Tactical Nuclear Weapons: Myths and Realities

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Introduction

South Asia is the post-Cold War test bed on which nuclear deterrence, nuclear doctrines, command and control systems, and crisis management principles are being examined afresh. Nuclear South Asia has a list of positives to its credit. India and Pakistan have been through a number of serious disagreements and tensions since 1998. Despite grave provocations and serious domestic political pressure, both sides have demonstrated considerable crisis management skills. Military response has not escalated beyond the conventional domains, and has avoided risks of nuclear escalation. Track II discussions between India and Pakistan have probably contributed to clear any misunderstandings. India has published its nuclear doctrine and Pakistan has indicated its thresholds. Both sides have put into place systems to improve safety and security. They have put in place command and control systems at strategic and operational levels.

Strategic Nuclear Weapons

A strategic nuclear weapon refers to a nuclear weapon which is designed to be used on targets as part of a strategic plan, such as nuclear missile bases, military command centres, factories, and heavily populated areas such as cities and towns.

Intercontinental ballistic missiles with nuclear warheads are the primary strategic nuclear weapons. A feature of strategic nuclear weapons is their greater range, thus, giving them the ability to threaten the enemy's command and control centres. They have significantly larger yields, starting from 100 kilotons up to destructive yields in the low megaton range. However, yields can overlap and some weapons can be used in both tactical and strategic roles. Indeed, the strategic attacks on Hiroshima and Nagasaki utilized weapons between 10 to 20 kilotons. This was because the "Little

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Boy" and "Fat Man" bombs were the most destructive and the only nuclear weapons available at that time. While the tactical weapons are designed to meet battlefield objectives, the main purpose of strategic weapons is in the deterrence role, under the theory of Mutually Assured Destruction (MAD).

Tactical Nuclear Weapons (TNWs)

A tactical nuclear weapon refers to a nuclear weapon which is designed to be used on a battlefield in military situations. These are designed for use in battle, as part of an attack with conventional weapon forces. TNWs formed a large part of the nuclear weapon stockpiles during the Cold War. After the Cold War, the tactical nuclear weapon stockpiles of NATO and Russia were greatly reduced, and long-range ballistic missiles increased. Both the US and former Soviet Union deployed them in Europe (among other places) during the Cold War. Since TNWs are not covered in the existing US-Russian arms control treaties, these are still deployed.

Pakistan

In April 2011, Pakistan first tested the Hatf-9 (Nasr) missile, which it called a "Short Range Surface to Surface Multi Tube Ballistic Missile." In the official statement announcing the test, Pakistan's military said "the Hatf-9 missile was nuclear-capable and had been developed to be used at shorter ranges. With a range of 60 km, it carries nuclear warheads of appropriate yield with high accuracy, shoot and scoot attributes. This quick response system addresses the need to deter evolving threats. It added that the "test was a very important milestone in consolidating Pakistan's strategic deterrence capability at all levels of the threat spectrum." Tactical Nuclear weapons, that Pakistan has flight tested, are not very helpful in stopping a tank offensive or against fast-moving targets and they are clearly excessive for blowing up railheads and bridges. Very limited use of tactical nuclear weapons might serve to warn India against advancing deeper into Pakistani territory.

Testing continued throughout 2012 and 2013, and Pakistan's Strategic Forces are believed to have inducted the missile into service following the October 2013 test. Pakistan has continued periodic testing since that time, most recently in September 2014. However, it is unclear whether Pakistan is capable of building nuclear warheads small enough to use on these TNW. Pakistan

developed tactical nukes as a way to counter India's conventional military superiority. In particular, Islamabad's tactical nuclear weapons were a response to India's development of the so-called "Cold Start" military doctrine.

After testing nuclear devices in 1998, Indian and Pakistani spokesmen downplayed the value of short-range weapons. Instead, Pakistani military stressed that any use of a nuclear weapon would have strategic consequences. This conclusion is sensible. It also greatly undermines the case for tactical nuclear weapons. Why risk crossing the momentous threshold with hard-to-defend and hard-to-control short-range delivery systems when more survivable and controllable longer-range nuclear forces are available for use in extreme circumstances? With India's growing conventional capabilities and pro-active military plans, Pakistan's military authorities have begun to emphasize the utility of tactical nuclear weapons.

