first flight of Nasr missile, while four-tube launcher was employed for the second flight test. Multi launch rocket system is capable of carrying four ready to fire short range ballistic missiles. Nasr shoot and scoot attributes mean that the system has a capability of firing and moving away quickly to avoid counter targeting which would be contributing to the weapon's survivability. The later test of Hatf-IX claimed that it

has been specifically designed to defeat all known 'anti tactical missile systems' (Jones, May 13, 2011).

After each of the flight tests, Inter services Public Relation (ISPR) released statements which stressed on the point that 'Nasr missile has been developed to add deterrence value to Pakistan's strategic weapons development program at short range'. Pakistan short range nuclear weapon is a direct response to the evolving threats coming from Indian proactive military strategy. The speed and low apogee of the Hatf-IX missile would make it difficult to intercept by ballistic missiles defence which enhance the weapons credibility (Krepon & Thompson, 2013).

According to the Major General Muhammad Ali Durrani (Pakistan's National Security Advisor) nuclear policy of Pakistan primarily relies on deterring all forms of external threats through conventional and strategic forces. Therefore, Nasr accomplishes the objective of protecting Pakistan at tactical level (Sankaran, 2014). After the successful test of short range nuclear weapon Nasr, former Director General of Strategic Plans Division Lt. General Khalid Kidwai stated that 'this test was a very important milestone in consolidating Pakistan's strategic deterrence capability at all levels of the threat spectrum. At policy level it comes under the strategy of FSD. He added that, 'the Nasr weapon system now gave Pakistan with short range missile capability in addition to the already available medium and long range ballistic missiles and cruise missile in its inventory'. Nasr non-strategic nuclear weapon is developed to counter New Delhi aggression at conventional level which is increasing day by day. Pakistan due to its financial

constraint cannot counter it entirely through conventional means (Siddique, 2016, p.5).

The aim of short range nuclear weapon is not to induct weapons of use but weapons of deterrence in order to balance New Delhi's move at conventional military offensives to the tactical level (Lodhi, November 6, 2012). In 2015, Lt. General Khalid Kidwai expressly declared that Hatf-IX is a Tactical Nuclear Weapon and that it forms part of the Full Spectrum Deterrence doctrine (Yamin, 2015, p.31). Shams-uz-Zaman an academic and research scholar share his views in these words 'Pakistan considers the nuclear weapons as last resort weapons which are only meant for deterrence and their use can only be contemplated as a last resort and any decision about the Tactical nuclear weapons would be taken by the highest authority and would have strategic implications' (Shams-uz-Zaman, personal communication, August 10, 2017).

5.1.2.3 Pakistan's Command and Control System

There is a commonly held misperception that due to the nature of tactical nuclear weapon, these weapons would be pre-delegated to the field commanders for an effective utilization, which consequently pose the risk of unauthorized use. But Pakistani officials strongly refuted such assumptions and reiterated the fact that all nuclear weapons including tactical nukes would remain centralized with the National Command Authority (Sultan, 2014). The centralized command and control mean that the Nasr tactical nuclear weapon would not be controlled by the

field commanders, but by the central authority. Director in the Arms Control and Disarmament Affairs branch of Strategic Plans Division Zahir Kazmi asserts that 'Hatf-IX would most likely become Pakistan army's strategic force command (ASFC) assets' and its implication could be that 'Islamabad could exercise assertive command and control over short range ballistic missiles and would prevent the likelihood of pre-delegation'. Retired Brig Feroz Khan argues that central command lessens the credibility of the tactical nuclear weapons: 'Islamabad is planning a central control of the tactical nuclear weapon when deployed in battlefield. Thus, the battlefield commander has the TNWs physically but not the authority to use them, which immediately reduces the credibility of the weapons' (Ahmed, 2016, p. 12).

According to Dr. Bukhari 'it would be difficult to have centralized command and control system over TNWs but Pakistan is working on enhancing the range of its tactical nukes. Recently, Pakistan has extended the range of Nasr from 60 to 70 km and if it is enhanced more with low yield then there will be some possibility to centralize its tactical nukes which will be effective for the credibility of Pakistan TNWs with the passage of time' (Dr. Shahid Bukhari, personal communication, August 15, 2017). As stated by Masood Khattak that 'the tactical nukes would require delegative control system, in which the forward commanders would be able to order nuclear strike in case of any incursions from the Indian ground forces. But at this moment Pakistan follows assertive command and control system which means it is centrally controlled. It is expected that the Government of Pakistan may

review its command and control for tactical nukes from assertive to delegative' (Masood Ur Rehman Khattak, personnel communication, August 26, 2017).

