

How Much Is Enough? Nuclear Expansions in South Asia

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For three years, Pakistan has single-handedly – and successfully – blocked the Conference on Disarmament (CD) in Geneva from discussing an effort that would put a cap on fissile materials. Consequently, within diplomatic circles, Pakistan has acquired the reputation of an obstructionist that opposes all efforts towards this end. In defending itself, Pakistan cites the threat from an Indian invasion across the border which drives it towards its current preparations for fighting a tactical nuclear war. Sub-kiloton warheads are expensive: in spite of a yield 10-15 times lower than a “city-buster”, they consume 3-4 times more fissile material. This fact could be important for a country that has limited fissile stocks and explains Pakistan's opposition to the FMCT. Pakistan also says that the US-India nuclear deal [1], [2] along with older issues related to verification problems and existing stocks, is its reason for opposing the FMCT.

Pakistan's current arsenal, said to be the fastest growing in the world, is said to be around 100-120 warheads. The number that it “must have” is generally left open by defense analysts; explicit numbers are almost never found. It is therefore of some interest to consider the figures used by a retired Pakistani air force officer. His logic is reproduced below:

“We assume that destruction of two enemy cities will meet our minimum deterrence needs and each city would need to be hit with five nuclear bombs, that our delivery means have a 50 percent probability of successfully penetrating the enemy defenses, and finally the enemy has the capability of destroying 50 percent of our nuclear assets in a pre-emptive first strike. Now with these sets of assumed determinants, the number of weapons needed to ensure minimum deterrence would be:

- Number of bombs required to take out two cities at 5 per city: 10 bombs
- After factoring in enemy's 50 percent intercept capability: 20 bombs
- Enemy can take out 50 percent of our force in a pre-emptive strike. So we would need 40 bombs to maintain our minimum deterrence under the given set of assumptions.” [3]

This relatively modest figure of 40 bombs then jumps to a staggering one thousand under a different set of assumptions made by the same writer:

“Let us now assume that the enemy has enhanced his offensive and defensive capability. Now, he can intercept 90 percent of our nuclear weapons because of better NMD system. He also has increased his offensive potential through greater number of nuclear weapons with enhanced accuracy and now can take out 90 percent of our nuclear arsenal in a pre-emptive strike. Now the fresh calculation would be:

- Number of bombs required to take out 2 cities at 5 per city: 10 bombs
- After factoring in enemy’s 90 percent intercept capabilities: 100 bombs
- After factoring in 90 percent of enemy’s ripostes capability: 1000 bombs”[4]

A degenerative logic is apparent above. Tweaking input parameters arbitrarily generates arbitrary outputs – you can get the result you want, and yet it can be made to appear as the end product of a logical process.

Similar leaps of logic can be found on the Indian side.

Like Pakistan, India refuses to set an upper limit on its arsenal. Instead, it enhances Pakistani fears by advertising advances on its side. DRDO’s announcement [5] in 2012 that “Delhi and Mumbai, the two most vital metros of India, have been chosen for ballistic missile defence shield” feeds into Pakistani fears. But most technical experts will agree that missile defense is a technical impossibility because of 4-6 minute warning times, easily manufactured decoys, and various electronic counter measures. To attack with missiles is relatively easy but to defend specific targets against missiles in the mid-course and terminal phase is very hard. A report of the American Physical Society says that destroying missiles in even the (much easier) boost phase is dauntingly difficult.[6]

The China-India Race

As India races to compete with China for overall influence and power, it increasingly outdistances its historical adversary – Pakistan. A minimal Indian deterrence against China naturally puts India much above Pakistan.

Marking a quantum escalation, India began sea trials in July 2009 of its 7000-ton nuclear-powered submarine, the Arihant, with an underwater ballistic missile launch capability. The submarine, now operational, is the first in a planned fleet of five and is to be supplemented

by hunter-killer nuclear submarines. In 2012 India commissioned the nuclear-powered attack submarine INS Chakra. The launch in August 2013 of the indigenously developed aircraft carrier INS Vikrant, expected to be operational by 2018, gives India a blue-water navy with the ability to project power well across the oceans. India's DRDO has claimed some successes: after the maiden test of the 5000km Agni V, DRDO's head, V.K. Saraswat, noted that several Agni variants could eventually be mated with multiple independently targetable re-entry vehicles (MIRVs), or multiple nuclear warheads. On May 10, 2012 he explained: "Where I was using four missiles, I may use only one missile. So it becomes a force multiplier given the damage potential."^[7]

A booming Indian economy, which has only recently slowed down, has fed India's rapid militarization. With only a sixth of India's budget, Pakistan obviously cannot match India weapon for weapon. Nevertheless, historically every Indian move somehow finds a counter move. Predictably, news of India's new weapon systems is badly received in Pakistan. What should it do? Tariq Osman Hyder, a former diplomat who headed Pakistan's delegation in 2004-2007 talks with India on nuclear and conventional CBMs, gave his answer:

