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NUCLEAR DOCTRINES OF INDIA AND PAKISTAN: A COMPARATIVE ANALYSIS

Abstract

The paper examines the evolving nuclear doctrines and the command and control mechanisms of both India and Pakistan. Ambiguities in the doctrines and in the nebulous command and control mechanisms have been identified as areas that need to be given due consideration for regional and global security. The paper also shows how the doctrine leads to the development, refinement, lethality, penetrability etc. of the different components of nuclear arsenals. A step by step comparison of both doctrines has been made to explain the security implications for neighbouring countries, but most importantly to identify the doctrines' shortcomings. The paper concludes that a de-nuclearized South Asia is almost impossible due to China's proximity to the region and therefore efforts should be made to keep both the belligerents engaged in dialogue. Internal national pressure, matured and rational decision-making by the leaders, international pressure, a mixture of deterrence and cost-benefit analysis are some suggested moves towards rapprochement between India and Pakistan.

Introduction

India and Pakistan, the two proverbial South Asian arch-rivals, are locked in an imbroglio that has the potential for conflagration

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into a nuclear exchange. The two neighbours have fought three major wars and a good number of mini wars and skirmishes. “Three wars between the two parties since independence, long-standing and continuing skirmishes over Kashmir, a number of intense crises – some of which occurred against a backdrop of mutual suspicion concerning the possession of nuclear capabilities, and Islamabad’s recent move towards a more “overt” nuclear posture – all attest to the likelihood and potential seriousness of any future conflict”.¹

It is now known that, as early as in 1985, both the countries had crossed the nuclear threshold and were in possession of nuclear weapons. In 1986, long before the two antagonists carried out underground detonations of nuclear weapons in 1998, India intended launching *Operation Trident* (initially code-named *Exercise Brass Tacks*). Its aim, *inter alia*, was believed to have been the destruction of Pakistan’s nuclear installations. Indeed, “had a war broken out at this juncture, one of India’s objectives would certainly have been the destruction of Kahuta, a legitimate military target”.²

In December 2001, when the Indian parliament building was attacked, allegedly by Kashmiri militants, both Pakistan and India mobilized their troops, eyeball to eyeball, along the international border. During the Kargil conflict in 1998, both the powers were nearly on the verge of a nuclear exchange. Thankfully, their Mutual Assured Destruction (MAD) capability had deterred them from exercising this horrendous act. “One lesson of Kargil is that nuclear deterrence ultimately compelled restraint, de-escalation, and

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1. Peter Gizewski, “Indian Nuclear Doctrine: A Critical Assessment of the Proposal for a Minimum Nuclear Deterrent”, Department of Foreign Affairs and International Trade, Canada, March, 2000, p.4.
 2. W.P.S. Sidhu, “Indian’s Security and Risk-Reduction Measures”, *Nuclear Risk-Reduction Measures*, Michael Krepon and Michael Newbill (ed.), Report No.26, Stimson Center, Washington, November 1998, p.39.

disengagement on both sides".³ Nuclear exchange would have been self-defeating, resulting in wiping out of large cities, communication centers, airfields, industrial complexes, etc. Should the level have gone to the extent of retaliation by either party, the consequences would be cataclysmic indeed. It is probably not difficult to imagine that both the parties have their weapons at trigger alert, where the core, triggers, warheads and delivery systems of the nukes are assembled together or could be assembled in a matter of hours.

The dispute over Kashmir and the other issues propel India and Pakistan into a never-ending cycle of arms race and violence. Their social development and poverty alleviation programmes are often severely curtailed due to this very expensive and vicious arms race. No compromise could yet be reached over Kashmir, as both the powers either claim jurisdiction over it or call it a right of self-determination for the Kashmiri people. Centering this issue, mistrust and hatred keep on spiraling, manifestation of which is found in a long drawn out low intensity conflict. Pakistan says it is the indigenous freedom struggle by the Kashmiris, while India blames that it is fuelled and abetted by the Pakistanis. Such a state of relationship is bound to affect the rational decision making by the leaderships of both the countries. It may be recalled that Clausewitz had cautioned that emotions must be taken into consideration while analyzing a tensed or sensitive relationship, like the one that exists between India and Pakistan.

Nuclearization is a great leveler in inter-state relations. For Pakistan, this is all the more relevant since it is a question of her survival. For India, it is predominantly the deterrence against China that resulted in the former's nuclearization. And as a cycle reaction, Pakistan has also gone nuclear. It is the "Beijing-Islamabad nexus

3 Malecha Lodhi, "Security Challenges in South Asia", *The Non Proliferation Review/Summer 2001*, p.119.

against India that led New 'Delhi to develop weapons of mass destruction for national security interests".⁴ However, for India and to a lesser degree for Pakistan, it is also the nationalistic feelings that prompted both these countries to go nuclear. It has become a status symbol for them. Probably the jingoistic fervor of both the countries tends to blur the imagination of horrendous impacts nuclear exchange would have on their respective age-old civilizations. For New Delhi, an added factor for going nuclear was that India would like to get the status of a major power whose ripples should be felt beyond the orbit of South Asia. India, otherwise, as the experts conclude, is one of the six power centers of the world today. It is generally believed that China has, in a subtle way, kept India tied down in the South Asian affairs specially by arming Pakistan, which has even gone to the extent of overtly going to the weaponization of its nuclear arsenals.

Be that as it may, South Asian security environment has engendered a kind of inferiority complex for Pakistan, especially after her defeat by India in 1971. India, on the other hand, has asserted herself as the supreme power in South Asia with a vision of establishing herself as an Asian power. America would probably like to utilize India as a counterweight to China, an emerging power centre of the world that is likely to challenge the United States in the long run. Pakistan, in an effort to catch up in conventional arms with India, faces with inadequacy. To overcome this shortcoming, Pakistan has gone nuclear that can be called deterrence - a concept that works marvel against an enemy that is otherwise superior and stronger conventionally. This has really worked well for Pakistan, otherwise a

4 Dr. Rajesh Kumar Mishra, "India's Nuclear Command and Force Preparedness for NFU", Paper No. 589, South Asia Analysis Group, January 2003; <http://www-saag.org/papers6/papers589.html>.

nuclear showdown would have followed the Kargil conflict or Pakistan would have been taught a lesson conventionally. Although both countries are trying to develop doctrines and strict command and control mechanisms to obviate any misuse or accidental use of nuclear weapons available in their respective arsenals, things might go disastrously wrong when the chips would be down.

