CENTRE FOR LAND WARFARE STUDIES

ISSUE BRIEF

No. 283(I) April 2021

Limited War and Nuclear Deterrence- Part I

Major General PK Mallick, VSM (Retd), was commissioned into the Corps of Signals. The General Officer has wide experience in CI Ops, Command, Staff and Instructional Appointments. The officer has interest in Electronic Warfare, Cyber Warfare and Technology. Currently, he holds the COAS Chair of Excellence at CLAWS.

"Nuclear weapons seem to be in almost everybody's bad book, but the fact is that they are a powerful force for peace. Deterrence is most likely to hold when the costs and risks of going to war are unambiguously stark. The more horrible the prospect of war, the less likely war is. Deterrence is also more robust when conquest is more difficult. Potential aggressor states are given pause by the patent futility of attempts at expansion".

—John Mearsheimer[1]

Key Points

- In a limited border conflict between two nuclear weapon power states, the use of nuclear weapons as a deterrent is a possibility.
- Out of nine nuclear power states, five are in Asia and are in some of the most conflict ridden zones.
- Nuclear armed states find it very difficult to maximise strategic leverage in a limited war.
- China and India are the only two countries who have a 'No First Use' policy.
- China has no deployed tactical nuclear weapons. China has developed the technology for missile defence, short-range ballistic missiles and low-yield warheads to be deployed if required.

Introduction

On 15 June 2020, in a brutal, savage skirmish, the People's Liberation Army (PLA) used fists, rocks, rods, baton, spikes, knuckle-dusters, nail-studded clubs and wooden clubs wrapped in barbed wire at a post at Galwan on the Indian side of Line of Actual Control(LAC) in Ladakh sector at an altitude of 4,250 meters. India lost a Commanding Officer of an infantry battalion and 19 other ranks. China did not divulge its casualty figures. There is a famous saying that no two nuclear-powered states have ever fought a war. William S. Lind, who developed Manoeuvre Warfare and Fourth Generation Warfare theories, is sceptical about two nuclear weapon capable countries ever to fight a conventional war. He writes, "What is

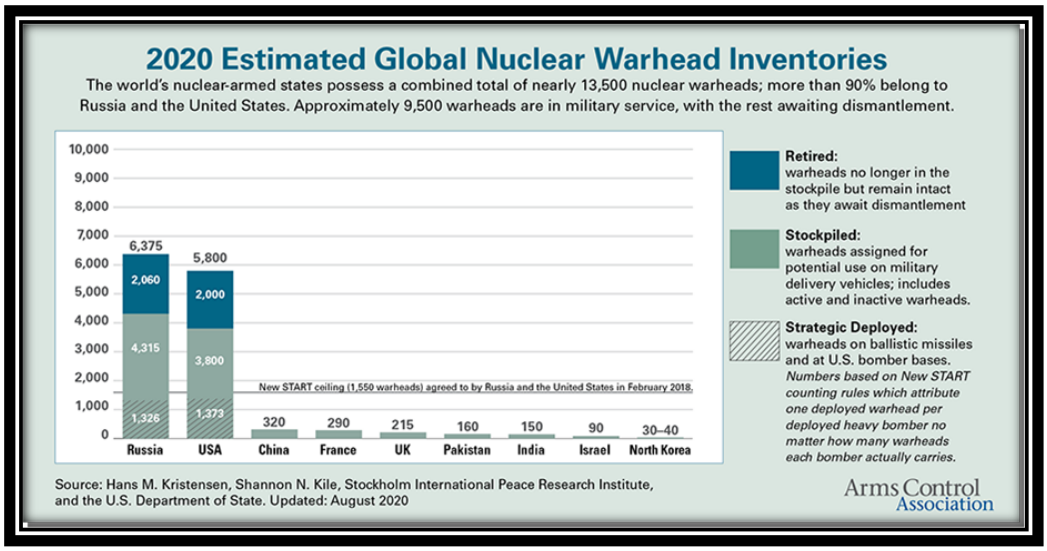
interesting about this skirmish is the weapons employed. Both India and China have sizable arsenals of modern weapons. They employed none of them. Instead, they fought with rocks and clubs. It certainly should draw the attention of anyone who studies where war may be going. Why did such a bizarre scenario unfold? Because both countries have nuclear weapons, it is probably true that neither India nor China wants war at this point.[2]

There are only two instances where two nuclear weapon holding nations fought, not an all-out war, but a limited war. In 1969 after Chinese forces attacked Soviet forces along their disputed border, the Soviet Union counter-attacked and indicated that it could attack China with nuclear weapons. Soviet nuclear threats induced Chinese leaders to initiate talks with the Soviets to end the armed clashes along the border.[3] China was a nascent nuclear power then. The other one was at well-known Kargil where India and Pakistan fought a limited war between May and July 1999. India was fighting to remove intruders from Pakistan Army within its own territory and never crossed the Line of Control (LoC) or International Border. In these conflicts, the nuclear-armed states knew the inherent nuclear risks but calculated that they could forcibly defend their interests without undue risk of large scale nuclear war.

A serious conventional conflict over the border dispute between two nuclear armed states cannot be ruled out. After the Galwan clash, India has changed the Rules of Engagement about the use of firearms. Both the countries will try to keep the zone of conflict limited and not an all-out war in all domains across the complete border. If there is a major catastrophe, do nuclear weapons come into play?

In addition to the traditional nuclear powers like US, Russia, China, France and UK, the emergence of India, Pakistan, Israel and North Korea as nuclear weapon power states has given new dimensions to any conflict where these states are involved. These new nuclear weapon powers are in some of the most volatile and conflict-ridden regions of the world.

Figure 1: 2020 Estimated Global Nuclear Warhead Inventories



Source: Nuclear Weapons: Who Has What at a Glance, Arms Control Association, August 2020 available at: https://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat

Nuclear weapons are known to be used as a deterrent. In the present scenario at Eastern Ladakh there is a need to analyse all these issues dispassionately.

The use of force by China in territorial disputes has been different since 1949. China went to war with India in 1962 and Vietnam in 1979. During the 1960s, the contested border with the former Soviet Union raised the possibility of nuclear war. China shares land border with 14 countries and had territorial disputes with almost every country. China claims to have resolved boundary issues with all countries except India and Bhutan. However, this may not be true.[4]

It would be sensible to examine the various aspects of nuclear weapons, its use in limited war scenario, China and India's views on nuclear issues and India's response options in the present crisis scenario.

Deterrence

Deterrence is the power to prevent, discourage, or dissuade a potential adversary from taking a particular course of action. It calls for a detailed understanding of a probable adversary's priorities, perceptions and strategies. It can be summed up by the equation: Deterrence = Capability x Credibility.[5] Today all states maintain their nuclear weapons for deterrence purposes.[6]

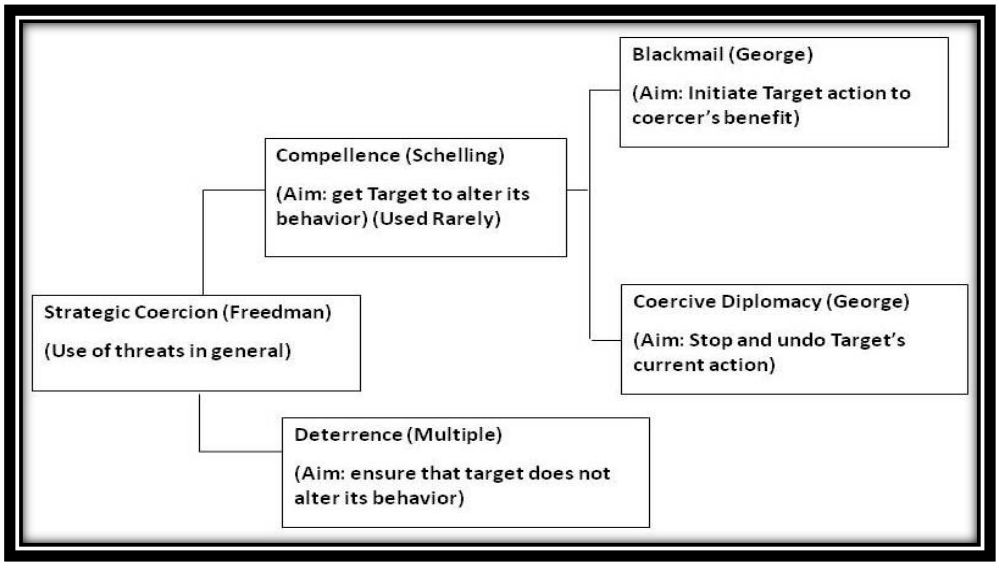
In his book, *Arms and Influence*, Thomas Schelling defines Deterrence as "the threat intended to keep an adversary from doing something". [7] John Mearsheimer defines Deterrence as "means persuading an opponent not to initiate a specific action because the perceived benefits do not justify the estimated costs and risks".[8]

Classically Coercion is the ability of military power to "hurt" by inflicting pain or punishment, and this ability confers "bargaining power" to the actor. The "power to hurt" exploits an enemy's needs and fears. The threat of the application of force has more bargaining power than the actual application. Force, once applied, has to be sustained till the adversary is coerced successfully.