"What should Pakistan do? First of all develop its own second strike nuclear submarine based capability on which it must have given some thought having been long aware of the Indian program. Secondly, equip its conventional submarines with nuclear-tipped cruise missiles. Thirdly, as the Russian assistance to India for this project, and the lack of any objection from the US or any other party has shown that both leasing of nuclear submarines and technology for their production are completely compatible with the global non-proliferation regime, Pakistan should explore such possibilities."^[8]

The long and short is that the Pakistan-India nuclear race is open-ended with the sky as the limit. Of course, this is not particular to the subcontinent. Escalation lies in the nature of the nuclear beast: the Cold War saw the US warhead count reached a peak of 31,255 in 1967.^[9] Just one of these bombs – even one on the smaller side – dropped on a city can easily kill a hundred thousand and the fallout would render the city uninhabitable for years.

Praful Bidwai, an astute observer of the Indian nuclear scene, sums up South Asia's current situation as follows:

"Today, both countries refuse to restrict themselves to any specific number of weapons. Similarly, for delivery vehicles and 'flexible response' is kept undefined. Tactical nuclear war-fighting, once considered escalatory and way beyond minimal deterrence, is said to have been incorporated into current Indian military doctrine...Taken together, Indian military options and Pakistani planning would seem to ensure that any major India-Pakistan conflict would inexorably lead to the use of nuclear weapons."^[10]

Where the Real Danger Lies

It is not the increasing number of NWs but certain specific strategic doctrines that pose the greatest nuclear danger. A new Indian paradigm for dealing with Pakistan, and punishing it for a future Mumbai-style attack by Pakistan-based jihadists, was invented and embodied into the Cold Start doctrine. [11] This calls for quick, salami-slicing thrusts into Pakistan while learning to fight a conventional war under a “nuclear over-hang” (by itself an interesting new phrase, used by General Deepak Kapoor in January 2010).

WikiLeaks revealed that in a classified cable to Washington in February 2010, Tim Roemer, the US ambassador to India, described Cold Start as “not a plan for a comprehensive invasion and occupation of Pakistan” but “for a rapid, time- and distance-limited penetration into Pakistani territory”. [12] He wrote that “it is the collective judgment of the US Mission that India would encounter mixed results”. Warning India against Cold Start, he concluded that “Indian leaders no doubt realize that, although Cold Start is designed to punish Pakistan in a limited manner without triggering a nuclear response, they cannot be sure whether Pakistani leaders will in fact refrain from such a response”.

The Pakistani response to an Indian attack has been predictable: prepare for tactical nuclear war. Imagine that Mumbai-II were to happen and tensions were once again to rise to some dizzying level. What are possible Pakistani responses to an Operation Parakram, Cold Start, or whatever? One expects the following rungs of escalation each leading to the one above, or perhaps, even skipping to the next one:

1. Strong statements by Pakistani army and political leaders, similar to those made during previous crises, with open threats that a nuclear showdown is imminent.
2. Mobilization of a few missiles and nuclear-capable aircraft. This would be detectable by India's RISAT's (Radar Imaging Satellite) which, while in a 540 mile high orbit, uses a synthetic aperture that gives it day-night all-weather reconnaissance capability.[13] Thereafter one expects India to respond with a similar mobilization. But Pakistan would have to rely on China for intelligence information as it does not have such satellite capability.
3. An underground nuclear test by Pakistan. This would be a powerful signal that nuclear temperatures have sharply increased. Such a test is certainly technically possible, and one presumes that Pakistan has already prepared an appropriate site (probably again in Balochistan). Since Pakistan has not signed the CTBT, this would not violate any international law. The Indian response could be tit-for-tat: those Indian scientists long spoiling for a chance to fine-tune their thermonuclear weapons will get their wish.[14]
4. Air-dropping a bomb on some uninhabited desert area within Pakistan. The psychological impact would be enormously larger than that of an underground test; the flash would be

detected by aircraft and satellites, and the mushroom cloud would carry radioactivity long distances in directions determined by winds prevailing at that time. The fact that even desert areas are not completely uninhabited would be a consideration, but would not rule out this option. It is unlikely that India would follow suit (although underground testing will remain an option). Pakistan's action would arguably not be a violation of any NFU (No First Use) principle [15]. However, massive alarm would be created by this action and Pakistan might be seen to have nuclearized the conflict. Thereupon India would seek to have a total international boycott imposed upon Pakistan.

5. Use of tactical nuclear weapons against invading Indian troops. The development of short-range battlefield nuclear weapons such as Nasr and Abdali suggests that Pakistani planners have accepted this as a plausible scenario and thus worth preparing for. A Pakistani Inter-Services Public Relations (ISPR) press release in May 2012 stated: "Nasr, with a range of 60 km, carries nuclear warheads of appropriate yield with high accuracy, shoot and scoot attributes. This quick response system addresses the need to deter evolving threats." [16] The Indian response to a TNW attack could be: a) An all-out attack using conventional weapons and a sea-embargo of Pakistani ports, b) A demonstrative nuclear attack on some military target within Pakistan. If the latter, then there would be a real question of whether further escalation can be limited.