Some of the key areas that the doctrine should address could be: Who should have the overall supreme control over both the strategic and tactical nuclear weapons? At what stage of the conventional battle the nuclear attack becomes essential? Should there be firm and final control with the political Chief Executive or some flexibility be given to the field military commanders based on 'launch on warning' or 'launch through warning' strategies? Should there be a pre-emptive nuclear strike included in the overall operational plan? Which are the targets to be pre-designated during peacetime and whether those should be counter value or counter force targets?⁵ Some of these areas are not adequately addressed or implications not correctly assessed, with the doctrines formulated by both the countries having ambiguities and lacking transparency and the nebulous command and control mechanisms that cannot be called, by western standard, a fail safe system. There is, therefore, a strongly-felt need to study their implications in the security environment of South Asia. Ambiguities in the doctrines and nebulous command and control systems are to be given due consideration while analyzing the emerging security scenario that is also intricately linked up with the war on regional and international terrorism.

5 Kamal Matinuddin, *The Nuclearization of South Asia*, Oxford University Press, New York, 2002, p.234.

Against the preceding backdrop, this paper would like to evaluate the nuclear doctrines and relate those to the ground realities of both India and Pakistan and the region as a whole. The paper would attempt to identify the discrepancies or ambiguities in the doctrines along with the command and control mechanisms that may affect the practical application, find out the scope for the use or misuse of the doctrines. The paper would also attempt to show how the doctrines lead to the development, refinement, lethality, penetrability, etc., of the different components of nuclear arsenal. India has articulated a draft nuclear doctrine – a quasi-official document – which, however, needs refinement. Pakistan, on the other hand, has not made any formal declaration of its nuclear doctrine, although its salient features can be gauged from different pronouncements made by its leaders and strategists. India, however, has also issued an operationalized doctrine, which is more concise and refined and better focused on the command and control aspects. This paper would attempt to deal with the relevant aspects, be it formal or informal.

Salient Features of the Doctrines

Pakistan would like to have a doctrine that would ensure minimum deterrence that India calls a credible minimum deterrence. Whether there is any basic difference in practical application of their respective doctrines or it is just rhetoric would be explored subsequently. Pakistan has a dilemma in ascertaining whether minimum deterrence can be defined in terms of static numbers. Pakistan would have to consider the dangers of interception and preemption of which India is much more capable than Pakistan. Related to it, the question of survivability of nuclear arsenal comes to the fore. As a rule of thumb, if 50 percent of the counterforce

becomes vulnerable, its size would have to be doubled. Added to it, the delivery systems would have to be upgraded in proportion to their vulnerability. The concept of deterrence is also related to India's conventional superiority. Pakistan, according to one Pakistani author, should not be happy with static numbers. The deterrence strategy should be based on the principle of adequacy and not sufficiency with in-built secure second-strike capability.⁶ Here adequacy implies nuclear combat potential, in case deterrence fails, left for second strike capability. One Pakistani strategist, General Lodhi, makes no bones in clearly articulating the first use doctrine to checkmate an Indian (conventional) offensive against Pakistan. He states, "we will use nuclear weapons if attacked by India even if the attack is with conventional weapons...Pakistan would use what Stephen Cohen calls an 'option enhancing policy'".⁷ Pakistan has made it explicitly clear that it maintains first strike option. Pakistanis would like to use as they call 'the weapons of last resort' in the event of a general war or when Pakistan gets threatened of being bifurcated by an Indian offensive or a large chunk of its territories falls in the hands of the Indian forces.

However, Pakistani doctrine calls for stage-by-stage approach; first stage could be a public or private warning followed by demonstration explosion of a small nuclear weapon on its own soil. The third step would be the use of a few nuclear weapons on its soil against Indian attacking forces and fourth could be the counterforce targets across the border inside India. Pakistani doctrine, as can be presumed, would always keep some weapon

6 Lieutenant Colonel Mohammad Feyyaz, "India's Nuclear Ambitions: Is our Minimum Deterrence Credible", *The Citadel* No 1/2001, Command and Staff College, Pakistan, p. 39.

7 Quoted in Gurmeet Kanwal, *Nuclear Defence: Shaping the Arsenal*, Knowledge World in association with Institute for Defence Studies and Analyses, Delhi, April 2001, pp. 57-58.

systems and the delivery means in reserve for counter value targets. Pakistani doctrine should be catering, in the event of the nuclear exchange, for some airborne and ground based mobile delivery means.⁸ For Pakistan, its doctrine, given its lack of sophistication in intelligence and early warning means, would go for delegation of authority to the commander of forces in the field mainly for counterforce targets at tactical level. Pakistani doctrine, as can be strongly presumed, would operationally rely on “dispersal, camouflage and deception to enhance force survivability during crises and periods of tension”.

Pakistan’s nuclear doctrine also indicates that she will neither use nor threaten to use nuclear weapons against non-nuclear states. Pakistan, like India, is also committed not to transfer nuclear technology to any other country or entity.⁹

India’s position is altogether different from that of Pakistan, which means ‘No First Use’ (NFU) nuclear doctrine. It implies that the nuclear weapons will be used in retaliation against a nuclear attack on Indian territory or on Indian forces anywhere and, once used, would be able to inflict unacceptable damage. However, India’s ‘NFU’ concept is further qualified by an ambiguous statement given in Clause 2.5 of the doctrine that would be explored subsequently. India’s doctrine makes it abundantly clear that in the event of a major attack by biological or chemical weapons against India or Indian forces anywhere, India would retain the option of retaliating with nuclear weapons.

8 Lt Gen (Retd) Sardar FS Lodi, “Pakistan’s Nuclear Doctrine”, <http://defencejournal.com/apr99/Pak-nuclear-doctrine.htm>.

9 Brigadier Firoz Hasan Khan, quoted in *NDC Papers 1/2003*, National Defense College, India, p.10.

Credibility is one of the most striking features of Indian doctrine that stipulates that any adversary must know that India can and will retaliate with sufficient nuclear weapons to inflict destruction and punishment that the aggressor will find it unacceptable if nuclear weapons are used against India and its forces. India maintains that it would have sufficient, survivable and operationally prepared nuclear forces. It may be argued that Pakistan would also maintain similar forces implying she would also have in-built second-strike capability. Indian doctrine calls for early warning capabilities thereby implying creating space-based and other assets. To fulfill the objectives of credible deterrence, India's doctrine calls for the forces which would be effective, enduring, diverse, flexible, and responsive and as such based on a triad of aircraft, mobile land-based missiles and sea-based assets. Pakistan would definitely lag in early warning capabilities, especially in the spaced-based assets and also in the triad, as Pakistan would find it difficult to afford submarine-based assets. Pakistan, however, is making commendable strides in the land-based ballistic missiles. Pakistan's air-based assets are modest when Indian ones are more robust. However, Indians have to always keep the China factor in mind. The details of draft Indian doctrine are given in annex 'A'.