Coercion includes both deterrence and compellence. Deterrence involves a threat to avert the adversary from starting something by fear of consequences. Compellence is a threat expected to make the adversary act — to do something or stop him from doing something. Glenn Snyder writes that deterrence "is the power to dissuade as opposed to the power to coerce or compel".[9]

Alexander George defined terms by eschewing the term compellence. [10] He broke the concept down into its offensive and defensive components. If the Coercer desires the Target to give up something of value, coercion happens *offensively*. George called this offensive compellence, blackmail.

Figure 2: Theoretical Structure of Coercion



Source: Adapted from Peter Viggo Jakobsen, Western Use of Coercive Diplomacy After the Cold War: A Challenge for Theory and Practice, New York, NY: St. Martin's Press, 1998, p12

Mearsheimer provided two examples of China's offensive compellence: its border dispute with India and the reclamation of Taiwan. He wrote, "Given the importance of these territorial disputes to China, coupled with the apparent difficulty of resolving them through… diplomacy, the best way for China to settle them on favorable terms is probably via coercion…to use military threats to force the other side to accept a deal largely on China's terms… It seems likely that coercion or the actual use of force is the only plausible way China is going to regain Taiwan".[11]

Key point here is that the success of deterrence is not determined by what we think about our forces and capability, but by what the potential enemy thinks. Does the enemy think own overall deterrence posture credible enough to deter him?

China's deterrence strategy is markedly different. Generals Peng Guangqian and Yao Youzhi, combine Schelling's definitions of deterrence and compellence within the Chinese term weishe. They write in the PLA textbook, *The Science of Military Strategy*, "deterrence plays two basic roles: one is to dissuade the opponent from doing something through deterrence, the other is to persuade the opponent what ought to be done through deterrence, and both demand the opponent to submit to the deterrer's volition". [12]

Military deterrence operations are defined as "using threats of use or the use of a low number of conventional missile weapons to frighten *(zhenshe)* the adversary, preventing the outbreak of war or controlling a series of combat actions." The deterrence campaign would be implemented "according to the needs of the political, diplomatic and military struggle." During a deterrence mission "conventional missile units will enter war preparations, organize actual military exercises *(shibing yanxi)* and launch actual missiles towards a defined area, to be seen and heard *(shixian zaoshi),* displaying our will and capability, forcing the adversary to not take rash actions or [to] show some restraint." The 2015 Science of Military Strategy notes that the most serious deterrence action China could take would be "military warning strikes to oppose a serious enemy provocation" using "strategic and operational missiles".[13]

China deters by forcing states to conclude that the cost of resistance remains too high or pressurising the target of its aggression to abandon offensive intentions. Chinese leadership views crisis as an avenue to achieve favourable political outcomes. China uses limited conventional aggression to pursue its deterrent objectives. Examples of such behaviour include ongoing artificial island construction in the South China Sea, the establishment of Air Defense Identification Zones(ADIZ) in the East and South China Seas and Chinese air encirclement drills around Taiwan.[14]

Nuclear-armed states today find it very difficult to maximise strategic leverage in a limited war because they cannot use their nuclear weapons in the same way as in a total war to coerce an adversary.

Strategic Deterrence. The Chinese perception of strategic deterrence has developed along with PLA capabilities. Today strategic deterrence (weishe) includes a broader definition, including all the components of "comprehensive national power".[15] Comprehensive national power includes armed forces, economic power, human capital, geography and natural resources, diplomatic influence, scientific and technological capabilities, political and cultural unity and National Will and Leadership. These serve to compel or deter opponents. The Science of Military Strategy 2005 edition notes, "deterrence calls for broadcasting to an adversary the existence of actual strength and the determination to use that strength to impact directly on his mentality in creating a psychological pressure to shock and awe the opponent." As per Gen John Hyten, former head of US Strategic Command, strategic deterrence should include both nuclear and non-nuclear weapons — that conventional, precision-strike munitions could offer that threat of force, previously made only by nuclear weapons, to deter an adversary.

Nuclear Deterrence. The purpose of Nuclear Deterrence is to convince a potential adversary that without risking significant damage to his own interests, he cannot expect to succeed with the military, cyber or other attacks. He has momentous choices to make since the end of escalation is a massive nuclear exchange from which no one can gain.[16] The Science of Military Strategy 2013 edition places nuclear deterrence within the broader context of a set of strategic deterrence capabilities that includes conventional, space and cyber warfare forces.

Example of Strategic Deterrence During and After the Cold War. A study entitled 'Project Vista' carried out in 1951 surmised that a combination of tactical nuclear weapons and small conventional forces could effectively defend Western Europe.[17] At the peak of the cold war, the North Atlantic Treaty Organization (NATO) countries felt vulnerable against mechanised forces heavy Soviet Army, particularly a conventional Soviet offensive through a strategically significant lowland corridor in Germany known as the Fulda Gap. That would have allowed Warsaw Pact forces to enter Western Europe. The threat of U.S. tactical nuclear use was envisaged as a critical safeguard against the Soviet attack. A nuclear first-use policy was the cornerstone of the North Atlantic Treaty Organization (NATO).[18]

NATO formally discarded the strategy of massive retaliation adopted earlier by Eisenhower administration. In December 1967, NATO adopted a new nuclear strategy known as "flexible response". NATO retained the option to use nuclear weapons first if its original response to a conventional attack did not prove adequate to hold the aggressor and to escalate to general nuclear war, if necessary, deliberately. In Indian nuclear doctrine, the term massive retaliation will figure in place of punitive retaliation intended initially. Some Indian theorists still believe it should be a flexible response.

However, things have changed dramatically. Today, the Russians want to use nuclear weapons deployed in the European theatre to counter NATO's conventional superiority, representing an existential threat to the country.

While Russia is not confident about its conventional forces' effectiveness, its recent nuclear doctrine permits the probable use of nonstrategic nuclear weapons during a local or regional conflict on its periphery. The doctrine does not explicitly state that Russia would use nuclear weapons to forestall such an attack, but it does reserve the right to use them in response[19]. When combined with recent Russian statements reminding others of the strength of Russia's nuclear deterrent, this doctrine indicates that Russia has increased the role of nuclear weapons in its military strategy and military planning.[20]

Western scholars and not the Russians call this an 'escalate to de-escalate' strategy. It may use a relatively low-yield nuclear weapon in an otherwise conventional conflict to halt further conventional escalation.[21]

Tactical Nuclear Weapons (TNW) as Source of Strategic Deterrence

According to the U.S. Department of Defense's publication Nuclear Matters Handbook, "Non-strategic or tactical nuclear weapons refer to nuclear weapons designed to be used on a battlefield in military situations. This is opposed to strategic nuclear weapons, which are designed to be used against enemy cities, factories, and other larger area targets to damage the enemy's ability to wage war".[22]

Non-strategic Nuclear Weapons. The difference between Strategic and Nonstrategic Nuclear Weapons is that the former has a strategic mission and the later has the tactical use of nuclear weapons. A strategic mission is directed against enemy targets with the purpose of progressive destruction and disintegration of the enemy's war making capacity and will to make war. Targets can be critical infrastructures like power, communication, transportation and key manufacturing systems, critical material, stockpiles etc. Strategic operations are planned to have a long term effect on the adversary and its armed forces.

The tactical use of nuclear weapons is, “the use of nuclear weapons by land, sea, or air forces against opposing forces, supporting installations or facilities, in support of operations that contribute to the accomplishment of a military mission of limited scope, or in support of the military commander’s scheme of maneuver, usually limited to the area of military operations”.[23]

Tactical nuclear weapons are planned to be used within a definite theatre of operations and against military and not civilian targets. Conventional-nuclear integration necessitates consideration of nuclear weapons' tactical application, specifically short of a strategic nuclear exchange.

Nonstrategic weapons are shorter range delivery systems with lower yield warheads that might attack troops or facilities on the battlefield. They can be nuclear mines, artillery, short, medium and long-range ballistic missiles, cruise missiles and gravity bombs.

The difference between a strategic and a nonstrategic nuclear weapon would be on the nature of the target or the repercussions for the conflict and not on the yield or delivery vehicle of the attacking warhead[24].

