The Enduring Power of Bad Ideas: ‘Cold Start’ and Battlefield Nuclear Weapons in South Asia

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In April 2011, Pakistan declared that it had tested a short-range battlefield nuclear missile, the Nasr.1 Since then, prominent purveyors of Pakistani nuclear doctrine, including Lieutenant General Khalid Kidwai and former diplomat Maleeha Lodhi, have portrayed the Nasr missile as a counter to India’s “Cold Start” war doctrine.2

That doctrine supposedly aims at rapid but limited retaliatory incursions into Pakistan by the Indian army to seize and hold narrow slices of territory in response to a terrorism event in India involving Pakistanis. The rationale is that the seized territory would be returned in exchange for Pakistani extradition of extremists inflicting terrorism onto India. The doctrine is based on the assumption that Pakistan would not resort to the use of nuclear weapons in response to a limited Indian incursion, thereby offering space for conventional conflict even in a nuclearized environment.

Pointing to this Indian war doctrine, Pakistani decision-makers now argue that the deterrent value of their current arsenal operates only at the strategic level. According to this line of reasoning, the gap at the tactical level gives India the freedom to successfully engage in limited Cold Start-style military operations without fear of nuclear escalation. Development of the low-yield, tactical battlefield nuclear weapon, the Nasr missile, is seen as the solution providing “flexible deterrence options”3 for an appropriate response to Cold Start, rather than massive nuclear retaliation against India. Nasr proponents argue that by maintaining “a credible linkage between limited conventional war and nuclear escalation,” the missile will deter India from carrying out its plan.4

This approach might appear to be sensible, but it suffers from two important flaws. First, the Cold Start doctrine has not been actively implemented and therefore does not seem to represent a genuine threat to Pakistan. Second, battlefield nuclear weapons are a key part of the proposed solution, but it may be extremely difficult to establish a command and control system that would effectively preclude the possibility of an accidental or unauthorized launch.

Is Cold Start Real?

The genesis of the Cold Start doctrine goes back to a conference of Indian army commanders held in April 2004. The media claimed at the time that a new Indian war doctrine was presented at that conference. These sources added that although the full details of the doctrine remained classified and many issues were still being fine-tuned, a briefing by a senior officer had mentioned the concept of eight integrated battle groups being employed in place of the existing three large strike formations. Yet, there is no evidence of an unveiling at the conference of the Cold Start doctrine as it stands now with its various operational details. In fact, the Indian army doctrine document released in October 2004 following the conference makes no mention of the Cold Start doctrine.5

How did the purported Cold Start doctrine gain so much currency? One of the two prime sources to which all writings on the Cold Start doctrine refer is an op-ed piece by Firdaus Ahmed, a writer on security affairs.6 Writing in May 2004, without citing any evidence, he claims that the doctrine comprises two important elements. The integrated battle groups, being smaller than the current...
strike corps, could be deployed more quickly, and these groups would be able to undercut Pakistan’s nuclear doctrine of first use by striking at narrow pieces of territory along the Indian-Pakistani border that do not necessarily compel Pakistan to cross its nuclear threshold. Ahmed points out that there was no indication that the idea had originated in the Integrated Defence Staff—the joint body serving as India’s unified armed services headquarters—suggesting that the idea did not have the endorsement of the three services. The other prime source to which all later discussions of the Cold Start doctrine refer is an article by Subhash Kapila, a strategic affairs analyst.7 In his piece, Kapila suggests that, in the absence of more details, some aspects of the strategic conceptual underpinnings of India’s new war doctrine can be assumed. One key assumption that he makes is that three of the army’s existing strike corps may be reconstituted and reinforced into eight or so integrated battle groups to launch multiple strikes into Pakistan. Another assumption is that India’s strike corps elements will have to be moved well forward from existing garrisons usually situated deeper inside India. Here again, the author makes assumptions about what he believes to be the elements of an as-yet-undeclared doctrine.

In trying to outline what Cold Start could be, these two sources were at best providing opinion rather than facts. Yet, these pieces have endured and have ended up propagating an idea that apparently does not have support from the armed forces or the political class in India. Recently, the Indian government and military have been striving to deny that Cold Start is an approved doctrine.8 Timothy Roemer, U.S. ambassador to India from 2009 to 2011, noted in a leaked assessment that “several very high level officials [including the former Indian national security adviser M.K. Narayanan] have firmly stated, when asked directly about their support for Cold Start, that they have never endorsed, supported or advocated for this doctrine.”9 The Obama administration apparently raised the issue of Cold Start in November 2009 when Indian Prime Minister Manmohan Singh visited Washington. In a subsequent comment, Indian Defense Secretary Pradeep Kumar said, “We don’t know what Cold Start is. Our prime minister has said that Pakistan has nothing to fear.”10 Similarly, General V.K. Singh, who retired in May 2012 as Indian’s chief of army staff, said in 2010, “There is nothing called ‘Cold Start.’ As part of our overall strategy we have a number of contingencies and options, depending on what the aggressor does. In the recent years, we have been improving our systems with respect to mobilization, but our basic military posture is defensive.” He has further said, “I think that ‘Cold Start’ is just a term bandied about by think tanks and media. It is neither a doctrine nor a military term in our glossary.”11