Both the countries talk about creating, or are in the process of evolving, a fail-safe robust command and control system. Command and control of the nuclear forces, in case of India, would be strictly controlled by the political leadership. In case of Pakistan, civilian control would be notional.¹⁰ Pakistan's nuclear doctrine, however, implies that the command and control of the nuclear forces are vested in the highest political authority. It would be pertinent here to give the latest hierarchy of the command and control system of both

10 Raj Chengappa "Who controls the Button", *India Today*, January 20, 2003.

the countries, which, in fact, is also one of the components of the nuclear doctrine.

Hierarchies in Command and Control

The command and control system in a nuclear environment serves four purposes i.e. '(1) it ensures political control; (2) it provides measures to avoid accident or unauthorized use; (3) it provides early warning of an impending attack; and (4) it facilitates the decision making process'.¹¹

With these ends in view, Pakistan has created a military-controlled "National Command Authority" (NCA). Strategic Plans Division acts as secretariat for the two committees of NCA. These committees are: Employment Control Committee and Development Council. Employment Control Committee determines the shape and use of the nuclear arsenal. It is headed by the President and it includes the Prime Minister, important ministers, Chairman of the Joint Chiefs, the Services Chiefs, the Director General of the Strategic Plans Division, and other scientific and technical representatives as are required by the committee. The Development Control Committee oversees the development of nuclear and missile forces and related C4I systems. President Musharraf, who is still wearing the military uniform, is the Chairman of the committee. This committee is also military dominated. Its members include Chairman of the Joint Chiefs, the Services Chiefs and key scientific and technical advisers. It can be appreciated from the composition of the committees that despite a civilian government headed by Prime Minister Jamali has taken charge, final control of the nuclear buttons remains with President Musharraf. However, once Musharraf resigns

11 S. Hidayat Hasan, "Command and Control of Nuclear Weapons in Pakistan", http://www.acdis.UJUC.edu/homepage-docs/pubs-docs/S&P_docs/S&P_IX-1/command-con.

from the post of Chief of the Army Staff, the elected Prime Minister may have more say on the nuclear policy. But again the newly created National Security Council (NSC) that would oversee and probably override the Cabinet on security matters may not make much difference since there would be, as usual, military predominance in the NSC.

India's command and control system is different from Pakistani system, insofar as civil-military relations are concerned, and is predominantly (political) civilian controlled. India created the Nuclear Command Authority (NCA) in January 2003. The NCA comprises of a Political Council and an Executive Council. The Political Council headed by the Prime Minister "is the sole body which can authorize the use of nuclear weapons". It is presumed that the Political Council, in effect, would be the present Cabinet Committee on Security (CCS).¹² Another component (military) of Indian National Command Authority is the Executive Council (EC), which is headed by the National Security Advisor. The EC includes the top brasses of DRDO, that builds the delivery system, and the Atomic Energy Commission (AEC), which makes the nuclear cores, and is thus equipped with technical information for decision-making. The three services chiefs are also the members of the Council, which would ensure that the orders are carried out in case of a showdown. Herein comes the relevance of the Chief of Staff Committee (COSC), having one of the Chiefs as its Chairman, that would practically interface between the political component and military field level component of the nuclear decision making process. The Executive Council provides inputs for decision making to the NCA and executes directives given by the Political Council.

¹² Raja Mohan, "Nuclear Command System: Credible India" *The Hindu*, January 8, 2003 (Online Edition).

A significant development is the creation of Strategic Forces Command (SFC) in October 1998. Strategic Forces Command would work through the Chief of Staff Committee. The Cabinet Committee on Security (CCS), in January, 2002, while reviewing the operationalization of India's Nuclear doctrine, approved the appointment of a Commander-in-Chief, Strategic Forces Command, to "command and administer all Strategic Forces".¹³ But the practical question remains: is the established command and control system of both the countries good enough to ensure proper and restrained use of the nuclear arsenals, only as a last resort, in case of Pakistan, and, in case of India, as a second strike option? "The deployment of nuclear weapons would require elaborate command and control structures to prevent unauthorized or accidental use. At this stage, both India and Pakistan lack the technological capabilities and experience to put in place such structures".¹⁴

A Comparative Assessment

Islamabad makes it abundantly clear that, in the event of an unacceptable damage scenario like if Pakistan gets overwhelmed by India's conventional forces or gets bifurcated or a large chunk of its territories falls in the hands of the Indians, Pakistan retains the option of launching its weapons of last resort, i.e. the nuclear weapons. It makes no ambiguity in saying that, under the circumstances when the chips would be down, Pakistan would use nuclear weapons. India's declaration of 'no first use' concept apparently looks idealistic or pacifist. But on closer scrutiny, it turns out to be actually smoke-screened by certain ambiguities that might convey different

13 "Disarmament Documentation – Operationalization of Nuclear Doctrine", The Acronym Institute, http://www.acronym.org.UK/docs/0301/doc_06.htm.

14 Malecha Lodhi, *op.cit.*, p. 121.

signals in practical application. Rear Admiral Raja Menon asks: "Will India..... be committed to absorbing a nuclear strike in case deterrence fails?" He answers: "Hardly, because in the event that an intelligence warning of a definite nuclear strike is received the NCP (National Command Post) will have to consider, among other options, a first launch".¹⁵ Given India's phenomenal development in early warning airborne capabilities, specially after acquiring the Israeli airborne radar, New Delhi is likely to use nuclear weapon based on 'launch on warning' or 'launch through attack' strategies. A nuclear strike by Pakistan on Indian soldiers when they are launching offensive inside Pakistan would, in all probability, ask for Indian retaliation. That retaliation would be a massive punitive action. Some experts well versed in the lexicon of nuclear strategy tend to interpret this as massive retaliation, probably reminding America's similar concepts during the early days of the Cold War. Conventional bombing by Pakistan on Indian nuclear installations, in violation of mutually binding agreement, that might result in nuclear explosion or even radiation leaks would again, in all probability, invite Indian nuclear response.

If Pakistan, some day, develops chemical and biological weapons and plans to use those against India, New Delhi is also likely to respond it with nuclear weapons. "Whenever they (India) decide to use Nuclear Weapons against a state, they could just say that state X was planning to launch a major biological or chemical attack on India...The theory of unilateral pre-emptive strike could also be commissioned".¹⁶ American theory of pre-emptive strike would be borrowed by India at that critical time as India had already

15 Quoted in *Strategic Analysis*, IDSA, New Delhi, February 2001, pp. 1964-1965

16 Maj Gen (Retd) Jamshed Ayaz Khan, "India's Nuclear Doctrine", *Spotlight Perspective*, Kathmandu, Vol 22, No 45, May 23-May 29, 2003. (Email: spotlight@mos.com.up)

expressed its desire to use that theory against Pakistan immediately after the second Gulf War. China and Russia have signed no first use treaty that could be replicated by India and Pakistan. It is most unlikely Pakistan would agree to such a proposal, since Pakistan's basic rationale for developing nuclear weapons would get violated. Indian ambiguities in its doctrine can be seen more as rhetoric, since the ground reality would be: there would be no difference in the practical application of the doctrines, 'first use' or 'no first use'.