The difference between a strategic and nonstrategic nuclear weapon is inherently fuzzy. Strategic nuclear weapons can be used in a tactical way and vice versa. Any use of a nuclear weapon with a small yield and short-range would have far-reaching strategic consequences. Former U.S. Secretary of Defense James Mattis, in February 2018, while testifying in front of the House Armed Services Committee, said that he does not believe that “there is any such thing as a tactical nuclear weapon. Any nuclear weapon used any time is a strategic game-changer”.[25] His comments revealed that any use of nuclear weapons would expand and escalate the conflict beyond the immediate battlefield. According to an influential Chinese nuclear scientist Zhu Guangya, “The extent of the difference between strategic and tactical nuclear weapons is arbitrary, whether they are intercontinental or short-range nuclear weapons, once used their effects have no great difference”.[26]

China has no deployed tactical nuclear weapons. China has, however, developed the technology for missile defence, short-range ballistic missiles and low-yield warheads that it could deploy if it decided to adopt a first-use posture. Chinese leaders stress that a small, survivable nuclear force is sufficient for China's deterrence requirements. In 1984, the Second Artillery adopted a lean but effective *(jinggan youxiao)* nuclear force as the guiding principle for force development.[27]

Chinese experts disagree with the idea that limited nuclear war could be fought using only tactical nuclear weapons. They feel that introducing tactical nuclear weapons into a conflict would have the same strategic significance as introducing strategic nuclear weapons.[28]

Stability Instability Paradox. Glenn H. Snyder gave the concept of a "stability-instability paradox," in which states could be more tempted to engage in conventional wars and limited nuclear wars using tactical nuclear weapons because they were confident that their adversary did not want to fight a strategic nuclear war. Snyder also agreed the possibility that the fear of strategic nuclear war could induce states to be cautious and not encouraged to fight limited conventional and tactical nuclear wars.[29]

How China Views India's Nuclear Options

China has been modernising its nuclear forces mainly to deter a U.S. nuclear attack. China sees the United States, the only country that could pose an existential threat to China, as its primary nuclear rival. China perceives India as a regional rival. A recent survey by the Carnegie Endowment for International Peace[30] suggests that Beijing will view a rising nuclear India differently from the countries that tested its first nuclear weapons before China.

Out of the nine nuclear-armed states, only China and India have the stated commitment to a no first use policy. Both countries appreciate the role of nuclear weapons primarily as a political and not a military one. In the declared nuclear doctrines of both countries, nuclear weapons are meant for safeguarding the nation against nuclear blackmail and coercion. They do not support the idea of warfighting with nuclear weapons. The main stress of nuclear deterrence is to impose psychological fear on the enemy to deter conventional strikes. It involves increasing Chinese readiness to demonstrate resolve, *not* using nuclear weapons first or launching nuclear counterattacks.[31]

Neither country advocates tactical nuclear weapons. In keeping with their policy of NFU and keeping the conflict limited, it is highly doubtful that they would employ strategic nuclear weapons in border regions. The ranges of nuclear missiles held by both countries have sufficient reach so that they are not needed to be deployed close to the border. The Chinese bases with nuclear-capable missiles having the range to target India are far from the LAC. The chance of accidental nuclear escalation remains remote.

China's Superiority Complex against India. Chinese specialists do not think of India in strategic terms. Chinese officials have a deep and long-standing sense of superior power over India. They are convinced that China's governance system has and will continue to

outperform that of India's. Chinese experts believe that China will maintain and enhance its military and nuclear advantages over India.

Though China has nuclear asymmetry vis-à-vis the United States and Russia, Chinese interlocutors accept that China might be unwilling to accept Indian nuclear parity with China for cultural and historical reasons.

China does not think India is a threat. It is dismissive of India's great power pretensions, holds India's possession of nuclear weapons to be illegitimate and expects its own military-nuclear power advantage to grow rather than shrink in the future. Consequently, Indian actions are below China's radar and do not affect its strategic choices. U.S. academic Susan Shirk states flatly that China "simply does not take India seriously." Somehow, an impression is created by Chinese nuclear experts that "India is not on the radar screen".[32]
China-India nuclear relationship is not under scanner as few Chinese analysts see India as a threat. China thinks that India developed nuclear weapons to pursue deterrence and international prestige, not as a way to threaten China. China is confident that their country's rising power will discourage India from fighting China. They are pretty optimistic about the future of the bilateral relationship. To them, a nuclear conflict with India is almost unimaginable.

China's strategic outlook is not affected by India's nuclear capability and policy developments. Beijing does not attribute India's nuclear modernisation to an offensive military posture. China does not feel the need to respond robustly and immediately to India's progress. Chinese analysts believe that their policies do not affect India's nuclear policies, despite New Delhi's clear beliefs to the contrary.

Chinese experts believe that India's nuclear weapons program is primarily driven by prestige and the pursuit of international status and not by an offensive military agenda. Long-range nuclear missiles of India's are not seen as an immediate threat. Chinese experts feel that these weapons are for general deterrence and not for actual employment. Chinese strategists note Indian military advances. They often describe its technology, such as that embedded in its newly launched SSBN, as primitive. On the other hand, a Chinese academic noted, "There are always people in decision-making circles who worry, so if the nuclear threat from India increases, then some in China will argue for a response".[33]

China's unwillingness to understand India's threat perception and disinterest in addressing India's security concerns created a situation that Toby Dalton and Tong Zhao, of the Carnegie Endowment for International Peace, describe as "decoupled deterrence," where

"only the smaller or weaker power takes security seeking steps in response to actions by the bigger power, which are motivated by a different threat".[34] There is not much interaction between Indian and Chinese nuclear experts on the India - China nuclear relationship.[35] China has been stubborn in opposing India's admission into the Nuclear Suppliers Group *(*NSG*).*

Chinese specialists generally do not believe that India's development of more advanced military technologies, especially counter-space capabilities and cyber weapons, pose any near-term threat to China. However, they are concerned about Indian military technologies that may lower the threshold of a nuclear use. Some feel that prospective Indian battlefield nuclear missiles that would primarily counter Pakistan's tactical nuclear weapons could also be deployed against China. In a high stake conventional conflict such nuclear weapons are more likely to be introduced. In that case, the firewall between conventional and nuclear wars may be eroded. Chinese experts are very confident in their ability to maintain a comfortable, decade long advantage over India's nuclear and strategic military technologies.

Although they are watching the technical details closely, Chinese analysts dismiss the impact of India's development of advanced strategic technologies on China's security. Though Indian missiles, missile defence technologies and anti-satellite weapons have progressed markedly, Chinese experts claim that Beijing still has at least a ten year lead and that China's state centric defence industry will continue to outperform its Indian peer.

India's Progress in Nuclear Field. Indian nuclear capabilities are improving rapidly. The relative numerical and technological gaps are narrowing. India is currently pursuing technical capabilities beyond those strictly required for a minimum credible nuclear deterrent and may eventually give it some limited nuclear warfighting capabilities. The development of Indian nuclear forces has recently garnered increased attention from Chinese strategists, who previously discounted Indian military potential. India has a nuclear-armed submarine, tested an anti-satellite missile and reportedly begun developing a multiple-warhead capability for its ballistic missiles. India's rapidly evolving nuclear capabilities could be a potentially important driver of Chinese nuclear policy. India's rapid nuclear development confronts China with an entirely new situation: the rise of a new, neighbouring nuclear power that narrows the gap in capabilities with China and will ultimately confront Beijing with choices about whether and how to respond.[36]

Both Chinese media and the expert community closely followed India's April 19, 2012, test firing of the Agni-5 ICBM. Two analysts with the Nanjing Army Command Institute concluded that the Agni-5 test was an "important milestone" in India's development of a land-based

nuclear deterrent and illustrated India's desire for a "seat at the table" with the U.S. , Russia, and China. They also saw the test as an effort to "counterbalance" China's nuclear forces. An article from the China Academy of Military Sciences suggested the test was proof that India was "making up for deficiencies in Indian long-range ballistic missile development" and was a "first step" in realizing a "real combat capability and deterrent".[37] Technical analyses in Chinese defense journals concluded that the missile achieved initial success in hitting its target, thereby illustrating India's "new and improved" strategic nuclear deterrent.[38]

Standoff at Ladakh. Since June 2020, Indian Army has stood firm and showed tremendous grit, determination, resolve and tactical skill in extreme terrain condition against Chinese intrusion in Ladakh.

As per their NFU policies, neither country has openly threatened the other with the use of nuclear weapons. However, their nuclear status, an unspoken factor in the dispute, is always in the backdrop. India has observed that China is leveraging its growing economic and military power to advance its national interests, especially over disputed territory.

The risks of a nuclear flare-up may be increasing. In June 2020, both sides suffered casualties in the Galwan Valley clash. After that, both countries increased their military posture near the border. Now both sides have better transportation infrastructure and modern weaponry. Both have dual-use, conventional or nuclear weapon systems that could factor into a border conflict. These weapons could inadvertently fuel a deadly overreaction. A severe, high-intensity conventional war cannot be ruled out.

China was playing subtle psychological operations when Chinese media reported on Chinese H-6 bombers deployed to a "plateau region" for training exercises showing its superior conventional and nuclear military assets. [39]It is clear that China has considered the nuclear dimension in its security calculus in case of a military conflict with India.

Is India also signalling to China? Indian media is also reporting, "India test-fires 10 missiles in 35 days. It is not a coincidence".[40] The last word has not been said as yet. There is a simmering tension between India and China. In spite of a number of rounds of talk at different levels, the impasse at Eastern Ladakh has not been resolved. If China refuses to revert to the pre-April status quo ante in the present conflict scenario, can India take on China in a "limited war" to evict PLA from our territory?