On the other hand, if Islamabad decides to adopt delegative control then the TNWs would be more effectively use in battlefield but increase the chances of unauthorized or accidental use. In order to prevent India from taking advantage out of its conventional superiority against Pakistan; therefore the deployment of TNWs would serve as an effective deterrent tool. Dr. Zafar Cheema President / Executive Director at Strategic Vision Institute stated that 'Pakistan developed TNWs for deterrence not to use them. If Pakistan's armed forces would be defeated and territory would be captured by India than National Command Authority would use its TNWs' (Dr. Zafar Iqbal Cheema, personal communication, August 4, 2017).

Deployment of Pakistan's TNWs at adversary border would compel India to think twice to 'calculate the expected value of the gains' and 'losses anticipated from initiating the conflict'. Pakistan key objective of deployment of TNWs would be to deter India from operationalization of Cold Start Doctrine. Pakistan only uses its TNWs when its existence is at stake. Therefore, there is no need for pre-delegation command and control system for tactical nukes (Khan, 2011). According to Dr. Khan, Pakistan decided to exercise assertive command and Control system which is a dynamic concept. Pakistan current command and control will be change with the changing situation if Pakistan communication systems would be jammed or intercepted by India. India is capable of jamming Pakistan communication systems. Pakistan has to keep its option open. At the

moment Pakistan command and control structure is centralized but with the changing situation they would not likely to remain central. They will also change according to the situation (Dr. Zulfiqar Khan, personal communication, August 3, 2017).

5.1.2.4 Pakistan's Second Strike Capability

The Cold War model and the existing East-West competition demonstrate that an assured second strike capability is the true guarantor of credible deterrence. Pakistan is unable to match Indian massive military expenditures which create conventional asymmetry between two states. In order to restore deterrent stability of South Asia, Pakistan is building up its nuclear arsenals. Pakistan has already developed tactical nuclear weapons that could be deployed again Indian troops on the battlefield. India is not only modernizing its conventional capability but also pursue an active missile development and Ballistic Missile Defence Program. In April 2015, India successfully tested nuclear capable K-4 Submarine Launched Ballistic Missile (SLBMs) from its nuclear powered submarine Arihant which has taken New Delhi closer to second strike capability. From its conventional military doctrine to the development of sea based nuclear capability, all these actions destabilized regional strategic balance. In order to ensure deterrence stability and its survival against India, Pakistan adopted credible minimum deterrence posture with full spectrum deterrence (Gady, 2015).

In response to New Delhi naval nuclear capability, the development of an Islamabad's sea based nuclear capability was inevitable. According to the

statement of Pakistan Foreign office said that the reported India's Submarine Launched Ballistic Missile (SLBM) test and development of a nuclear submarine fleet are serious developments which disturb the existing strategic balance of South Asia. Pakistan conducted successful test of Babur-III a Submarine Launched Cruise Missile (SLCM) in 9th January, 2017. The range of the Babur III missile is 450 kilometers and can carry different type of payloads. With the reported range of 450 km, Babur III missile would be able to reach most of the Indian major cities. This missile test not only ensured a Pakistan's credible sea based second strike capability but also restored the strategic balance which was disturbed by the Indian test of nuclear capable K-4 SLBM from INS Arihant (Mustafa, 2017, p.2).

5.3 Strategic Deterrence value of Pakistan's TNWs

Indian Military Cold Start Doctrine is destabilizing for South Asian region. In response to Cold Start Doctrine, Pakistan pursued Tactical Nuclear Weapons that readdress the insecurity introduced by the Indian military doctrine. Brigadier Retired Feroz Khan quotes the rationale of Pakistan's security managers: 'Nasr TNW, therefore restore the strategic balance by closing the gap at the operational and tactical level. Nasr pour cold water to Cold Start and it is the weapon of peace. Nasr restores the balance and should convince India to think long before deciding to attack' (Khan, 2013). According to former research fellow Masood Khattak 'tactical nukes holds peculiar position as far as Indian military's Cold start doctrine is concerned. The induction and deployment of Tactical nuclear weapons would

checkmate CSD and prevent India from any misadventure' (Masood Ur Rehman Khattak, personal communication, August 25, 2017).

As far as Pakistan is concerned, tactical nuclear weapon Nasr is a purely defensive weapon meant to strengthen conventional deterrence and deter the attacking forces at tactical level. Though, the introduction of tactical nukes in South Asia has complex dynamics. Islamabad faces a dilemma of deterrence stability and TNW should stabilize deterrence in the region (Jalil, 2017). Dr. Shahid Bukhari a Senior Fellow at SVI stated that, 'Pakistan tactical nuclear weapons have a definite capability to deter India's aggressive military action. After Modi Government, India is more assertive towards Pakistan. They have claimed to conduct surgical strikes inside Pakistan which is yet doubtful. If India has assertive behavior towards Pakistan, Islamabad can expect any kind of Indian conventional military attack. In response Pakistan TNWs have a capability to launch a low yield attack' (Dr. Shahid Bukhari, personal communication, August 15, 2017). Pakistan's tactical nuclear weapons which are only meant to deter Indian conventional attack rather than war fighting weapons. Pakistan believes Nasr as integral part of its strategic deterrence which deter form range of threats at the strategic level, operational level and tactical level (Jalil, 2017).