India's 'NFU' strategy is further complicated by Clause 2.5: "India will not resort to the use or threat of use of nuclear weapons against states, which do not possess nuclear weapons, or are not aligned with nuclear weapon powers" It is no doubt a 'NFU' pledge and India follows the same doctrine vis-a-vis non-nuclear states, as followed by other nuclear states. But the question is raised when the difference between a non-nuclear state and a state not aligned with a nuclear state becomes blurred. Bangladesh does not possess any nuclear weapons but it is, to some extent, more aligned to China, that is a nuclear power, for strategic and economic reasons. So in case of a nuclear showdown with China, Bangladesh might fall victim to India's nuclear onslaught, just for having good relations with China, although she has no capacity nor the will to go nuclear, much less possessing nuclear weapons. India needs to provide a clarification on this issue when it further refines its nuclear doctrine. However, Pakistan's doctrine in this aspect, both in letter and spirit, is unambiguous i.e. it would be first to use nuclear weapons whenever contingencies so demand.

Indian doctrine is further clouded by ambiguities in Clause 2.4 which reads "objective of India's nuclear forces is declared to be deterring the use and the threat of use of nuclear weapons by any state

or entity against India and its forces". A hypothetical scenario could be like this: the Kashmiri rebels get hold of Indian fissile materials or even nuclear weapons and they take shelter, say in Pakistani controlled Kashmir. Will India remain silent in not retaliating the terrorists sheltering in Pakistani territories? Entity, here, is believed to be a euphemism for terrorist gaining possession of fissile materials or even nuclear weapons. The doctrine is not explicit on this interpretation. Now herein the allegation that the Al Qaeda made contacts with Pakistani scientists for acquiring nuclear or fissile materials for making radiological bomb or a crude nuclear bomb merits consideration. Pakistan government arrested three Pakistani scientists in October 2001 for their connections with the Talibans when two of them admitted having had talks with Osama bin Laden.¹⁷ Reportedly, there could be a link between Al Qaeda and the Kashmiri insurgents. Now if it is accepted that leakage of fissile materials from Pakistani arsenal cannot be ruled out, then, in such a scenario, India's retaliation by nuclear strike cannot also be ruled out.

Linked to the above development, Pakistan's doctrine, although not formally articulated, claims that it would not transfer nuclear technology to any other country or entity like that of India's. However, Pakistan may, in a way, already be in violation of this commitment by having provided nuclear technology to Iran, North Korea, Libya, etc., as reported. International Atomic Energy Authority (IAEA) reported that Iran had established a large uranium enrichment facility which was obtained "from foreign intermediary in 1987". Iranians turned over the names of the suppliers and IAEA inspectors quickly identified the Iranian centrifuge as Pak 1-S, the model that Qadeer Khan developed in the early 1980s. Pakistan's

¹⁷ Abdul Qadeer Khan, [http://encyclopedia.thefreedictionary.com/Abdul Qadeer Khan](http://encyclopedia.thefreedictionary.com/Abdul+Qadeer+Khan).

denial of illicit technology transfer became untenable because on January 25, 2004, the investigators reported that Qadeer Khan and Mohammad Farooq, a high ranking manager of KRL, had provided unauthorized technical assistance to Iran's nuclear weapons programme in the late 1980s and early 1990s. Libyan government also disclosed that it had bought nuclear components from various black markets, including Pakistani scientists. In 2002 Wall Street Journal reported that Qadeer Khan's dismissal from KRL was dictated by US suspicions in his weapons technology transfer to North Korea.¹⁸ Some commentators even find Islamic connection in such transfer deal; they claim Qadeer Khan wanted the other Islamic countries to become nuclear powers, so that intense western pressure on Pakistan's nuclear power could be lessened.¹⁹

There is apparently another basic difference between the concepts of minimum deterrence of Pakistan and minimum credible deterrence of India. Both appear to show theirs is a minimalist approach. India's doctrine qualifies when it says it would provide assured retaliatory capabilities to inflict "unacceptable damage" on the aggressor once deterrence fails (Clause 2.3). Theoretically, Pakistan is meaning it would have its nuclear weapons to deter a conventional break-through by India and it makes no bones in saying that it would have the option of using nuclear weapons in such critical time that Stephen Cohen calls 'option enhancing policy' for Pakistan. Practically, when Pakistan is attacked with nuclear weapons, would it not have the reserve nuclear weapons left to retaliate? To a strategic thinker it is inconceivable to think that Pakistan would be left with no more nuclear weapons to go for

18 Abdul Qadeer Khan, [http://encyclopedia.thefreedictionary.com/Abdul % 20 Qadeer % 20 Khan](http://encyclopedia.thefreedictionary.com/Abdul%20Qadeer%20Khan).

19 "Pakistan's Nuclear Secret Scandal", *The Socialist*, 14 February 2004; <http://www.socialistparty.org.UK/2004/334/pp7.htm>.

retaliation or, when the contingency so demands, to go for a second strike. Some experts hold the view that the concept of MAD is irrelevant in South Asia, since India is or would be overwhelmingly superior in all dimensions, like the quality and quantity of the bombs, the delivery means, specially the sea-based means, and the early warning and intelligence means. The author, however, tends to believe that Pakistan would still have the means of providing a second strike and MAD is very much a reality in South Asian environment. Although India's vision is for triad-based arsenal, Pakistan's dyad system would also be quite robust in all probability. This is an appreciation that the author makes, which is also supported by many in concerned literature.

However, Indian nuclear armada is intended to be multidimensional with a strong punch and a long arm. Survivability is also a key factor in India's nuclear doctrine. For India, China is also an additional stronger nuclear rival - a factor that is even overriding. Within the concept of survivability, credible minimum deterrence, as spelt out by India, is enshrined. As an extrapolation of this concept, submarine-based nuclear weapons or forces are the most survivable nuclear force. However, *Jane's Intelligence Review* sees remote possibility of India going for nuclear submarines and cruise missiles as a possible delivery mode.²⁰ Again, India's *Strategic Analysis* journal prescribes that India has to go for a small number of Submarine Launched Ballistic Missiles (SLBMs), in order to ensure a credible deterrence, since submarines have the best survival potential.²¹ India's doctrine (Clause 3.1) declares, "India's nuclear forces will be effective, enduring, diverse, flexible and

20 *Jane's Intelligence Review*, May 2002, p.42

21 *Strategic Analysis*, IDSA, Delhi, February, 2001, p.1960

responsive.... These forces will be based on a triad of aircraft, mobile land-based missiles and sea-based assets". P.R. Chari, an Indian nuclear expert, makes the comment that although the triad issue is presently downplayed, it represents the ultimate ambition of the government. His optimistic estimate of SLBM equipped SSBN, although having several technical problems at the moment, becoming operational is 2010.²² India is reportedly planning or having a nuclear-powered submarine with Sagarika - a nuclear capable SLBM with a range of 200-300 kms.