According to the Belfer Centre report from Harvard University[41], China cannot make any substantial gain in this sector, although it may have an overall edge over India in military prowess. China will not be able to dominate India at every level of the escalation ladder.

India has key underappreciated conventional advantages that reduce its vulnerability to Chinese threats and attacks.

Chinese political and military leaders believe that when there is absolute certainty or near certainty of victory, then only military action should be taken. On the three principles for warfare, Mao Zedong wrote on the circumstances in which to employ military force: “It is the winning principle. We either do not fight them; or if we do choose to go into a fight, we must win. We should never fight a war for which we are not very well prepared and which we do not have full confidence of winning”.[42] It can be assumed with some apprehension that China has not taken any offensive action after the initial intrusion at Ladakh because of this reason.

India's limited military offensive to evict the PLA from especially strategically critical Depsang area is definitely an option. But escalation control mechanisms are not in place. Escalation dominance is “a condition in which a combatant can escalate a conflict in ways that will be disadvantageous or costly to the adversary while the adversary cannot do the same in return, either because it has no escalation option or because the available options would not improve the adversary’s situation”.[43] This can quickly escalate into a major all-out war. Can India afford to take this option with the present state of economy and pandemic showing no sign of getting under control?

During peacetime, many discussions are held within the strategic community and military circles about India’s capabilities in strategic leverage in terms of coercion, compellence, dissuasion, or deterrence against the Chinese in a limited war scenario. But when the enemy is at the gate, there is no clear articulation on India’s position on these issues. India’s deterrence policy should be eloquently expressed.

If we extrapolate the deterrence theories discussed earlier to East Ladakh's present crisis situation, we find that India’s aim is to either convince or coerce China to go back to pre-April 2020 positions. PLA has already come inside. The deterrence stage is over. China should be compelled to submit to India’s will. This can be achieved either by coercive diplomacy or the use of force. There are very few coercive tools available to India’s diplomats. Banning of Chinese apps, overt support to Tibetan dissidents, raising the issues of Uighurs in Xinjiang province of China and Hong Kong, recognising Taiwan etc. may not be enough to force China to yield to India’s legitimate demands. It is a tough choice for the limited use of force to compel China into pulling back.

In his memoir, "My American Journey," Colin Powell, the former U.S. Joint Chiefs Chairman, recalls a discussion with Madeleine Albright on Bosnia. "What's the point of having this superb military you're always talking about if we can't use it?" she asked him. Similarly, one can ask what is the use of India's Nuclear force if we cannot use it as a deterrent in case of a conflict scenario with China.

In case there is a complete stalemate and nothing tangible happens, is nuclear threat an option? This is a serious and complicated issue and needs detailed deliberations.

End Notes

[1] John J Mearsheimer, "Why We Will Soon Miss The Cold War", *The Atlantic Monthly*, Vol. 266 No. 2, Aug 1990, pp.35-50.

[2] William S. Lind, "The View From Olympus: A Glimpse of Future War Among Great Powers", July 8, 2020, available at: https://www.traditionalright.com/author/wslind/page/2/.

[3] M. Taylor Fravel, Strong Borders, Secure Nation: Cooperation and Conflict in China's Territorial Disputes , Princeton, N.J.: Princeton University Press, 2008), 215-16.

[4] By Bertil Lintner, Why China prefers to maintain inflamed borders, Asia Times, Nov 18, 2020 available at: https://asiatimes.com/2020/11/why-china-prefers-to-maintain-inflamed-borders/.

[5] Peters, Anderson and Menke, 'Deterrence in the 21st Century: Integrating Nuclear and Conventional Force', Strategic Studies Quarterly Winter 2018, available at: https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-12_Issue-4/Menke.pdf.

[6] Tami Davis Biddle, Coercion Theory: A Basic Introduction for Practitioners, Texas National Security Review, Vol 3, Iss 2 Spring 2020 | 94–109 available at: : http://dx.doi.org/10.26153/tsw/8864.

[7] Thomas Schelling, Arms and Influence (New Haven: Yale University Press, 1967), P69.

[8] John J. Mearsheimer, Conventional Deterrence (Ithaca: Cornell University Press, 1983), P14.

[9] Glenn H Snyder, "Deterrence and Power", *Journal of Conflict Resolution*, Vol. 4 No. 2, pp.163-178.

[10] Alexander L George, "Coercive Diplomacy," in The Use of Force: Military Power and International Politics, ed. Robert J. Art and Kenneth N. Waltz, 7th ed. (Lanham, MD: Rowman & Littlefield Publishers, 2009), P73.

[11] John J. Mearsheimer, The Tragedy of Great Power Politics [New York, NY: W.W. Norton & Co, 2014, P376

[12] Dean Cheng, Chinese Views on Deterrence, JFQ / issue 60, 1st quarter 2011 available at: https://ndupress.ndu.edu/portals/68/Documents/jfq/jfq-60.pdf.

[13] Fiona S Cunningham and M Taylor Fravel, "Dangerous Confidence: Chinese Views on Nuclear Escalation, International Security, Vol. 44 No. 2 (Fall 2019), pp. 61-109.

[14] Adam Taylor, How Congress Can Get Deterrence Right in the Asia-Pacific, The National Interest, September 23, 2020 available at: https://nationalinterest.org/blog/reboot/how-congress-can-get-deterrence-right-asia-pacific-169404

[15] Zhou Peng and Yun Enbing, "Developing the Theory of Strategic Deterrence with Chinese Characteristics," China Military Science, No. 3, 2004.

[16] Sir Jeremy Blackham and Sir Michael Graydon, No short cuts to deterrence in a world of hybrid warfare, 18 September 2020, available at: https://briefingsforbritain.co.uk/no-short-cuts-to-deterrence-in-a-world-of-hybrid-warfare.

[17] Lawrence Freedman, 'The Evolution of Nuclear Strategy', Palgrave Macmillan, New York, 2003

[18] Ankit Panda, 'No First Use' and Nuclear Weapons, July 17, 2018 available at: https://www.cfr.org/backgrounder/no-first-use-and-nuclear-weapons.

[19] Vladimir Dvorkin, Nuclear Weapons in Russia's Amended Military Doctrine, Carnegie Moscow Center, Moscow, January 22, 2015 available at: https://carnegie.ru/commentary/58774.

[20] Jessica Cox, Nuclear deterrence today, June 08, 2020 available at: https://www.nato.int/docu/review/articles/2020/06/08/nuclear-deterrence-today/ index.html.

[21] Ryan, K. (2020), 'Is 'Escalate to Deescalate' Part of Russia's Nuclear Toolbox?' Russia Matters, January 8, 2020 available at: https://www.russiamatters.org/ analysis/escalate-deescalate-part-russias-nuclear-toolbox .

[22] Hans M. Kristensen & Matt Korda (2019) Tactical nuclear weapons, 2019, Bulletin of the Atomic Scientists, 75:5, 252-261, DOI: 10.1080/00963402.2019.1654273 available at: https://doi.org/10.1080/00963402.2019.1654273.

[23] This dictionary and these definitions can be found on the DOD website at http://www.dtic.mil/doctrine/jel/doddict/index.html.

[24] U.S. Congress, House Committee on Armed Services, National Defense Strategy and the Nuclear Posture Review, Hearing, 115th Cong., 2nd session, February 6, 2018.

[25] Hans M. Kristensen & Matt Korda (2019) Tactical nuclear weapons, 2019, Bulletin of the Atomic Scientists, 75:5, 252-261, DOI: 10.1080/00963402.2019.1654273 available at: https://doi.org/10.1080/00963402.2019.1654273.

[26]Collected works for the eightieth birthday of academician Zhu Guangya (Mianyang: Yuanzineng chubanshe, 2004), P300.

[27] Fravel, *Active Defense;* Guowuyuan Xinwen, " Nian Zhongguo de Guofang [China's National Defense in , Beijing: Guowuyuan Xinwen Bangongshi, 2006).

[28] Fiona S. Cunningham and M. Taylor Fravel, Dangerous Conadence? Chinese Views on Nuclear Escalation available at: https://taylorfravel.com/documents/research/fravel.2019.IS.china.nulcear.escalation.pdf.

[29] See Snyder, "The Balance of Power and the Balance of Terror," in Paul Seabury, ed., The Balance of Power (San Francisco, Calif.: Chandler, 1965), p. 199.

[30] Toby Dalton and Tong Zhao, At a Crossroads? China-India Nuclear Relations After the Border Clash, Carnegie endowment for international peace working paper, Zhao August 2020 available at: https://carnegieendowment.org/2020/08/20/at-crossroads-china-india-nuclear-relations-after-border-clash-pub-82547#:~:text=Toby%20Dalton%20and%20Tong%20Zhao,edifice%20of%20China%2DIndia%20relations.&text=This%20event%20and%20ongoing%20tensions,competition%20between%20China%20and%20India.