As stated by Shams-uz-Zaman an academician and research fellow that 'Pakistan believes that both India and Pakistan subscribe to the 'rational actor model' which posits that states make their choices on the basis of cost–benefit analysis. Pakistan believes that the rational choice model would discourage the

Indian leadership from considering war as an option in a nuclear South Asia' (Shams-uz-Zaman, Personal Communication, August 10, 217).

5.4 Indian Response to Pakistan's TNW's

India adopted offensive military doctrine which would provide a space for limited conflict with Pakistan under nuclear threshold. In an appropriate response to Cold Start Doctrine, Pakistan developed tactical nuclear weapon Nasr, which provides a qualitative response to the conventional asymmetry by India. In response to Pakistan's tactical nukes, New Delhi is flirting with the idea of a pre-emptive nuclear attack on Islamabad to allegedly deter it from considering using TNWs (Ashraf, 2017). Indian Ex. National Security Adviser Shivshankar Menon in his book titled 'Choices- Inside the Making of India's Foreign Policy' said that if Pakistan use its tactical nuclear weapons against India, it would effectively be opening the door to a massive Indian First Strike, having crossed India's declared red lines. India will retaliate massively against any adversary that targets India or Indian forces anywhere in the world with weapon of mass destruction. According to the former Indian Defense Minister Parrikar said that New Delhi should not bind itself to a no first use (NFU) policy and only stress that it will always act responsibly'. India tested its Short Range Ballistic Missile Prahaar soon after Pakistan's SRBM test but it is not in response to Pakistani Nasr weapon (Sirohi, 2017).

CHAPTER 6

IMPLICATIONS ON SOUTH ASIAN DETERRENCE STABILITY

Deterrence stability is a theoretical concept which means dissuasion through the tools of fear and terror. After nuclear test in 1998, concept of deterrence began to develop in South Asia. India and Pakistan acknowledged the effectiveness of nuclear deterrence. In the case of South Asia, nuclear deterrence has prevented both conventional and nuclear war up to this point. Below the conventional level there is a sub conventional level. There is always a room for use of force at sub-conventional level. In case of India-Pakistan, Pathan Kot incident, Uri Incident and Border clashes did not allow India to make it an excuse to launch a conventional war against Pakistan (Dr. Zafar Iqbal Cheema, personal communication, August 4, 2017). But India power projection behavior is undermining the regional strategic environment and destabilizing regional centric deterrence. New Delhi is rapidly modernizing its conventional, non-conventional and network centric platforms thereby nuclearizing the Indian Ocean (Abbasi, 2015).

India is developing Ballistic Missile Defence System and sea based a second strike capability which has the potential to destabilize deterrence stability in the future. Pakistan's deterrence is credible enough to balance Indian aggression

at this stage. Therefore, Pakistan has no anxiety about Indian Ballistic Missile Defence System because these technologies will take decades before India achieves a reliable and effective system. Despite external and regional pressure, economic constraints and technological hurdles, Islamabad has been consistently modernizing its nuclear deterrence force in order to maintain existing deterrence stability against Indian conventional and non conventional moves, thus maintaining peace and avoiding war. According to Shams-uz-Zaman, Indian strategy of Pro Active Operations or Cold Start Doctrine was extremely destabilizing and mandated to elicit a response which effectively forecloses the option of limited war. Tactical nuclear weapons have thus played a role on equalizer by pouring cold water on the Cold Start. Pakistan thus sees tactical nuclear weapons as a factor of stability (Shams-uz-Zaman, personal communication, August 10, 2017). Indian Cold Start Doctrine and Pakistan's tactical nuclear weapons have considerable repercussions on South Asia deterrence stability which are as following:

6.1 Arms Race in South Asia

Since from the beginning, India and Pakistan have been indulge into rivalry and competition. The two states have fought several full scale wars and have been involved in many clashes. Islamabad's major security threat perception comes from New Delhi. India also perceive a security menace from Pakistan but its national security policy is also driven by its ambitions for status as a major power of the South Asian region. These particular security outlooks have translated into

an arms race, primarily a conventional one which has turned into a nuclear one soon after nuclearization of South Asia. In the last few decades, both states have been locked in an action-reaction spiral of nuclear arsenals and ballistic missile development (Jalil, 2017). There are several models that govern arms races but Dr. Naeem Salik describes three models: first is the action-reaction model, second is domestic structure model and third is technological imperative model. Action-reaction model fits in case of India and Pakistan. According to this model, countries increase their arsenals quantitatively as well as qualitatively because of real or perceived security threats from other countries. South Asian nuclear and missile competition has been dominated by action-reaction model (Salik, 2016, p.246).