An Indian strategist observes that, in order to survive a first strike, at least 50 to 60 percent of the nuclear arsenal is to be made invulnerable by being maintained as SLBMs.²³ This observation is borne out by the fact that aircraft on the runways, as delivery means, are extremely vulnerable. Land-based ballistic missiles are also vulnerable, although relatively less, unless those are solid-fueled and rail-mobile. More so, India has two frontiers to cover. This observation is further substantiated by the fact that India has very recently test-fired anti-ship cruise missiles that indicates technological know-how already available at India's disposal. Given a scenario where second-strike option is a possibility for both the parties, it is likely that both the parties would go for counter value targets, although Pakistan when using the weapon of last-resort, in a conventional defeat, for the first time is likely to go for counter force target. Broadly defined, counter value targets consist of the resources necessary for the sustenance of a modern society. India sees the use of counter value targets as a means of punishing the nuclear

22 PR Chari, "India's Nuclear Doctrine: Confused Ambitions", *The Non Proliferation Review*, Fall-Winter 2000, pp.131 and 135.

23 Brigadier DD Kapoor, "A National Nuclear Doctrine and Institutionalized Decision-Making Mechanism", *NDC Papers 1/2003*, National Defense College, India, p.3.

transgressions, which is otherwise enunciated in its doctrine. For Pakistan, its doctrine, as already shown in the earlier section, would follow a stage-by-stage approach to go for the counter value targets across the border inside India.

India's doctrine calls for the establishment of effective intelligence and early warning systems, including spaced based assets. India has very recently signed pacts with Russia and Israel to procure airborne early warning assets. To be specific, Israel is providing the early warning Falcon Radars and Russia is providing Illyushin-76 Transport Aircraft where the radars would be installed. This can be called a very sophisticated airborne early warning system even by western standard. Once this system would be operational, India would get the early warning of any missile or flying objects seen within 300 km inside Pakistan or in the north from China's central region. India is moving ahead with space-based research. India already has an impressive space-based remote-sensing programme, called the Indian Remote Sensing, currently in orbit with a resolution of 5.8 meters. India's space capabilities can contribute to strategic warning and, within the next two decades it is expected, it would have dedicated low-earth-orbit military reconnaissance satellites capable of providing visual, infrared and radar imagery.²⁴

Pakistan, it is believed, would also try to catch up as part of the vicious cycle. However, even if the race goes unabated, Pakistan would lag in sophistication because of money and the source of procurement. It, therefore, boils down that Pakistan is likely to use its tactical nuclear weapons like short range ballistic missiles or artillery guns when it gets overpowered conventionally by Indian

24 Brigadier DD Kapoor, *op.cit.*, pp.30-31.

offensive. Firstly, it fits very well to Pakistan's doctrine and, secondly, Pakistan lags in sophisticated early warning assets. Pakistan, because of its lag in sophistication in early warning assets, might get tempted or excited - in anticipation that India might go for its counter value targets especially its nuclear and other vital installations - to launch its tactical nuclear weapons as already shown. Pakistan's geography dictates, rather naturally, the use of tactical nuclear weapons. It is believed Pakistan has weaponized (nuclear) the short-range ballistic missile and artillery guns.

Pakistan's nuclear policy is centered on restoring strategic parity with India basically to offset the asymmetry it has with Indian conventional forces. Pakistan, however, de-linked this nuclear seesaw from signing the Comprehensive Test Ban Treaty (CTBT), which she earlier considered to sign. After India's detonation in 1998, New Delhi has, on its own, put a moratorium on further nuclear testing without, however, committing to sign the CTBT, since China factor would inhibit India to do so. Pakistan's case is now ambivalent, which practically implies that none of the parties, i.e. India, Pakistan and China, are likely to sign or ratify the CTBT. Pakistan is also unlikely to carryout further testing in case India maintains so. However, even if, in extremely remote possible scenario, India signs the CTBT, to which, it is assumed, Pakistan reciprocates, Pakistan is likely to invoke the supreme interests Clause as provided under Article 9 of the CTBT. This would be true for India too. CTBT is, therefore, unlikely to be accepted by the parties at least in the foreseeable future.

Indian nuclear doctrine (Clause 4.3) lays extraordinary emphasis on the survivability of its nuclear forces against surprise attacks by either Pakistan or China. When a crisis would be

impending, both India and Pakistan are likely to widely disperse their surface-to-surface missiles and related Transporter-erector Launcher (TELS) to offset, as far as possible, the effect of preemptive strike. Although any first tactical strike by either side is likely to hit the conventional forces, ultimately nuclear counterforce doctrine *per se* may turn ineffectual. The option left to the parties would be counter value targets. However, once the parties construct the hardened silos, then the doctrine of counterforce might come to the fore. India's desire to go extensively for SLBMs would again increase the possibility of counter value targets. Even, remotely sensing, Pakistan going nuclear for SLBMs cannot be ruled out.

Indian doctrine (Clause 4.1) pronounces credibility as a central principle to its nuclear deterrence. Deterrence is a factor of credibility and capability. Credibility implies basically the intent of the nuclear power like Pakistan or India to use it. Like Indian doctrine, Pakistan cannot also overlook the deterrence ingredients like sufficiency, survivability and keeping the arsenal operationally prepared at the level feasible or possible depending on the security alert state. For Pakistan, it would be all the more relevant and necessary, given India's larger strategic arsenal. Now this particular segment of the doctrine calls for going for solid fueled missiles and it can be strongly assumed that both the countries are already in possession of solid fueled missiles like Pakistan's M-11, or Shaheen I/Hatf 4 series and India's Agni-2. Now this is going to make the scenario more tensed. A highly unstable environment would emerge with both sides deploying SSMs on constant alert that might dictate both the countries to adopt 'Launch-on-Warning' strategy. This strategy would totally relegate India's NFU doctrine to irrelevancy. Again, this state of constant alert and 'Launch on Warning' strategy would vector both the countries to think more seriously to procure

anti-missile systems. There are already reports that India is planning to procure Israeli anti-ballistic missile like Arrows when Pakistan would also go all out to procure US Patriot like anti-ballistic missiles. For India negotiations are on to acquire the Russian SAM 300 and SAM-400 and Israeli Arrow anti-ballistic missile systems.²⁵