[31] Wu Riqiang, *Issues in Sino-U.S. Nuclear Relations: Survivability, Coercion and Escalation*, United Kingdom Foreign & Commonwealth Office, June 21, 2013.

[32] Al Mauroni, "Tearing Down the Nuclear Firewall", War on the Rocks, 15 Oct 2019. Accessible at https://warontherocks.com/2019/10/tearing-down-the-nuclear- firewall/.

[33] Ibid

[34] Ramesh Thakur, Manpreet Sethi, India–China border dispute: the curious incident of a nuclear dog that didn't bark, Bulletin of the Atomic Scientists, September 7, 2020 available at: https://thebulletin.org/2020/09/india-china-border-dispute-the-curious-incident-of-a-nuclear-dog-that-didnt-bark/?utm_source=Newsletter&utm_mediu .

[35] Toby Dalton and Tong Zhao, At a Crossroads? China-India Nuclear Relations After the Border Clash, Carnegie endowment for international peace working paper, Zhao August 2020 available at: https://carnegieendowment.org/2020/08/20/at-crossroads-china-india-nuclear-relations-after-border-clash-pub-82547#:~:text=Toby%20Dalton%20and%20Tong%20Zhao,edifice%20of%20China%2DIndia%

20relations.&text=This%20event%20and%20ongoing%20tensions,competition%20between%20China%20and%20India.

[36] Eric Heginbotham, Michael S. Chase et al, China's Evolving Nuclear Deterrent Major Drivers and Issues for the United States, RAND Corporation,2017 available at: https://www.rand.org/pubs/research_reports/RR1628.html .

[37] N.32

[38] Fang Youpei, Chen Liling, Wang Liping, and Cai Yamei "Penetration Ability Analysis of Indian Agni Ballistic Missile", *Aerospace Electronic Warfare*, Vol. 29.

[39] Jack Mendelson, "NATO's Nuclear Weapons: The Rationale for 'No First Use' ", *Arms Control Today*. Available at https://www.armscontrol.org/act/1999-07/features/natos- nuclear-weapons-rationale-first-use.

[40] Shishir Gupta, India test-fires 10 missiles in 35 days. It is not a coincidence, TheHindustan Times, Oct 10, 2020 available at: https://www.hindustantimes.com/india-news/india-races-to-upgrade-its-armoury-fires-a-missile-every-4-days/story-UB5RQaMY4zVITlYbNFR8EL.html.

[41] O'Donnell, Frank and Alexander K. Bollfrass, The Strategic Postures of China and India: A Visual Guide, Belfer Center, March 2020 available at : https://www.belfercenter.org/sites/default/files/2020-03/india-china-postures/China%20India%20Postures.pdf.

[42] Mao Zedong, Selected military works of Mao Zedong Beijing: People's Liberation Army Soldiers Publishing House, 1981.

[43] Forrest E. Morgan, et al, Dangerous Thresholds: Managing Escalation in the 21st Century, Santa Monica, CA: RAND Corporation, 2008.

The views expressed and suggestions made in the article are solely of the author in his personal capacity and do not have any official endorsement. Attributability of the contents lies purely with author.

CENTRE FOR LAND WARFARE STUDIES (CLAWS)
RPSO Complex, Parade Road, Delhi Cantt, New Delhi 110010
Tel.: +91-11-25691308, Fax: +91-11-25692347, CLAWS Army No. 33098; Email: landwarfare@gmail.com
Website: www.claws.in

CENTRE FOR LAND WARFARE STUDIES

ISSUE BRIEF

No. 283(II) April 2021

Limited War and Nuclear Deterrence- Part II

Major General PK Mallick, VSM (Retd), was commissioned into the Corps of Signals. The General Officer has wide experience in CI Ops, Command, Staff and Instructional Appointments. The officer has interest in Electronic Warfare, Cyber Warfare and Technology. Currently, he holds the COAS Chair of Excellence at CLAWS.

Key Points

- India has fought conventional wars with its two nuclear-armed neighbouring countries.
- India's existing NFU is under pressure especially in the current situation.
- India has a nuclear triad —an arsenal of nuclear weapons, ballistic and cruise missiles.
- At the moment, unlike China India does not have dual use missiles.
- Deployment of Non-Nuclear Strategic Weapons like cyber, space, precise missiles as a deterrent may be considered.

Introduction

The first part deals with an historical overview of the evolution of India in the domain of Nuclear Deterrence. This part aims to study as to whether or not it would be feasible for India to use its nuclear power to defend its position in the long run and what impact will it have on India's National Security.

India's Stand on Nuclear Issues and its Options

Within 18 months of its 1998 nuclear tests, India outlined its nuclear strategy. It was based on 'credible minimum deterrence', adoption of a 'no first use policy' and the use of nuclear weapons for assured retaliation to inflict 'unacceptable damage' on any state that struck India first. Implicit in this strategy was the assurance that India would not pursue tactical nuclear weapons or a nuclear warfighting strategy.

India has two nuclear-armed neighbouring countries with whom India has fought conventional wars. Pakistan and China are dramatically different in terms of the nature and scope of their challenges and their relationships with India.

In view of India and China's present face-off at Ladakh, questions are raised about India's strategic deterrence options. India can signal capabilities and a doctrine that enables it to degrade targets deep inside Tibet and its continental heartland in eastern China. This includes India's missile capabilities including nuclear missiles and air force capabilities. To do this, India has to give a fresh look at her nuclear doctrine and missile capabilities.

However, there are many similarities in the nuclear postures of both India and China. Both have the policy of NFU. Both have focused on the economic metrics of national influence. Both have acted in ways that seem to reflect an appreciation for nuclear weapons' limited utility to achieve national goals.[1]

There is a distinct difference between India and Pakistan's nuclear doctrine. Pakistan, much weaker in conventional weaponry than India, has not adopted a NFU policy and has instead employed the implicit threat of nuclear escalation to deter conventional attack. As per an interview given by Lt Gen Khalid Kidwai, former head of the Pakistan Army's Strategic Plans Division, Pakistan wants India to believe that it will use its nuclear weapons for tactical military uses if certain thresholds are crossed. The threshold is kept low to deter meaningful conventional operations against Pakistan by the Indian Army.[2]

'No First Use' (NFU). India's official nuclear doctrine was released on 04 January2003. The doctrine emphasised that "India will use its nuclear power only in retaliation against a nuclear attack on Indian territory or on Indian Forces anywhere. In case of biological or chemical weapons India will retain the option of retaliating with nuclear weapons."

Some critics feel that India's NFU policy is a 'declaratory document'. In a scenario where India's strike corps makes a breakthrough in the Cholistan desert and advances deep inside Pakistan and Pakistan uses TNW, well within its territory, to check Indian advancing armour, will India then use massive retaliation to destroy any of the big cities of Pakistan? As a responsible nation, India does not give that impression. However, the fact is India's response is likely to be calibrated depending on the situation.

Bharat Karnad from the Centre for Policy Research in Delhi argues that the NFU is an unenforceable peacetime declaration. There is no way nuclear weapons can be designed only for a second strike. Shivshankar Menon, former National Security Advisor of India , described India's nuclear doctrine as one entailing "no first use against non-nuclear weapon

states". This implies that NFU does not apply to nuclear-armed powers like Pakistan or China[3].

Shivshankar Menon, in his book, *Choices* writes as to what can be India's operational nuclear strategy. He paints the following scenario: "There is a potential grey area as to when India would use nuclear weapons first against another NWS [nuclear weapons state]. Circumstances are conceivable in which India might find it useful to strike first, for instance, against an NWS that had declared it would certainly use its weapons, and if India were certain that adversary's launch was imminent. But India's present public nuclear doctrine is silent on this scenario". This suggests of enough ambiguity in India's nuclear doctrine to allow preemptive nuclear use by India, if nuclear use against it was imminent. [4], However, he ultimately concludes that declaring no first use is in India's strategic interests.

A growing number of India's senior defence officials have similarly argued for formally revising NFU. Lt Gen BS Nagal, former Commander-in-Chief of Strategic Forces Command, suggested that India should dump NFU in favour of a doctrine of 'ambiguity'. This requires detailed ISR that India presumably currently lacks. He further states that NFU implies probable large scale destruction in India". It allows the adversary to wear down India's capability. In the current mobile 'nuclear triad' environment, the probability of demolition of the adversary's strategic assets will be negligible in a second strike. This limits India's retaliatory nuclear strikes. [5]

There is a feeling that India is not averse to change its NFU policy. As remarked by Manohar Parrikar, former Defence Minister of India-"A lot of people say India has a no-first-use nuclear policy, but why should I bind myself? I should say I'm a responsible nuclear power, and I will not use it irresponsibly." He further clarified, "A 'written strategy' is a guideline, but the idea of being unpredictable had to be included in any such strategy.[6]"

During his visit to Pokhran for Indian Air Force's Fire Power demonstration in 2019, Defence Minister Rajnath Singh stated that India's adherence to the principle of 'no first use' of nuclear weapons is not sacrosanct.