In case of India and Pakistan, action-reaction model governs arms race between them. Pakistan took the path of nuclear weapons development in order to create balance against militarily superior India. New Delhi developed limited war doctrine and Islamabad has responded through tactical nuclear weapons. Acquisition of TNWs Pakistan shows security interdependence between two states. It thus perpetuates and increases the arms race between two rival states India and Pakistan (Jalil, 2017). The security competition between two states also manifests itself in the race for acquisition and development of delivery systems. New Delhi has a nuclear doctrine that predicts a triad of nuclear forces. India has developed land, air and sea based ballistic missiles. In response, Islamabad has also developed land and air delivery systems and recently made remarkable strides in

developing sea based delivery systems. New Delhi aims to acquire second strike capability in order to create assure deterrence. Islamabad with its limited resources ideally has a goal to develop second strike capability and successful test of Babur III a Submarine Launched Cruise Missile (SLCM) in January 2017, is the evidence of Pakistan's aiming for second strike capability (Tahir, 2017).

Table 6.1 Indian Nuclear Capable Missiles

Type	Range	Payload	Status
Land Based Ballistic Missiles			
Prahaar	150	200	Tested, conventional and nuclear capable
Prithvi I/II	150/350	800/500	Prithvi I reportedly nuclear capable, in service since 1994. Prithvi II reportedly nuclear capable, deployed
Agni I	700	1000	Deployed with Indian Army's 334Missile Group
Agni II	2000	1000	Deployed with Army's 55 Missile Group
Agni III	3000	1500	Inducted into service but not fully operational
Agni IV	4000	1000	Tested
Agni V	>5000	1000	Tested
Sea Based Missiles			
Dhanush	350	500	Induction underway, last tested in November 2015
K-15 (Sagarika)	700	500-600	Tested November 2015 from submarine INS Arihant. Under production
K-4	3000	2000	Last tested in April 2016

Source: SIPRI Yearbook 2015. (2015). *Armaments, Disarmaments and International Security*: Oxford University Press, p. 498.

Table 6.2 Pakistan's Nuclear Capable Missiles

Type	Range	Payload	Status
Land Based Ballistic Missiles			
Abdali (Hatf-2)	180	200-400	Under development, test launched on 5 to 11 Mar, 2002
Ghaznavi (Hatf-3)	290	500	Entered service with Army in 2004
Shaheen I (Hatf-4)	650	750-1000	Entered service with Army in 2003
Ghauri (Hatf-5)	>1200	700-1000	Entered service with Army in 2004
Shaheen II (Hatf-6)	2500	1000	Under development, last tested April 21,2008
Nasr (Hatf-9)	60		Under development, last test May 29, 2012
Cruise Missiles			
Babur (Hatf-7)	600	400-500	Under development, tested on Sep 17, 2012, initially land but reportedly air and sea based versions under development
Ra'ad (Hatf-8)	350	450	Under development, air launched, last test May 31, 2012
Babur 3	450	various types of payloads	Tested January 2017, its first Submarine launched Cruise Missile (SLCM)

Source: SIPRI Yearbook 2015. (2015). *Armaments, Disarmaments and International Security*: Oxford University Press, p.504.

Generally, in ballistic missile development, New Delhi has taken the lead which Islamabad following closely. Pakistan is always trying to react or 'catch up' to those Indian developments that pose threat to its sovereignty. Although Pakistan does not wish to engage in an arms race with New Delhi, it must maintain credible minimum deterrence with full spectrum. Indo-US nuclear deal is another

development that highlighted Pakistan's threat perceptions towards India. According to this deal, India agreed to place its all civil nuclear facilities under IAEA safeguards and in returns New Delhi would have complete access to civil nuclear technology, fuel and get waiver from the Nuclear Supplier Group (NSG). According to the NSG waiver, New Delhi would indulge in civil nuclear trade with United States and rest of the world. This civil nuclear cooperation presented a number of security issues and threat perceptions. Pakistan in response, speed up its fissile material production. Islamabad already has plutonium producing reactors which are operational at Khushab. Pakistan has also speeding up its stockpile of fissile material (Salik, 2009).