India's nuclear programme is firmly controlled by civilians who view the Bomb as a political instrument. Pakistan's nuclear programme is run by military officers who think of the Bomb in military terms, and who are methodically filling in perceived shortfalls in nuclear capabilities as a means to shore up deterrence against a stronger neighbour. Pakistani leaders have not announced their nuclear doctrine.

Limitations of TNW

(a) The yield of TNW is generally lower than 'that of strategic nuclear weapons, but larger ones are still very powerful and some warheads serve both roles. Modern tactical nuclear warheads have yields up to tens of kilotons or potentially hundreds; several times that of the weapons used in the atomic bombings of Hiroshima and Nagasaki.

(b) In TNW, it is difficult to combine sufficient yield and portability. Small, two-man portable, or truck-portable, tactical weapons (Special Atomic Demolition Munition)have been developed, for demolishing "choke-points", such as tunnels and narrow mountain passes.

(c) Use of tactical nuclear weapons against similarly-armed opponents carries a significant danger of quickly escalating the conflict beyond anticipated boundaries, from the tactical

to the strategic. The existence and deployment of small, low-yield tactical nuclear warheads could be a dangerous encouragement to forward-basing and pre-emptive nuclear warfare.

(d) Of all the categories of nuclear weapons, those with the shortest ranges have the least military utility and pose the greatest problems relating to security and unauthorized use. Generally speaking, the smaller the nuclear weapon and its means of delivery, the more susceptible it is to loss of central control. There are also heightened internal security risks associated with tactical nuclear weapons. For these reasons, stockpiles of tactical nuclear warheads in most countries' arsenal have been dramatically reduced.

Operations: Myths and Realities

Pakistan has developed the tactical nukes as a "quick response weapon" designed to support "full spectrum deterrence" by countering India's growing conventional force advantages. However; there are some realities that Pakistan has to come to grips with.

(a) Pakistan's efforts to develop and produce short-range, nuclear capable systems will seriously undermine deterrence stability and escalation control in the sub-continent.

(b) Pakistani military planners will realize the enormous operational and practical challenges associated with the effort to integrate nuclear fire planning and operations manoeuvres in an effort to enhance deterrence. Pakistani military planners and front-line soldiers will find battlefield nuclear weapons to be a logistical nightmare. Indeed, the unanticipated challenges that arise with the forward deployment and use of tactical nuclear weapons are incorporating nuclear fire planning with conventional manoeuvre operations, maintaining a clear chain of command in crisis scenarios where nuclear weapons are being used, and hardening communications against EMP blasts, among other dilemmas, offset the deterrent value these systems are purported to provide.

(c) The so-called "bonus effects" of tactical nukes demand close coordination between the ground and air commanders to ensure that friendly aircraft as well as frontline troops are

not endangered by the blasts, radiation, EMP or dazzle-effect associated with tactical nuclear weapon employment.

(d) Pakistan would be confronted by serious geographical challenges. It is less than 300 kilometres from the international border to Islamabad, and Lahore is 25 km from the border between the two countries. Consequently, Pakistani forces will have little space to withdraw during the conventional phase of hostilities before deciding to escalate to the use of tactical nuclear weapons. This is further complicated by the relative short range of systems like the Nasr. As a result, it is very likely that any employment of tactical nuclear weapons by Pakistan would have to come either at the very onset of hostilities or have a high probability of striking within Pakistani territory.

(e) Securing tactical nuclear weapons and their delivery means pose greater problems than strategic weapon systems due to their relatively small size and portability. Various indigenous terrorist groups dissatisfied with the Pakistani government or interested in sparking a war could pose clear threats to Pakistan's control over its most portable nuclear assets.

(f) Unlike Cold War antagonists which were separated by great distances, India and Pakistan share borders, many of which are high population centres. Thus, usage of battlefield nuclear weapons can cause damage (both immediate and latent) to civilian populations, thus making the impact strategic, even if the weapon itself is claimed to be tactical.