Any ballistic missile defense (BMD) systems could be seen as entirely incompatible with the concept of minimum nuclear deterrence, which is the declared nuclear posture of both India and Pakistan. This is, indeed, going to be a rationale for further improvement in terms of accuracy, range, yields, penetrability, etc. of the ballistic missiles that both the countries are continuously updating or modernizing. This might take trends towards South Asian National Missile Defense (NMD) or Theatre Missile Defense (TMD) concept that would be extremely disturbing and exacerbating. America's involvement with India in this development, in line with Taiwan where the U.S. is planning for TMD, cannot be altogether ruled out. However, America's recent acceptance of Pakistan as the most important non-NATO ally may, for the time being, put a halt on such development. Pakistan, a swing state, as it is called, has, again for the time being, become an important ally of the United States to fight the Taliban in Afghanistan. America's long term strategy, at least to some extent, gets offset due to its short-term objective of defeating the Taliban.

India's nuclear doctrine (Clause 5.6) mentions about space-based assets and its Clause 7.2 categorically maintains that although Indian deterrent is both minimum and credible, it would not accept any restraint on building its R & D capability. This overall seesaw

25 Maqbool Ahmad Bhatti, "Ballistic Missile Defense-China and South Asia", *IPRI Paper 6*, Islamabad, 2003, p.45.

puzzle would take the sophistication to a level unthinkable in the South Asian context. State of the art or cutting edge technologies are readily available when India has entered into defense collaboration with Israel and when India can afford those. There is no reason to underestimate Pakistan, since balancing is a natural phenomenon in international power politics. However, taking a lead right at the moment, if New Delhi's dedicated military reconnaissance satellites, if installed and as stipulated in its doctrine, provide daily coverage of Pakistan's military installations, then India would gain an edge over Pakistan in counterforce capability. The appreciation that the Pakistani nuclear installations are vulnerable to an Indian first strike would be further substantiated by this development. New Delhi's such spaced-based reconnaissance; intelligence and communication capabilities would also effectively counter Chinese conventional military threat. It then boils down to the situation that Pakistan's nuclear deterrence might lose its perceived punch and Pakistan might lose its confidence in China's ability to balance India. Thus the strategic balance between China-Pakistan and India might get affected.

India's doctrine (Clause 5.1) makes it explicitly clear that the authority to release nuclear weapons for use resides in the person of the Prime Minister or the designated successors. It is understood that India has developed a credible chain of succession, the main manifestation of which, it is believed, is the newly created post of Deputy Prime Minister, although the newly elected Congress-led (United Progressive Alliance) coalition government has not yet appointed one. However, in any scenario, the Cabinet Committee on Security (CCS) or equivalent apex political body, it is presumed, would be consulted before the Prime Minister/Deputy Prime Minister takes the crucial decision of launching the nuclear attack. Pakistan's nuclear doctrine also spells out that the command and control of

nuclear forces are vested in the highest political authority.²⁶ Understood theoretically in the context of Pakistan's present political dispensation, such decision should lie with the elected civilian Prime Minister. But the reality is otherwise. Pakistan's defence and foreign policies, specially in respect of India, even in the foreseeable future, would be crafted in the Pakistan's General Headquarters. As such, there are strong reasons to believe that in the event of a general war the command and control of nuclear weapons would, in all probability, lie with the persons in uniform. However, in the present dispensation it is the uniformed President who would control and finally push the button of nuclear weapons.

However, implications of both the systems would be the same. There is the possibility that the decisions to fire the nuclear weapons would be taken in haste since, when the crunch time would arrive, jingoistic feelings overplaying might affect rational decision making. A pertinent point may also be included here: "the threshold for graduating from a conventional to nuclear war would be considerably lower if there is no political leadership in the decision making loop to act as a cautionary trip wire". However, the armed forces should also be integrated in the decision making loop to enhance the credibility of nuclear deterrence; the armed forces should develop their confidence to flawlessly manage the nuclear weapons both during peace and war.²⁷ Robert McNamara, former U.S. Defense Secretary, said that the final decision-maker in case of nuclear exchange should not be a sun but a reflecting planet that would seek advice and recommendations before finally giving the order to launch the nuclear weapons. In the South Asian context,

26 Brigadier Firoz Hasan Khan, Quoted in *NDC Papers 1/2003*, National Defense College, India, p.10
27 Gurmeet Kanwal, "India's Nuclear Doctrine and Policy", *Strategic Analysis*, IDSA, New Delhi, February 2001, pp. 155, 209-210

Pakistan probably lacks the civilian component, while India lacks the military component of the decision making loop.

Reflections

It is a welcome initiative taken by the last Indian BJP-led government that there is a thaw in the strained relations between India and Pakistan. Pakistani government also seems to be sincere in normalizing relations with India, given many positive steps already taken to prepare the stage set for dialogue. Hopefully, the newly elected Congress-led National Progressive Alliance government would be more forthcoming to engage in dialogues. One could also take lessons from history; Thucydides regretted that the leaders of the warring Greek City states did not engage in prolonged dialogues, which created confusing signals, resulting in devastating Peloponnesian War. American geopolitics is also likely to put pressure on New Delhi and Islamabad to engage in serious dialogues at least to settle many other outstanding issues even if the Kashmir issue is set aside for the time being. Pakistan, on the dictates of the Americans, would have to control the cross border terrorism, as the Indians and the Americans call it; otherwise American campaign of fighting terrorism worldwide would be considered greatly unjustified. Pakistan cannot afford to go beyond the dictates of the Americans mainly because of the Al Qaeda factor, although there are opposite internal dynamics in the Pakistani politics as well. There is apparently a win-win situation for both Pakistan and India in the process of rapprochement. Linked to this, the nuclear network may take the shape that could also be tackled in the manner as visualized in the following paragraphs.

In the present context of overt nuclear development and complex security environment in South Asia, complete nuclear

disarmament that could be the idealistic goal for both India and Pakistan is rather a far-fetched or a utopian idea. It would be even difficult to go back to the 1990 situation where there was some doubt about the nuclear capability of both the nations. India's nuclear doctrine calls for an international treaty banning first use of nuclear weapons to which Pakistan would not agree for obvious reasons as already explored. Although there is an agreement between the two countries not to attack each other's nuclear installations, 'no war pact', as proposed by Pakistan, or 'no first use pact', as proposed by India, is unlikely to see the light of the day. However, the spectrum of certain confidence building measures (CBMS) could be widened. Cases in point could be: till the CTBT comes into force, Pakistan and India could formalize their unilateral moratorium into a binding bilateral arrangement and both the parties could pledge they would not operationally deploy their nuclear weapons and keep them in a non-deployed mode. Both the parties could even pledge not to carry out further test flight of the missiles; this is, however, an almost unachievable objective. It would be well nigh difficult for India to enter the nuclear club that has been one of the prime objectives for India to earn the status of a global power. Again, the non-proliferation regime (other than basically the P-5) would not accept either India or Pakistan. Countries like Japan, Germany and other non-nuclear EU countries would handle both Pakistan and India with suspicion and caution. However, real-politics in South Asia, which involves the US, Russia, China, etc., may not make much difference to that.