India replaces its Sundarji military doctrine with aggressive limited war doctrine named as Cold Start. This is another chain in the action-reaction spiral of security interdependence between two states. This offensive military doctrine is based on pre-emption and envisages reorganizing Indian army three large strike crops into eight smaller Integrated Battle Groups (IBGs) to launch multiple strikes into Pakistan. This doctrine heightened security concerns and Pakistan responded by conducting several military exercises, adopted a new concept of war fighting but Pakistan did not compete India militarily; as a result Pakistan developed tactical nukes in order to readdress the instability introduced by the Indian Cold Start Doctrine. Indian Cold Start Doctrine and Pakistan's tactical nuclear weapons are the latest developments in the action-reaction spiral which effectively demonstrated that both South Asian states are embroiled in a security competition

that shapes the strategic environment of the region as well as drives their conventional and nuclear programs (Jalil, 2017).

The ongoing arms race between India and Pakistan is a serious regional concern. Yet evidently, Pakistan is not seeking a nuclear parity with India but compelled to exhibit a reaction in response to an action that threaten its sovereignty. However, a timely successful reaction shows operational preparedness and capabilities of Pakistan to counter security threats, which should not be undermined (Ashraf, 2015). The action reaction type behavior of both states leadership is also complicating the fragile balance of nuclear deterrence, which is already disturb with the disparity in both countries economic and military power potentials that has created a asymmetry, which can further complicate the nuclear dynamics of the region in the absence of meaningful efforts to resolve the grievances (Khan, 2016).

6.2 Strategic disparity between India and Pakistan

The most fundamental feature of the strategic balance is the significant imbalance in India's favor. Although the precise levels of nuclear warheads held by India and Pakistan have not been declared, there is little doubt that India's stockpile is superior both qualitatively and quantitatively. India is believed to have a thermonuclear capability, whereas Pakistan relies on fission designs using HEU. India's capacity to produce fissile materials is significantly greater. The asymmetry in capabilities also favors India with regard to all kinds of delivery systems. India

has a geographic depth that Pakistan lacks and a significant proportion of India's territory is out of reach of Pakistan's nuclear arsenal, whereas India can target every location in Pakistan. India is far in advance in space reconnaissance assets. It launched its first observation satellite using Soviet launch capabilities in 1988 and now is able to launch its satellites using its own launchers. India's long-range airborne reconnaissance capabilities are considerable compared to Pakistan's limited early warning assets. Indian growing capabilities in advanced information, reconnaissance and surveillance system i.e. Israel's Phalcon and Green Pine radars, anti ballistic missile defense system and steady militarization of outer space heightens strategic weapons asymmetry between two states increase the chances of instability in South Asia (Khan, 2008).

On the nuclear side, New Delhi would be able to secure huge reserves of stockpiles under the Indo-US nuclear deal. Presently India possesses 500 kg Plutonium and 11.5 metric tons of reactor grade plutonium in spent fuel. According to some estimates, New Delhi would be able to expand its nuclear arsenals up to 300 to 400 warheads in the next five years. These Indian developments put strategic stability of South Asia in disarray. Indian estimates of nuclear weapon potentials are influenced by three parallel streams of weapons usable materials. The prime source of New Delhi's growing strategic capabilities emanates from weapons grade plutonium and HEU being produced in its gradually expanding fissile material infrastructure, its plutonium production, centrifuge, breeder and reprocessing programs. Secondly, New Delhi stockpiles of

unsafeguarded separated reactor grade plutonium and HEU in excess of its naval force program present the potential of being diverted to the nuclear weapon program on short notice (Ahmed, 2017). Thirdly, New Delhi's increasing stockpile of unsafeguarded spent fuel containing reactor grade plutonium, coupled with its growing efficient and increasing reprocessing capacity, also offer potential for future expansion in Indian arsenals. All three parallel streams are probable to contribute to aggravating Islamabad's strategic anxieties and threat perceptions. According to Pakistani officials, Pakistan is no seeking parity with India but responds only to those Indian developments which cause a security threat to its sovereignty (Syed, 2015).

According to Pakistan's former envoy to UN in Geneva Amb Zamir Akram said that Pakistan is not seeking to achieve parity with India in terms of nuclear weapons, but is rather pursuing full spectrum doctrine to ensure that there is no gaps in its deterrence capability ('Pakistan doesn't want nuclear parity' , 2017). Pakistan is concerned about Indian potential to increase its nuclear arsenals in a short notice and its refusal to place its entire civil nuclear energy program under IAEA safeguards. India is designating unsafeguarded civil plutonium stockpile as 'strategic' which create a disparity between India and Pakistan (Ahmed, 2017).