Although much is made of TNW's, they may not be very effective militarily – invading front-line combat units can be expected to be sufficiently well dispersed and mobile so as to not make good nuclear targets. [17] But the very fact that nuclear weapons were used – even if on Pakistani soil rather than Indian – would have broken a taboo and brought the danger level to the very highest level; cities on both sides would now stand in mortal danger.

What Should Be Done?

India, in competition with China, is unlikely to pay the slightest attention to Pakistani fears and slow down the speed with which it is acquiring new weaponry, both conventional and nuclear. But strong visceral feelings on both sides suggest that the chance of an Indian-Pakistani clash is far greater than that of an Indian-Chinese clash. Starting January 2013, shelling across the Line of Control in Kashmir has continued in spite of leaders from both countries promising that this would end. Pakistan, in spite of being under attack from Pakistani Taliban, continues to support jihadists who wage war against India.

In a situation where the Pakistani state is steadily weakening and the military's unity has been badly undermined, at the very least Indian leaders must refrain from aggressive statements that could inflame an already bad situation and cause hard-liners to rise still further. It is being advocated by many in India that Pakistan could be punished and hurt, but

not enough to start a nuclear confrontation. Some suggest that India should formally declare that a nuclear attack on Indian troops, even if inside Pakistani territory, should be treated as a signal that nuclear war has begun. By doing so, they hope to dissuade Pakistan from using its tactical nuclear weapons. But this is surely playing with fire. In the fog of war, and with safe command and control of mobile weapons being much more difficult than for fixed ones, there is much that can happen.

After the first weapon has been used, can anything be done to prevent catastrophe and prevent all available ones from being used? Given the extreme passions that would then rage, it is difficult to be optimistic. But, anticipating that such a situation could arise, in these calmer times, India and Pakistan would do well to give some thought to the management of a nuclear conflict should it start for whatever reason.

At the very least both countries need to declare a policy of proportionate response. Rather than deliberately cultivating a “madman image”, it is better to go for “an eye for an eye, a tooth for a tooth” policy. For this reason, nuclear crisis diplomacy must be kept alive. If India-Pakistan communication breaks down at some point in a crisis, third-party interlocution is going to be vital for averting a disaster. This is a complex issue: until Musharraf’s departure, Pakistan’s nuclear program has been relatively transparent to the U.S. although India’s had been relatively opaque. Pakistan had an abiding faith in the U.S. to keep the Pakistan-India conflict from getting out of control in spite of the fact that the U.S. did not come to its aid in the 1965 and 1971 wars. India, on the other hand, had long presumed that the U.S. would give primacy to Pakistan and so distrusted it. But events over the last two decades have moved India towards, and Pakistan away from the U.S. While this has certainly reduced the importance of U.S. diplomacy in mediating conflicts, this is still the most effective means available.

Endnotes:

[1] *Washington Post* (2011), ‘New estimates put Pakistan’s nuclear arsenal at more than 100’, 31 January 2011.

[2] Bajoria, Jayshree & Pan Esther (2010), ‘The U.S.-India Nuclear Deal (backgrounder)’, *Conference on Foreign Relations*, November.

[3] Hussain, Jamal, Air Commodore (Retd) (2003), *Deterrence in a Nuclear Environment*.

[4] *Ibid.*

[5] *Times of India* (2012), ‘Delhi, Mumbai selected for ballistic defence missile shield’, 24 June 2012.

[6] Report of the American Physical Society Study Group on Boost-Phase Intercept Systems for National Missile Defense: Scientific and Technical Issues 2004, *Rev. Mod. Phys.* 76, pp. S1–S424.

[7] *The Economic Times* (2012), ‘Agni-V may be equipped with multiple warheads: DRDO

chief', 10 May 2012.

[8] Hyder, Tariq Osman (2009), 'Strategic stability in South Asia', *The News*, 1 August, 2009.

[9] *Wikipedia*, "Nuclear weapons and the US".

[10] Bidwai, Praful (2012), 'India: A dangerous high', *Frontline*, vol. 29 - Issue 09, May 2012, pp. 5-18.

[11] Pant, Harsh V. (2010), 'India's Controversial New War Doctrine', *ISN Security Watch*, 25 January.

[12] *Dawn* (2010), 'India 'unlikely' to deploy Cold Start against Pakistan', 3 December.

[13] *The Hindu* (2012), 'RISAT-1's radar can see through clouds and work in darkness', 25 April.

[14] *Hindustan Times* (2009), 'No CTBT, India needs more nuclear tests: Santhanam', 27 August.

[15] China is apparently also taking the position that nuclear weapons exploded on its own territory does not constitute a first use.

[16] 'Hatf IX Nasr Missile Tested by Pakistan', May 29, 2012, *ISPR*.

[17] Mian Zia & Nayyar, Abdul H. (2013) in Hoodbhoy, Pervez (ed.), *Confronting the Bomb - Pakistani and Indian Scientists Speak Out*, Oxford University Press.

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