The stability-instability paradox would continue to operate in the South Asian environment. However, if par chance with the resolution of the Kashmir issue, which seems to be an intractable one, nuclear related tensions may subside greatly. Pakistan's nuclear programme is India-specific and if the miracle happens that the

Kashmir issue is resolved, Pakistan might support the nuclear free South Asia at least to gain diplomatic advantage.²⁸ However, the burgeoning Chinese nuclear capability would not totally eliminate nuclear race or the tensions in South Asia. Given such scenario, even the smaller South Asian nations have reasons to feel insecure and vulnerable to nuclear fall-outs, in case there is nuclear exchange. However, since the Kashmir issue is almost an intractable one and as power politics is very much at play in this part of the world, which also has the American and Chinese involvement, there is remote possibility that there would be a nuclear free South Asia. Although the situation involving India and Pakistan is problematic, as Ashley J. Tellis concludes, nuclear competition offers hope for stability. There is remote possibility that India would pursue any military option that would compel Pakistan to use its nuclear weapons.²⁹ This is also substantiated by Waltz who also concludes that 'the probability of major war among states, having nuclear weapons approaches zero'. He even goes to the extent of commenting that 'the measured spread of nuclear weapons is more to be welcomed than feared'.³⁰

There is a school of thought that advocates that, since India's emerging nuclear doctrine is meant primarily for deterrence and secondarily for retribution, in case deterrence fails it might dampen rather than accelerate strategic competition in South Asia.³¹ Deterrence, as highlighted in this paper, is very much at work. But it is debatable whether it will decelerate the nuclear competition,

28 Maqbool Ahmed Bhatti, *op.cit.*, p.43.

29 Ashley J. Tellis, "India's Emerging Nuclear Doctrine: Exemplifying the Lessons of the Nuclear Revolution", NBR Publications: NBR Analysis: Vol. 12, No. 2, May 2001.

30 Quoted in "The Nuclear Peace Fallacy: How Deterrence can Fail" by Richard L. Russell, *The Journal of Strategic Studies*, Frank Cass, London, p. 139.

31 "India's Emerging Nuclear Doctrine: Exemplifying the Lessons of the Nuclear Revolution – Executive Summary"; www.nbr.org/Publications/analysis/vol12no2/Summary.pdf view as html.

refinement and progress of nuclear weapons. Arms race would continue unabated without any possibility of going total de-nuclearized in the region that includes China also. Real-politics would not allow it to happen. Another school of thought claims nuclear weapons are political instruments of deterrence rather than military tools of war fighting. This probably does not hold good in South Asian environment, especially between India and Pakistan. Geographical realities for Pakistan and historical animosities existing between India and Pakistan, centering especially around Kashmir and emotional components ingrained in the psyche of the leaders and population of both the countries, make the environment a real nuclear flashpoint. The scenario gets exacerbated when we take a look at one of the clauses of Chinese nuclear doctrine that could affect South Asia in case of a showdown between India and China. China, as one Indian expert opines, has diluted its policy of NFU by emphasizing that this policy does not apply to its own territory. Since China claims Arunachal Pradesh of India to be its own territory, so Chinese first use of nuclear weapons, in case of a conflict with India, cannot also be ruled out.³² This trilateral nuclear scenario makes the matter even more complicated.

Conclusion

Both India and Pakistan are now nuclear powers. They are in the process of evolving doctrines and command and control mechanisms. There are definite ambiguities in the doctrines and the command and control mechanisms lack adequate full proof, fail-safe systems and certain other parameters, as highlighted in the paper. Doctrines of both the countries aim for continued improvement in

32 Gurmeet Kanwal, "India's Nuclear Doctrine and Policy", www.idsai-india.org/on-Feb-01.html. March 16, 2003.

terms of range, lethality, yield and better penetration of warheads of their nuclear arsenal. However, leaderships in both the countries appear to be coming forward, at the moment, to peacefully settle the scores between them. This is a welcome gesture but how far it can go is a poignant question. Because there are many outstanding and almost intractable issues, both major and minor, which, time and again, fluctuate the stability-instability paradox. A cautious and deliberate approach and restraint on the part of both the parties are the need of the day.

De-nuclearized South Asian Zone concept is almost an impossibility because of China's proximity to the region. Efforts should be on to keep both the belligerents engaged in dialogue, which can take care of the wrong signals that usually emanate in the South Asian culture and environment. This can be initiated regionally or injected by outside powers like the UN, the U.S.A, Russia, the EU, Japan, etc. It is also expected that a mixture of deterrence and cost-benefit analysis would induce good sense to prevail on the leaderships of both the countries to avoid a nuclear stand-off in the region. Matured and rational decision making to resolve the outstanding issues is not to be ruled out, since there are moves towards rapprochement due to internal national compulsions or international pressures being exerted especially by the United States. The process can get momentum by further widening the ambit of the CBMs, may be slowly and gradually, in political, diplomatic and military spheres and, may be, by keeping the seemingly intractable Kashmir problem at status-quo for sometime.

Annex 'A'**Draft Report of
National Security Advisory Board on
Indian Nuclear Doctrine****August 17, 1999**

1. Preamble
2. Objectives
3. Nuclear Forces
4. Credibility and Survivability
5. Command and Control
6. Security and Safety
7. Research and Development
8. Disarmament and Arms Control

Preamble

1.1. The use of nuclear weapons in particular as well as other weapons of mass destruction constitutes the gravest threat to humanity and to peace and stability in the international system. Unlike the other two categories of weapons of mass destruction, biological and chemical weapons which have been outlawed by international treaties, nuclear weapons remain instruments for national and collective security, the possession of which on a

selective basis has been sought to be legitimised through permanent extension of the Nuclear Non-proliferation Treaty (NPT) in May 1995. Nuclear weapon states have asserted that they will continue to rely on nuclear weapons with some of them adopting policies to use them even in a non-nuclear context. These developments amount to virtual abandonment of nuclear disarmament. This is a serious setback to the struggle of the international community to abolish weapons of mass destruction.

1.2. India's primary objective is to achieve economic, political, social, scientific and technological development within a peaceful and democratic framework. This requires an environment of durable peace and insurance against potential risks to peace and stability. It will be India's endeavour to proceed towards this overall objective in cooperation with the global democratic trends and to play a constructive role in advancing the international system toward a just, peaceful and equitable order.