New Delhi also enjoys a growing conventional superiority over Islamabad based on an increase in defense spending and defense expenditure over the last three decades. Whilst growing forces of Pakistan have remained formidable against an India conventional attack, New Delhi's ability to fight aggressively with

combined arms techniques has considerably outpaced Islamabad's. From 1990 to 2003, India attained and maintained a 3:1 high performance aircraft numerical advantage over Pakistan. Indian progresses in wide area communications, reconnaissance and battlefield awareness are considerably greater than Pakistan. Overall disparity of economic resources, Indian wider access to arms suppliers, greater capacity for advanced military absorption, limitations on Pakistan's ability to acquired advanced weaponry system has slowed its own conventional modernization by comparison with New Delhi so that the capability gap continues to widen. In overall national resources and military power, both states are far from evenly matched. Indian economy has been increasing more rapidly than Pakistan's. For conventional defense, New Delhi enjoys a naturally extended strategic depth, covering most of the subcontinent and Pakistan is relative to India is smaller state. Growing disparities between two sates disturb the existing deterrence stability of the region and also increase the chances of conflict (Kazmi, 2011).

6.3 Possibility of Limited War under Nuclear Umbrella

The South Asian security is in danger because of the Indian aggressive military doctrine Cold Start. Cold Start is an offensive military doctrine directed against Islamabad. Under this doctrine, Indian would launch swift, quick and offensive limited strikes against Pakistan to attain shallow territorial gains. According to Cold Start doctrine, limited war is possible in South Asian region. According to the former Indian Army Chief General Deepak Kapoor said that 'the

possibility of limited conflict under a nuclear threshold is still a reality in South Asia' (Khattak, 2011).

According to Dr. Zulfiqar Khan Head of Department, India has superiority in conventional weapons and has a huge army. A similar asymmetry is in its air force and navy as well. India would like to keep its escalation dominance because it has the conventional capability that is the one reason behind Indian claim of initiating a limited conventional war. According to him, initiating a limited conflict against a declared nuclear weapon states is a flawed strategy (Dr. Zulfiqar Khan, personal communication, August 3, 2017). According to Shams-uz-Zaman, Pakistan believes that both India and Pakistan subscribe to the 'rational actor model' which posits that states make their choices on the basis of cost – benefit analysis. Pakistan believes that the rational choice model would discourage the Indian leadership from considering war as an option in a nuclear South Asia (Shams-uz-Zaman, personal communication, August 10, 2017).

Masood Ur Rehman has different views regarding the possibility of limited war in South Asia. According to him 'the chances of limited war are there because India has brought doctrinal change and carried out massive military modernization drive, which is going to create strategic disparity in South Asia. Basically India is looking for a gap under nuclear umbrella to carry out limited attack against Pakistan. Such thinking is aggressive and would invite countermeasures from Pakistan' (Masood Ur Rehman, personal communication, August 26, 2017).

Presently, chances of limited war between India and Pakistan are very low which mean that Pakistan tactical nukes are successfully deterring India from operationalising its Cold Start Doctrine. According to Dr. Bukhari, 'there is no chance of limited war between India and Pakistan because according to Pakistan's undeclared nuclear policy; Pakistan has overwhelming nuclear deterrence which India knows very well' (Dr. Shahid Bukhari, personal communication, August 15, 2017). Any limited conflict initiated by New Delhi under Cold War strategy may invoke a nuclear (strategic or non strategic) response from Pakistan because no conflict can remain limited for a longer period of time and eventually it can transform into a total war. In a clash with India, Pakistan will respond with full military resources and if it failed to contain the Indians with its conventional capabilities, then non-strategic nuclear weapons will definitely come into play. But if Pakistan failed to contain Indian forces with Non strategic weapons then strategic nuclear weapons will use as a last resort (Kugelman, 2016).

6.4 Chances of Surgical Strikes between India and Pakistan

Since 2015, Indian military forces are being attacked by militants. In July 2015, three gunmen attacked a bus and police station in Gurdaspur. In January 2016 four to six gunmen attacked the Pathankot Air Force Station in which six militants and seven security personnel were killed (Kumar, 2016). Later on 18 September, 2016 Indian army brigade headquarter at Uri was attacked by four militants, in which 17 Indian army soldiers were killed and round about 30 army

personnel were injured. On 29 September, 2016 the Indian army conducted 'Surgical Strike' against suspected terrorist along the Line of Control (Ahmad, Philips & Berlinger, 2016).

Surgical Strike which is conducted through airborne or artillery based precision guided strikes, which require sophisticated intelligence and surveillance. Pakistan rejected the Indian claim of any surgical strike took place rather Indian cross border fire upon Pakistani soldiers. Former Inter Services Public Relations (ISPR) spokesman Asim Bajwa termed the 'Surgical Strike' claim an 'Illusion being deliberately generated by New Delhi to create false effects' and 'Fabrication of the truth' (Abbas, 2016). In view of Dr. Shahid Bukhari 'Pakistan has a credible military presence over a border area with India and effective response capability to counter Indian aggression. It is nearly impossible for India forces to enter into Pakistan for conducting surgical strikes' (Dr. Shahid Bukhari, personal communication, and August 15, 2017).