Former foreign minister Jaswant Singh in 2011 to assert that the nuclear policy he had helped put in place after the 1998 tests stated, "very greatly in need of revision because events have long overtaken the situation that warranted the enunciation of the policy of 'no-first-use' or 'non-use against non-nuclear weapons,' 'credible deterrence with minimum force,' etc.. You cannot continue to sit in yesterday's policy. We need to re-address it[7]."

Manpreet Sethi argues that India should "focus on enhancing the credibility of its nuclear deterrence. Pakistan does not doubt India's capability, but its political will in mounting retaliation. . . . The doubt in the mind of the adversary appears to be whether India with a strategic culture of military restraint would find it prudent, and more importantly, morally acceptable to inflict damage and risk more on itself in response to a threat that is not itself mortal.[8] Therefore, many from India's strategic community urge shifting to an assured retaliation posture that does not depend on such a high political threshold.

Nuclear Capabilities

Hans M Kristensen and Matt Korda, with respect to India's nuclear stance remarks that, "while India's primary deterrence relationship is with Pakistan, its nuclear modernization indicates that it is putting increased emphasis on its future strategic relationship with China. All the new Agni missiles have ranges that indicate their primary target is China".[9]

Out of about 130 nuclear warheads, India has to keep a certain number for Pakistan in case of any conflict with China and vice-versa. This is in contrast with Pakistan's number of nuclear warheads, which are more than India's, and it has only one adversary in India.

Missiles

- ***Land based Ballistic Missiles.*** India possesses four types of land-based, nuclear-capable ballistic missiles that may be operational: the short-range Prithvi-II and Agni-I;the medium-range Agni-II, and the intermediate-range Agni-III, Agni-IV and Agni- V. Other long-range Agni missiles are still in the developmental stage. It is however not clear as to how many of these missile types India plans to keep in its arsenal. However, a good option for India would be to discontinue short-range missiles and keep operational only medium and long-range missiles to provide a mix of strike options for the future.
- ***Sea based Ballistic Missiles.*** India has ship-launched and submarine-launched nuclear capable ballistic missiles and is also developing a second submarine-launched ballistic missile for eventual deployment on a small fleet of nuclear powered ballistic missile submarines. India is developing its next generation of Nuclear-powered Ballistic Missile submarines (SSBNs) the S-5 class. To arm the SSBNs, India has developed one nuclear capable sea-launched ballistic missile and is working on another. The range of current K-15 (also known as Sagarika or B-05) submarine launched ballistic missile (SLBM) is 700 kilometres and the future K-4 SLBM is about 3,500 kilometres.

- ***Air launched Missiles.*** Before 2003, the Fighter-Bombers were India's first and only nuclear strike force till Prithvi-II nuclear capable ballistic missile was fielded. Despite considerable progress in building a diverse arsenal of land and seabased ballistic missiles, fighter aircrafts continue to serve a prominent role as a flexible strike force in India's nuclear posture. It is estimated that some Mirage 2000H and Jaguar aircrafts are modified for nuclear missions. The newly introduced Rafael aircrafts also are capable of carrying out nuclear missions.
- ***Sagarika.*** It is a submarine launched short-range ballistic missile (SLBM) and is also known as K-15/B-05. The two stage solid propellant driven 700-750 km range missile is 10.8 m long, 0.8 m wide and has a launch weight of 5,500 to 6,300 kg. It can carry both conventional and nuclear warhead weighing 500 to 800 kg.
- ***Shaurya Hypersonic Missile.*** The 750 kilometre land based missile is the land based variant of the Sagarika SLBM, and has the capability to undertake a nuclear role given its stated payload capabilities. W Selvamurthy of the DRDO stated that, the Shaurya's biggest advantage is its mobility and concealability "It cannot be detected by satellite imaging. It will surprise our adversaries and strengthen our strategic defence". [10] The DRDO tested its nuclear-capable Shaurya missile on October 03, 2020. The missile is able to achieve speeds of 7.5 Mach and has a range of about 800km.

Cruise Missiles

- ***BrahMos.*** India is developing cruise missiles like the BrahMos and Nirbhay. Cruise missiles are designed to be fired at long ranges away from their targets so as not to be exposed to enemy retaliation. BrahMos, a joint venture with Russia, is a short-range ramjet supersonic cruise missile that can be launched from land, aircraft, submarines or ships, It is one of the world's fastest missiles and can reach speeds of up to Mach 2.5 to 2.8. It is capable of carrying payloads of 200–300 kilograms. It is capable of accommodating a nuclear payload. However, BrahMos is meant for India's conventional force structure, and not for the strategic forces. As it uses Russian-made engines, therefore, India was not permitted to use it to carry nuclear weapons due to the Missile Technology Control Regime (MTCR) restrictions. India has now become a member of MTCR.

  Having gained access to the MTCR, India can use that access as leverage versus China. China is not a member of the MTCR but would certainly like to be a member. On the other hand, India, would like to join the Nuclear Suppliers Group (NSG). China blocked India's accession to NSG in June this year. India and China can

organise a quid pro quo trading Indian NSG membership for Chinese admission to the MTCR.[11] The BrahMos is stealthy, fast and extremely difficult to shoot down. The cabinet committee on security in August 2020 approved the raising of a new regiment to be outfitted with an advanced version of the BrahMos developed for mountain warfare at the cost of more than Rs 4,300 crore to be deployed in Arunachal Pradesh. The Indian Army has presently three regiments equipped with two earlier versions of the BrahMos.[12]

Immediately the People's Liberation Army Daily complained, "India deploying supersonic missiles on the border has exceeded its own needs for self- defence and poses a serious threat to China's Tibet and Yunnan provinces. The deployment of BrahMos missile is bound to increase the competition and antagonism in the China–India relations and will have a negative impact on the stability of the region[13]."

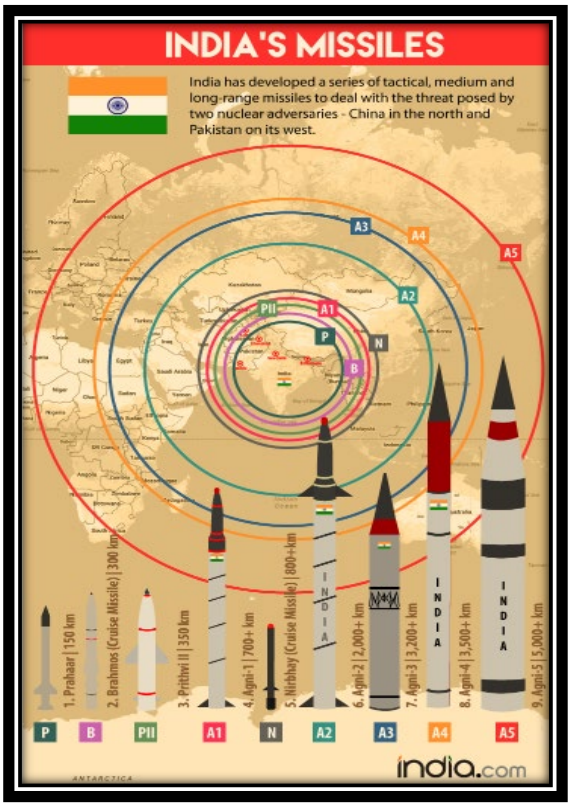
The Indian Navy has BrahMos missiles in some of its vessels. Two destroyers and six of its frigates have a single BrahMos launcher, whereas three of its destroyers have twin launchers. Ships with more BrahMos on board are under construction. In 2013 a submarine launched version of the BrahMos was successfully tested. Submarine launched BrahMos could be launched from close to the target without being detected.[14]India has specially modified the Su-30MKI strike fighters to launch the BrahMos from the air. In June, 2020 the first successful test flight was carried out. India now plans to convert forty Su-30MKIs to carry two hundred BrahMos.

India will introduce smaller (only three thousand pounds), faster (Mach 3.5,) and stealthier (smaller Radar-Cross Section.) next generation BrahMos-NG shortly. Testing of a scramjet powered hypersonic BrahMos II missile, capable of the speed of about Mach 7, is also on the pipeline. The Indian Army, in May 2015, successfully tested a version of the BrahMos with steep diving capability. This would permit it to take out targets hidden behind the mountain ranges.[15]

- ***Nirbhay.*** India is developing a ground launched subsonic cruise missile —the Nirbhay. The Ministry of Defence described Nirbhay as "India's first indigenously designed and developed long-range subsonic cruise missile having 1,000 kilometre range and capable of carrying up to 300 kilogram warheads".[16] The DRDO confirmed in early 2020 that additional variants of the Nirbhay cruise missile, including submarine-launched and air-launched versions are in the early stages of planning and development.[17] There are rumours that the Nirbhay is dual-capable. However, this has not been confirmed.