1.3. Autonomy of decision making in the developmental process and in strategic matters is an inalienable democratic right of the Indian people. India will strenuously guard this right in a world where nuclear weapons for a select few are sought to be legitimised for an indefinite future, and where there is growing complexity and frequency in the use of force for political purposes.

1.4. India's security is an integral component of its development process. India continuously aims at promoting an ever-expanding area of peace and stability around it so that developmental priorities can be pursued without disruption.

1.5. However, the very existence of offensive doctrine pertaining to the first use of nuclear weapons and the insistence of some nuclear

weapons states on the legitimacy of their use even against non-nuclear weapon countries constitute a threat to peace and stability, and

1.6. This document outlines the broad principles for the development, deployment and employment of India's nuclear forces. Details of policy and strategy concerning force structures, deployment and employment of nuclear forces will flow from this framework and will be laid down separately and kept under constant review.

2. Objectives

2.1. In the absence of global nuclear disarmament India's strategic interests require effective, credible nuclear deterrence and adequate retaliatory capability should deterrence fail. This is consistent with the UN Charter, which sanctions the right of self-defence.

2.2. The requirements of deterrence should be carefully weighed in the design of Indian nuclear forces and in the strategy to provide for a level of capability consistent with maximum credibility, survivability, effectiveness, safety and security.

2.3. India shall pursue a doctrine of credible minimum nuclear deterrence. In this policy of "retaliation only", the survivability of our arsenal is critical. This is a dynamic concept related to the strategic environment, technological imperatives and the needs of national security. The actual size components, deployment and employment of nuclear forces will be decided in the light of these factors. India's peacetime posture aims at convincing any potential aggressor that:

- (a) any threat of use of nuclear weapons against India shall invoke measures to counter the threat: and
- (b) any nuclear attack on India and its forces shall result in punitive retaliation with nuclear weapons to inflict damage unacceptable to the aggressor.

2.4. The fundamental purpose of Indian nuclear weapons is to deter the use and threat of use of nuclear weapons by any State or entity against India and its forces. India will not be the first to initiate a nuclear strike, but will respond with punitive retaliation should deterrence fail.

2.5. India will not resort to the use or threat of use of nuclear weapons against States, which do not possess nuclear weapons or are not aligned with nuclear weapon powers.

2.6. Deterrence requires that India maintain:

- (a) Sufficient, survivable and operationally prepared nuclear forces,
- (b) A robust command and control system,
- (c) Effective intelligence and early warning capabilities,
- (d) Comprehensive planning and training for operations in line with the strategy, and
- (e) The will to employ nuclear forces and weapons

2.7. Highly effective conventional military capabilities shall be maintained to raise the threshold of outbreak both of conventional military conflict as well as that of threat or use of nuclear weapons.

3. Nuclear Forces

3.1. India's nuclear forces will be effective, enduring, diverse, flexible, and responsive to the requirements in accordance with the concept of credible minimum deterrence. These forces will be based on a triad of aircraft, mobile land-based missiles and sea-based assets in keeping with the objectives outlined above.

Survivability of the forces will be enhanced by a combination of multiple redundant systems, mobility, dispersion and deception.

3.2. The doctrine envisages assured capability to shift from peacetime deployment to fully employable forces in the shortest possible time and the ability to retaliate effectively even in a case of significant degradation by hostile strikes.

4. Credibility and Survivability

The following principles are central to India's nuclear deterrent:

4.1. Credibility: Any adversary must know that India can and will retaliate with sufficient nuclear weapons to inflict destruction and punishment that the aggressor will find unacceptable if nuclear weapons are used against India and its forces.

4.2. Effectiveness: The efficacy of India's nuclear deterrent be maximised through synergy among all elements involving reliability, timeliness, accuracy and weight of the attack.

4.3 Survivability:

- (i) India's nuclear forces and their command and control shall be organised for very high survivability against surprise attacks and for rapid punitive response. They shall be designed and deployed to ensure survival against a first strike and to endure repetitive

attrition attempts with adequate retaliatory capabilities for a punishing strike, which would be unacceptable to the aggressor.

- (ii) Procedures for the continuity of nuclear command and control shall ensure a continuing capability to effectively employ nuclear weapons.

5. Command and Control

5.1. Nuclear weapons shall be tightly controlled and released for use at the highest political level. The authority to release nuclear weapons for use resides in the person of the Prime Minister of India, or the designated successor(s).

5.2. An effective and survivable command and control system with requisite flexibility and responsiveness shall be in place. An integrated operational plan, or a series of sequential plans, predicated on strategic objectives and a targeting policy shall form part of the system.

5.3. For effective employment the unity of command and control of nuclear forces including dual capable delivery systems shall be ensured.

5.4. The survivability of the nuclear arsenal and effective command, control, communications, computing, intelligence and information (C4I2) systems shall be assured.

5.5. The Indian defence forces shall be in a position to execute operations in an NBC environment with minimal degradation;

5.6. Space based and other assets shall be created to provide early warning, communications, damage/detonation assessment.

6. Security and Safety

6.1. Security: Extraordinary precautions shall be taken to ensure that nuclear weapons, their manufacture, transportation and storage are fully guarded against possible theft, loss, sabotage, damage or unauthorised access or use.

6.2. Safety is an absolute requirement and tamper proof procedures and systems shall be instituted to ensure that unauthorised or inadvertent activation/use of nuclear weapons does not take place and risks of accident are avoided.

6.3. Disaster control: India shall develop an appropriate disaster control system capable of handling the unique requirements of potential incidents involving nuclear weapons and materials.

7. Research and Development

7.1. India should step up efforts in research and development to keep up with technological advances in this field.

7.2. While India is committed to maintaining the deployment of a deterrent, which is both minimum and credible, it will not accept any restraints on building its R&D capability.

8. Disarmament and Arms Control

8.1. Global, verifiable and non-discriminatory nuclear disarmament is a national security objective. India shall continue its efforts to achieve the goal of a nuclear weapon-free world at an early date.

8.2. Since no-first use of nuclear weapons is India's basic commitment, every effort shall be made to persuade other States possessing nuclear weapons to join an international treaty banning first use.

8.3. Having provided unqualified negative security assurances, India shall work for internationally binding unconditional negative security assurances by nuclear weapon states to non-nuclear weapon states.

8.4. Nuclear arms control measures shall be sought as part of national security policy to reduce potential threats and to protect our own capability and its effectiveness.

8.5. In view of the very high destructive potential of nuclear weapons, appropriate nuclear risk reduction and confidence building measures shall be sought, negotiated and instituted.