Dr. Zulfiqar Khan Head of Department of Strategic Studies at NDU said that 'Indian claimed to carry out surgical strike against Pakistan in September 2016, was a rubbish claim. Rubbish in a sense that you can make any claim as you like but it was not a surgical strike. If India goes for it, it has serious implications for both states. For certain extant it will remain a conventional conflict but beyond certain level no one can say that it will remain limited conventional war. It can lead to a nuclear holocaust. It will have series of implications. If India is insisting for operationalising its Cold Start Doctrine against Pakistan than India will also

have to pay for the severe implications at conventional as well as strategic level. No one knows the adversary redlines' (Dr. Zulfiqar Khan, personal communication, August 3, 2017).

As for the Indian military capabilities are concerned, India is inducting fifth generation Rafael Aircraft from France and SU-30 MKI from Russia along with S-400 and Barak-8 Air defense system. It is also in deal with Israel for the induction of long range armed UAVs. The induction of highly sophisticated Apache helicopters is also under way. All these capabilities along with IAF Doctrine of 2012 which talks about sub-conventional warfare- (surgical strikes) suggests that India is now aiming for surgical strikes and they are filling the gaps in their overall offensive capabilities (Narang, 2016). According to Masood Khattak, 'India may use their air superiority aircraft or UAVs for future surgical strikes against Pakistan and install long range highly destructive S-400 and Barak-8 air defense systems to deter Pakistan from any aerial response. In addition there is greater political will in the incumbent government in India. The Indian politicians and army chief has declared many times in the recent past that they would carry out surgical strikes against alleged terrorist safe heavens in Azad Jammu and Kashmir or close to Line of Control' (Masood Ur Rehman, personal communication, August 26, 2017).

CHAPTER 7

CONCLUSION

After partition of subcontinent in 1947, India and Pakistan emerged as sovereign states of South Asian region. Since independence, relations between two states have been in the state of constant flux. Although, both states share cultural, geographical and economic links but their relations has been plagued by animosity and mistrust. From the beginning, territorial issues (Kashmir, Rann of Kutch and Siachen) and unfair division of resources became a bone of contention between two states. The Indo-Pak conflictual relations have also hampered the development of economic and trade cooperation between them. So far, India and Pakistan have fought two full scale wars in 1947, 1965 and numerous skirmishes over Kashmir Issue. Indian involvement in civil war in East Pakistan resulted in the partition of East and West Pakistan into two sovereign states Bangladesh and Pakistan. Indian involvement in 1971 war further intensified the Pakistan's fear about intensions of New Delhi. After loss of its Eastern Wing, Pakistan realized the conventional gap between India and Pakistan. The conventional disparity forced Pakistan to develop nuclear weapons.

In May 1998, the relations between two states took a new turn when New Delhi conducted its nuclear test on 11 and 13 May 1998, followed by Islamabad conducting its own series of nuclear tests on 28 and 30 May 1998. Formally India and Pakistan became nuclear weapon states in 1998 but nuclear factor was visible

during the Brasstacks crisis of 1986 and Kashmir crisis of 1990. Deterrence concept in the South Asian region began to develop after 1998 nuclear tests. Deterrence relationship between two states has been driven by the perceived security threats and the strategic environment of South Asian region. Deterrence debate was further complicated by the crises like 1999 Kargil conflict, 2001-2002 Border Standoffs and 2008 Mumbai attack, when the two states came to the brink of war. It is mainly because of deterrence factor that the two states could avert going to full scale war over above mentioned crises. After nuclear test, Pakistan has decided to use nuclear capability as an equalizer against New Delhi's conventional military advantage thereby preventing it from initiating any kind of aggressive action against Pakistan.

The failure of Indian military doctrine Sundarji in operation Vijay and Operation Parakram led it to develop capability for launching limited conventional conflict under nuclear threshold. India officially adopted military Cold Start Doctrine in 2004 with the objective to reduce the role of political leadership, pre-emptive diplomatic intervention of international community and thrash the military counter-mobilization capability of Pakistan. India conducted twelve military exercises near Pakistani border with the objective to test military capabilities for the implementation of Cold Start Doctrine. To operationalise Cold Start Doctrine, Indian military has acquired advanced weaponry, equipments, fire control system, battlefield surveillance radars, advanced aircraft, latest main battle tanks T-90,

artillery, sophisticated IRS (Intelligence, Reconnaissance and Surveillance) system.