India should not go in for tactical nuclear weapons because it has some serious misgivings which are hard to ignore.

(a) These are extremely complex weapons (particularly sub-kiloton mini-nukes because of the precision required in engineering) and are difficult and expensive to manufacture, store and provide logistics support. Inducting them into service even in small numbers would considerably raise the defence budget.

(b) The command and control of tactical nuclear weapons has to be decentralised during war to enable their timely

employment. Extremely tight control would make their possession redundant and degrade their deterrence value. Decentralised control would run the risk of their premature and even unauthorised use, based on the discretion of field commanders, however discerning and conscientious they may be.

(c) The dispersed storage and frequent transportation under field conditions to avoid being easily targetted by enemy, increases the risk of accidents.

(d) The employment of conventional artillery and air-to-ground precision weapons by the enemy may damage or destroy stored nuclear warheads causing heavy casualties and destruction.

(e) In a state where the civil-military arrangement is assertive (wherein the civilian government exercises tight control over the military establishment), it is unlikely that the military will enjoy wide freedom of action in defence policy and nuclear doctrine. It can, therefore, be argued that with a strong control of the civilian government in New Delhi over India's military, it is unlikely that India will develop TNWs, as this would require the delegation of launch authorities to the military.

Recommendations

Having based its deterrence on the threat of punishment, it is imperative that certainty of retaliation to cause unacceptable damage be sufficiently and credibly conveyed.

(a) It is essential to reinforce profile of the nuclear command and control at both military and the political levels. There is a need for greater transparency of structures and processes that assure nuclear retaliation.

(b) The fact that measures are being taken to ensure survivability of the arsenal, as well as the chain of command at the primary, secondary and tertiary levels, and of the communication systems, should be occasionally mentioned.

(c) It should also be made widely known that Indian troops have the ability to fight through tactical nuclear use.

(d) Strengthening the profile of the Strategic Forces Command in public perception is necessary. The knowledge of the existence of the organisation that is mandated and is prepared to handle deterrence breakdown would assure the Indian public, while also sending a signal of intent and purpose to the adversary.

(e) Provision of better evidence and communication of political resolve to undertake retaliation is necessary. Periodic statements from authoritative levels like the National Security Advisor or Commander-in-Chief, SFC or occasional news reports about meetings of Political Council of the National Command Authority would signal the seriousness of the government's attention to the nuclear backdrop that confronts India.

Conclusion

Thousands of tactical nuclear weapons deployed by the United States and the former Soviet Union during the Cold War could have resulted in stories with tragic endings. Instead, we were all lucky. Maybe Pakistan and India will also be lucky. But the history of wars on the subcontinent is rife with miscalculations, as one side or the other has repeatedly been surprised by the beginning and prosecution of wars. No surprise could be more deadly or consequential than the use of nuclear weapons in warfare. Deterrence between India and Pakistan is becoming less stable with an increase in nuclear weapon capabilities. India and Pakistan have not addressed basic issues in dispute, nor have they agreed to set them aside. In 2018, India and Pakistan are no closer to resolving their differences that were several years ago.

Pakistan and India continue to diversify their nuclear weapon capabilities in ways that undermine stability. Two kinds of delivery vehicles-short range systems that must operate close to the forward edge of battle, and sea-based systems - are especially problematic because of command and control and nuclear safety and security issues. Unless the leaders in India and Pakistan work to resolve their grievances, or consider measures to mitigate their costly and risky strategic competition, deterrence instability on the subcontinent will grow in the decade ahead. The reported development of non-strategic nuclear weapons in Pakistan can either be viewed through

this prism of a search for stability, or as a destabilizing development. If "tactical nuclear weapons" are to be used during operations, the Indian position may well be that a nuke is a nuke and the use of even a tactical one is a strategic strike. The Indian decision makers may not attach importance to either the yield of the weapon used, or the territory on which it is detonated. The response could well be strategic on the lines indicated in the Indian doctrine. The search for strategic stability will continue to drive the development of a nuclear triad and other capabilities.