- ***Prahaar.*** Prahaar is a tactical, battlefield weapon and is likely to have high maneuverability, very high acceleration and excellent impact accuracy.[18] It has been developed to target the enemy command and control centres, armoured formations and bunkers. However, the missile, at 42 centimetres in diameter, is remarkably slim and light and may not be able to carry any of India's existing nuclear warheads.[19] It is likely to replace all existing Prithvi SS-150 missiles that are now deployed by the three Missile Groups of the Indian Army's two Field Artillery Divisions.

Figure 1: Graphical Depiction of the ranges of India's various missiles



Source: https://www.india.com/news/india/brahmos-prithvi-dhanush-agni-sagarika-shaurya-prahaar-nirbhay-list-of-indian-missiles-and-their-features-2670834/

- ***Dual -Use Missiles.*** If the present simmering border issue at Ladakh escalates into a larger conventional military confrontation, in that case, there are additional inadvertent escalation risks from the co-location and the challenges of distinguishing between nuclear and conventional missiles. Most Indian and Chinese dual capable military assets are short, medium and intermediate-range weapons. The strategic, long-range missiles are exclusively armed with nuclear weapons. China's theatre range, dual-capable weapons include the DF-21 and DF-26. India's dual-capable systems include fighter bomber aircraft; short range missiles like Prithvi, Prahaar, Agni-I, and the medium-range Agni-II ballistic missile. If the dual- use missiles and

their associated equipment and facilities are destroyed in a conventional attack, then the attacked party is not able to decipher as to whether the strike was aimed deliberately at its nuclear assets or was it a response in-kind, or a direct nuclear retaliation. Some Chinese analysts are worried that theatre anti-ballistic missile systems deployed by India along the LAC could weaken the efficacy of Chinese medium-range missiles deployed in Tibet.[20]

Recent Developments

Post Galwan incidence, there has been a flurry of activities by DRDO on testing of various missiles. The DRDO has fast-tracked its missile programmes. Details of some of the recent testing are given below. [21]

- ***Hypersonic Technology Demonstrator Vehicle (HSTDV).*** The DRDO has successfully demonstrated the hypersonic air-breathing scramjet technology with the HSTDV flight test from the Dr. APJ Abdul Kalam Launch Complex at Wheeler Island, off the coast of Odisha, on 07 September 2020. Capable of achieving speeds over Mach 6, the HSTDV is an unmanned scramjet demo aircraft. The HSDTV is not a weapon itself but can be used as a carrier for long-range cruise missiles and in launching satellites.[22]
- ***Prithvi-II.*** The nuclear capable Prithvi-II missile was tested on 24 September 2020 from the Integrated Testing Range near Odisha. The surface to surface, short-range ballistic missile is believed to have a range of 400km. The missile can carry a weapon load of 500kg.
- ***BrahMos Missile.*** The LACM was introduced into service in 2007. It has an autonomous launcher than can fire three missiles at three different targets or several other combinations. Surface to surface supersonic LACM BrahMos was tested from the Integrated Testing Range on 30 September 2020. The Naval version of the BrahMos missile was test fired from the INS Chennai on 17 October 2020. It hit its target in the Arabian Sea with pinpoint accuracy. The air-launched version of the supersonic cruise missile was fired from a Sukhoi fighter aircraft that took off from a frontline airbase in Punjab on 30 October 2020. It is reported that the IAF is integrating the missile into over 40 of its Sukhoi jets.
- ***Supersonic Missile Assisted Release of Torpedo (SMART) System.*** Indigenously developed SMART torpedo system was successfully flight tested on 05 October, 2020 from Wheeler Island off the coast of Odisha. The SMART system, used in Anti-Submarine Warfare, takes off from a warship or a truck based coastal battery like a

typical supersonic missile before releasing its torpedo into the water as it approaches a submerged enemy submarine. It allows the Indian Navy to extend the range of its torpedoes significantly.

- ***Rudram.*** On 09 October 2020 India's first indigenous anti-radiation missile, Rudram, was successfully flight-tested on a Sukhoi-30 MKI fighter. The missile can be used to wipe out targets that use radio-frequency waves like enemy radars, communication sites and destroy the enemy's surface-to-air missiles.

Analysis

The concept of no first use was designed to limit the mutual fear of a first strike. It was championed by the Soviets, notably under Brezhnev, but has never been adopted by the Western camp.[23]

China's mantra of the nuclear doctrine of NFU is, "Never initiate the use of nuclear weapons, whatever the circumstances". The concept suited Chinese interests because Beijing lacked second-strike capability and still holds a relatively limited nuclear force. As this has changed drastically with China's triad, Beijing's no-first-use claim may linger as a mere diplomatic asset like what it was for the Soviet Union during the Cold War. China now is in a position to engage in limited nuclear options in the event of a conflict with corresponding changes in its doctrine.[24]

In the present circumstances, China has no reason to raise the nuclear flag. The current nuclear doctrine of China is in its favour. China has not changed its pledge of NFU. China has relied on threats to use space, cyber and conventional missile weapons first to maximise its strategic leverage to coerce its adversaries. Why and how does China substitute space, cyber and conventional missile weapons for nuclear weapons as sources of strategic leverage in limited wars is a question that needs further study.[25]

Armed Forces prepare for all possible contingencies in a conflict. Is the present doctrine of NFU helping India's cause in Ladakh? If China takes any further offensive operations, will India be tempted to alter its policy in an attempt to restore deterrence? In that case should India formally renounce its no-first-use policy?

Given China's superior logistics and geostrategic advantages of the higher ground, India's doctrine should be based on deterrence by punishment. It is not in India's interest to engage China at all levels in the entire spectrum of violence. India can negate asymmetry by politically leveraging its strategic capabilities and doctrine. A credible and thoughtfully

signalled nuclear doctrine correlated to a joint theatre wide conventional doctrine is a must for India to stave off any Chinese adventurism.

Recommendations and Way Ahead

Some of the nuclear issues which need to be discussed thoroughly by the strategic community are as follows:

- There is a feeling that the "evolution of India's posture…is still driven almost entirely by technical bureaucracies and scientists" and that "civilian political leadership, particularly the Prime Minister's Office, has exercised far too little discipline over these bodies".[26]
- Indian Armed Forces feel that there is a vast difference between testing weapons and missiles in test conditions and firing weapons in battle scenarios. Press releases from the DRDO following missile test launches almost always claim perfect performance. There is no independent public audit to examine whether these claims are valid. At the end of the day, it is the armed forces who have to be satisfied with the efficacy of the equipments.
- Lt Gen Nagal former C-in-C of SFC argues that "our programme for weapons delivery platforms has not fully delivered at the pace required by national security, and a detailed performance audit is required to address the shortcomings and deficiencies, and bring about structural changes in the way strategic programmes are organized. . . . Other aspects for future development are improved guidance systems, miniaturisation, bigger [ballistic missile submarines], anti-satellite capability, space based sensors, earth penetrating systems and host of new technology required to overcome protection/ defensive systems. . . . The surveillance and monitoring system for 360 degree coverage is a technological challenge which requires massive infrastructure and sensors in space, land, air and sea".[27]
- Lt Gen Nagal has been scathing in his remarks: "A unique feature of nuclear deterrent signalling has been the role of Defence Research and Development Organisation (DRDO) scientists in speaking on strategy, development and employment philosophy. The statements by the scientists also prematurely release information on delivery systems, which later become embarrassing when time lines are overshot/ delayed".[28]
- Nuclear weapons and nuclear command, control and communications, need to be continuously modernised to remain relevant. India needs to have technology to refine

weapons designs short of explosive testing, such as the Dual Axis Radiographic Hydrodynamic Testing facility. This has not been forthcoming.[29]

India wisely has put non-nuclear missiles with the respective services and nuclear-tipped missiles with Strategic Force Command units. This helps in escalation control mechanisms. Deployment of SFC units will give a very clear signal to the adversary. However, there are issues like command and control of nuclear-powered submarine with nuclear tipped SLBM. Though the non-nuclear missiles are now under respective services, who gives order to their deployment and firing? In this joint operation scenario who is controlling the weapon systems? For example, say, use of Brahmos. In our Northern border, if Brahmos have to be fired, whether ground based or air launched missiles are to be used, who decides?

- **Selection of Personnel.** SFC in equivalent to an operational command of Army, Navy or Air Force. The C-in-C of SFC in a rotational appointment from the three services. Before taking over C-in-C's appointment of SFC the officer may not have handled anything remotely connected with nuclear. The nuclear field is a highly complicated technology intensive arena. The C-in-C must have some previous experience in at least one or two-star rank.The same applies to SFC units and their personnel. Over a period of time the personnel issue of SFC units has been finalised, keeping in view the technical nature of the job, security aspect etc. This should not be tinkered with the proposal of all arms and services personnel.
- **Signalling.** Lt Gen. B.S. Nagal is right on the money when he wrote: “Deliberate and well-thought out nuclear signalling policy should be put in place to communicate with the nation and send the desired message to the adversary(s). The political leadership must speak on select occasions on India’s nuclear policy to display the resolve and credibility without conveying an aggressive posture. An open paper on national security including nuclear policy should be issued periodically. This will invite debate and suggestions and enrich the policy[30].”In case some signalling on nuclear issue has to be done, then it should be done centrally with very well co-ordinated moves among government agencies, media and think tanks.
- **Deployment of Non-Nuclear Strategic Weapons.** India has strong incentives to develop non-nuclear strategic force postures. It has established cyber forces and acquired conventionally tipped cruise missiles. With the type of talent in the ICT sector available in the country, India must take giant steps to develop Non-Nuclear Strategic Weapon capabilities. China already has got an asymmetrical advantage in this field. India has the ability to bridge the gap quickly.