Indian increased military funding and modernizing its armed forces for the operationalization of Cold Start Doctrine affected the deterrence stability of South Asian region. All these developments in conventional realms had increase pressure on Pakistan for taking suitable measures to restore deterrence stability in the region. In conventional response to Cold Start, Pakistan conducted military exercises and adopted New Concept of War Fighting (NCWF). In strategic response, Pakistan adopted minimum credible deterrence with full spectrum deterrence. For operationalization of full spectrum, Pakistan developed tactical nuclear weapons which give flexible options to strategist for a suitable response to Cold Start Doctrine. Because Pakistan could not use its strategic nuclear arsenals in response to low intensity conflict; neither could afford to fight a war with conventionally superior India. This created a gap in deterrence stability of South Asia which is filled with the developments of tactical nuclear weapons.

Pakistan considers Nasr as a weapon of peace and adopted assertive command and control system. Assured second strike capability is the true guarantor of credible deterrence. Recently, Pakistan successfully tests Submarine Launched Cruise Missile Babur III, which provides credible second strike capability to Pakistan. Indian Cold Start Doctrine and Pakistan's Tactical Nuclear Weapons have considerable implications on South Asian deterrence stability. Arms race between India and Pakistan is governed by action-reaction spiral. Pakistan

developed TNWs in response to Indian aggressive military doctrine. The action reaction type behavior of both states leadership is also complicating the fragile balance of nuclear deterrence, which is already disturb with the disparity in both countries economic and military power potentials that has created an asymmetry, which can further complicate the nuclear dynamics of the region in the absence of meaningful efforts to resolve the grievances.

Strategic disparity between two states is widening with the passage of time. India enjoys conventional imbalance, steadily militarized outer space and growing unsafeguarded stockpile of highly enriched uranium increase the chances of instability in the region. India adopted aggressive military doctrine for initiating limited war but it is challenged by infrastructural, operational and organizational barriers. Presently, chances of limited war between India and Pakistan are very low. Nuclear weapons in South Asia are successfully deterring India from initiating a war against Pakistan till now.

Any limited conflict initiated by New Delhi may invoke a nuclear (strategic or non strategic) response from Pakistan because no conflict can remain limited for a longer period of time and eventually it can transform into a total war. Initiation of limited conflict in South Asia ultimately affects the deterrence stability of the region. Current Indian military capabilities are not enough for imitating limited war or surgical strikes on Pakistan. In order to create peace and stability in the region, both countries try to resolve their differences in an amicable way because

use of force will never resolve differences between India and Pakistan. Following steps can be taken by both the states in this regards.

- A change in the strategic culture of the South Asian region is needed. Mistrust and misperception between India and Pakistan had not only diluted the effectiveness of deterrence in South Asia but could also accelerate miscalculation leading to an accidental nuclear war in the region. Both the states should work for the development of trustworthy relationship which will stabilize the deterrence in South Asia.
- Both the states need to introduce dialogue process, in order to ease the tensions and move towards conflict resolution in the long run.
- International community should play unbiased role in reducing tensions between India and Pakistan.
- For the peace and stability, both states should have to reassure each other that their strategic forces and their nuclear deterrents are secure from the pre emptive strikes.
- Both the states should sign Confidence Building Measures for maintaining existing deterrence stability of the region.
- In order to achieve long lasting peace in South Asia, India and Pakistan should address their 'core values' and the issues of 'strategic Interest'.
- Both the countries must negotiate for the development of Anti-Ballistic Missile Treaty for the region, in order to limit the development and deployment of Ballistic Missile Defence System.

- For the prosperity of South Asia, both states should focus on human development rather than defence.

Operational Definition of Major Terms

Deterrence	Deterrence is between two nuclear weapon rival states in order to create stability in the region. Researcher is measuring deterrence concept through deterrence stability of South Asian Region after 1998 nuclear weapon test.
Strategic Nuclear Weapons	Strategic Nuclear Weapons are those weapons which are designed to be used on targets often in settled territory far from the battlefield i.e. arms industries, military command center, transportation etc.
Tactical Nuclear Weapons	Tactical Nuclear weapons (TNWs) are Non-strategic nuclear weapons with operational military war-fighting capabilities. Pakistan's TNWs are measured through Pakistan Current Nuclear posture and Pakistani Foreign Secretary Aizaz Chaudhary statement (October 20, 2015.
Minimum Credible Deterrence	In which state possess no more nuclear weapons than is necessary to deter an adversary state. This concept is measured by Nuclear force posture of India and Pakistan after 1998 nuclear test.
Full Spectrum Deterrence (FSD)	It will deter conventional force by employing nuclear deterrence or provide flexible deterrence options. Researcher is measuring FSD concept through NCA meeting held in September 2015, ISPR and SPD official statements.
Pro-active Military Strategy/ Cold Start Doctrine	India's rapid but limited retaliatory invasions into Pakistan by the Indian army to acquire Pakistan's territory. This concept is measured by Indian military doctrine (2004).

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