- **Policy on Dual- Use Missiles.** Lt **Gen** Nagal has clarified that SFC does not have dual-use missiles, meaning SFC units are equipped with only nuclear weapons.[31] From time to time, there are statements in the media about dual-purpose missiles. The capability of missiles carrying nuclear warhead depends on the dimension of the missiles. This issue should be clarified.

Conclusion

China has no land threat from anybody. China has no reason to raise the nuclear flag in a conflict situation with any country in general and India in particular. India, on the other hand has framed the role of its nuclear weapons for deterrence purpose. In the present situation, India seeks to rely on a range of responses along the diplomatic, information, military and economic spectrum rather than escalate to nuclear signalling.[32]

Can India leverage its nuclear weapon capability for an effective deterrence in a limited war scenario? One may conclude that existing nuclear doctrine is adequate. But that conclusion should be arrived at after an intense discussion between all the stake holders.

End Notes

[1] Vipin Narang, Nuclear Strategy in the Modern Era: Regional Powers and International Conflict (Princeton University Press, 2014), pp. 94-153.

[2] "Transcript of Gen Khalid Kidwai's conversation with Peter Lavoy", Carnegie Endowment for International Peace, 23 March 2015. Accessible at : http://carnegieendowment.org/files/03-230315carnegieKIDWAI.pdf).

[3]Shivshankar Menon, "The Role of Force in Strategic Affairs", National Defence College Golden Jubilee, New Delhi, 21 October 2010. Accessible at http://www.mea.gov.in/Speeches-Statements.htm?dtl/798/Speech+by+NSA+Shri+ Shivshankar+Menon+ at+NDC+on+The+Role+ of+Force+in+ Strategic+Affairs

[4] Shivshankar Menon, "Choices : Inside the Making of India's Foreign Policy", Penguin Books, 2018.

[5] B S Nagal, "Checks and Balances," FORCE Guest Column. Accessible at http://forceindia.net/guest-column/guest-column-b-s-nagal/checks-and-balances/.

[6] "India Should Not Bind Itself to a 'No-First-Use Nuclear Policy', says Manohar Parrikar", Scroll.In, 10 November2016. Accessible at https://scroll.in/latest/821251/india-should-not-binditself-to-a-no-first-use-nuclear-policy-says-manohar-parrikar

[7] Jaswant Singh,Revise 'No-First-Use' N-Policy, Indian Express, March 16, 2011 Also see Jaswant Singh, Transcript of Lok Sabha Debate, March 15, 2011, P114 available at: http://164.100.47.132/debatestext/15/VII/z1503-Final.pdf

[8] Manpreet Sethi, "Counter Pak Nuke Tactics", The New Indian Express, 24 July 2014. Accessible at https://www.newindianexpress.com/opinions/2014/jul/24/Counter-Pak-Nuke-Tactics-639317.html

[9] Hans M Kristensen & Matt Korda "Indian nuclear forces", Bulletin of the Atomic Scientists, 2020. Accessible at 76:4, 217-225, DOI: 10.1080/00963402.2020.1778378

[10] TS Subramanian and YMallikarjun, "India Successfully Test Fires Shourya Missile, The Hindu, 24 September 2011Accessible at https://www.thehindu.com/sci-tech/science/india-successfully-testfires-shourya-missile/article2482010.ece.

[11] Sebastien Roblin, China Hates India's Fast and Sneaky Brahmos Missiles, The National Interest, March 6, 2020 available at : https://nationalinterest.org/print/blog/buzz/china-hates-indias-fast-and-sneaky-brahmos-missiles-130472

[12] Rezaul H Laskar, "China warns India against deploying BrahMos missile in Arunachal Pradesh", The Hindustan Times, 23 August 2016. Accessible at https://www.hindustantimes.com/india-news/china-warns-india-against-deploying-brahmos-missile-in-arunachal-pradesh/story-ui0psBJZ3WOvn3aJzLCqiJ.html

[13] Sebastien Roblin , China Hates India's Fast and Sneaky Brahmos Missiles No way to counter it?, The National Interest, March 6, 2020 available at : https://nationalinterest.org/blog/buzz/china-hates-indias-fast-and-sneaky-brahmos-missiles-130472

[14] Robin Sebastien, "China Hates India's Fast and Sneaky Brahmos Missiles: No Way to Counter it ?" , The National Interest, 06 March 2020. Accessible at https://nationalinterest.org/blog/buzz/china-hates-indias-fast-and-sneaky-brahmos-missiles-130472

[15] Akhilesh Pillalamarri, "Indian Fighter Jets to Fire World's Fastest Cruise Missile", The National Interest, 22 June 2015. Accessible at https://nationalinterest.org/blog/the-buzz/indian-fighter-jets-fire-worlds-fastest-cruise-missile-13161

[16] Evan Braden Montgomery and Eric S Edelman, "Rethinking Stability in South Asia: India, Pakistan, and the Competition for Escalation Dominance"", Journal of Strategic Studies , Vol. 38 , Issue 1-2, 2015. Accessible at https://www.tandfonline.com/doi/abs/10.1080/01402390.2014.901215

[17] Hans M Kristensen & Matt Korda (2020) Indian nuclear forces, 2020, Bulletin of the Atomic Scientists, Vol76, Issue4, 2020, PP217-225 available at : https://www.tandfonline.com/doi/full/10.1080/00963402.2020.1778378?scroll=top&needAccess=trueN.15

[18] T S Subramanian and Y Mallikarjun, "'Prahaar' Missile Successfully Test-Fired", The Hindu, 21 July 2011. Accessible at https://www.thehindu.com/news/national/prahaar-missile-successfully-testfired/article2279166.ece.

[19] Debabrata Mohanty, India successfully test fires surface-to-surface Prahar missile, Indian Express, July 21, 2011 accesisble at https://indianexpress.com/article/india/latest-news/india-successfully-test-fires-surfacetosurface-prahar-missile/

[20.] Yue Luo and Ke Xu, "The Indian Factor in the Evolution of Global Anti-Missile Structure: An Analysis of China's Policy Choice Against Such a Backdrop", Asia and Africa Review, Vol. 3, 2013, pp.17-21.

[22] Ministry of Defence, "DRDO successfully flight tests Hypersonic Technology Demonstrator Vehicle", Press Information Bureau (PIB), 07 September 2020. Accessible at https://www.pib.gov.in/PressReleasePage.aspx?PRID=1651956#:~:text=Defence%20Research%20and%20Development%20Organisation,the%20coast%20of%20Odisha%20today

[23] Donald Stoker, "What's in a Name II: Total War and Other Terms that Mean Nothing," Infinity Journal, Volume 5, Issue No. 3, fall 2016, pages 21-23.

[24] Donald Stoker "What's in a Name II: "Total War" and Other Terms that Mean Nothing," Infinity Journal, Volume 5, Issue No. 3, Fall 2016, PP21-23.

[25] James M Acton, "Is China Changing Its Position on Nuclear Weapons?," The New York Times, April 18, 2013 available at: https://allthingsnuclear.org/dwright/more-confusion-about-china

[26] Vipin Narang, Five Myths about India's Nuclear Posture, The Washington Quarterly, 2013, 36:3, PP143-157, DOI: 10.1080/0163660X.2013.825555

[27] BS Nagal, Checks and Balances, Force available at : http://forceindia.net/guest-column/guest-column-b-s-nagal/checks-and-balances/

[28] Ibid.

[29] Bharat Karnad, "Special Issue- Two Decades of the Pokhran Tests: India and the Global Nuclear Order", Strategic Analysis, Vol. 42, Issue 3, 2018 , 08 May 2018, pp. 181-193.

[30] Ibid.

[31] India and Nuclear Asia: Forces, Doctrine, and Danger, The Stimson Center, January 17, 2019 available at : https://www.stimson.org/wp-content/files/EventTranscript_1_17_IndiaNuclearAsia.pdf

[32] Manpreet Sethi, "Why India and China Haven't Used the 'N' Word Throughout the Ladakh Crisis," The Wire, August 3, 2020.

The views expressed and suggestions made in the article are solely of the author in his personal capacity and do not have any official endorsement. Attributability of the contents lies purely with author.

CENTRE FOR LAND WARFARE STUDIES (CLAWS)
RPSO Complex, Parade Road, Delhi Cantt, New Delhi 110010
Tel.: +91-11-25691308, Fax: +91-11-25692347, CLAWS Army No. 33098; Email: landwarfare@gmail.com
Website: www.claws.in