The origins of the Cold Start doctrine therefore are highly suspect. More importantly, there have not been any subsequent observable Indian efforts to operationalize the doctrine. In fact, elements of the Indian army and the Indian air force substantially disagree on how to do this and on whether the doctrine needs to be operationalized at all. The presumed Cold Start doctrine, by design, ties down Indian air force units to missions of close air support in a spatially limited theater of operations in which the army operates rather than allowing the air force to exploit the quantitative and qualitative advantages it possesses against its Pakistani counterpart and launch a wider campaign of strategic attrition and air supremacy.12

The doctrine also underplays strategic bombing, which is a preferred mission for the air force. The Indian air force has balked at this idea, suggesting that its role in the supposed Cold Start is an artificial and gross underutilization of air power. Making this point, Kapil Kak, a retired air vice-marshal who is deputy director of the air force’s Center for Air Power Studies, has said that “there is no question of the air force fitting into a doctrine propounded by the army. That is a concept dead at inception.”13 Furthermore, Kak has argued that there is little necessity for the air force to divert its frontline fighter aircraft to augment the army’s firepower. That task, he says, can be achieved by the army’s own attack helicopters and multiple rocket launchers that now have a 100-kilometer range. Yet, the army’s airborne assets are inferior to those of the air force. In particular, if the Pakistani air force brings its top assets into action in response to a Cold Start-style incursion, the Indian army’s airborne assets will not be able to provide cover for the invading army. Will Cold Start then be implementable?

In addition, Indian military forces have not undertaken any of the changes needed to execute an operation along the lines of Cold Start. The Indian army still maintains its three large offensive corps stationed in the middle of the country, whereas the Cold Start doctrine advocates breaking them into smaller integrated battle groups deployed at the Indian-Pakistani border.
Furthermore, the Indian army has not equipped its forces in a manner that would enable them to mount rapid and aggressive campaigns against Pakistan. For example, main battle tanks—a good indicator of progress—increased in number only slightly between 2003 and 2014 from an estimated 3,898 to approximately 4,000 tanks in working condition. Similarly, in 2003, the army had 320 armored personnel carriers. In 2014, there are approximately 336 active armored personnel carriers. The number of armored infantry fighting vehicles was estimated at 1,600 in 2003 and 1,445 in 2014.14 Although equipment numbers do not always represent military intent, the constancy in equipment inventory again points to a lack of concerted effort to actualize Cold Start.

This lack of effort to re-engineer the Indian military along the lines envisioned in the Cold Start doctrine reflects to some measure the limits of coercive military power. For example, after the 2008 Mumbai terrorist attack, Prime Minister Singh had apparently decided against military action. It is believed that Singh had worried that if India were to launch selective strikes, they would likely only deepen Pakistan’s internal turmoil and probably escalate into a war that could include nuclear deployments, which may be precisely what the terrorists hope to provoke. That is a significant problem to which the Cold Start doctrine has no remedy.

Additionally, India possibly recognizes, given the recent spate of terrorist attacks within Pakistan, that Pakistan is now able to exert much less control over the jihadi elements operating inside its territory. Speaking on the limits of military action after the Mumbai attack, Lalit Mansingh, a former Indian ambassador in Washington, said that “there is no military option here. India had to ‘isolate the terrorist elements’ in Pakistan not rally the nation around them.”15

The absence of official approval, the divergent interests of the various branches of the armed services, and the lack of observable military progress toward implementation of the Cold Start doctrine in India should give Pakistani leaders pause with regard to further developing and deploying the Nasr missile. These issues, however, are only part of the reason that battlefield nuclear weapons are a poor choice for Pakistan. The difficulties in managing battlefield nuclear weapons are an equally important aspect.

**Pakistani Command and Control**

The possession of short-range battlefield nuclear weapons poses one major challenge to Pakistan: effective command and control. The Nasr, which has a short range of about 60 kilometers, is a quick-dispersal system that can be forward deployed near the Indian-Pakistani border, thereby providing ready access to the field commander when he needs it. Although a forward-deployed system could give field commanders quick access and obviate the risk of a communication failure with the political leadership in the midst of combat, ensuring such operational readiness might also require the devolution of command and control to the local field commander and possibly even a prior authorization to use nuclear weapons. That poses the risk of unauthorized or unnecessary use.

A field commander has no way to forecast the outcome of a battle; there is a constant risk of being overrun. He has no way to be absolutely sure that all conventional options have been exhausted and that he is using nuclear weapons only as a last resort. Lacking the overall picture, a regiment or a battalion commander could always be tempted to utilize all his available weapons. While at Harvard University, Henry Kissinger argued that when a commander is hard pressed and facing the prospect of eventual defeat, he would need “superhuman discipline to refrain from using a weapon that he believes may tilt the outcome of the battle in his favor.”16
necessarily imply that Pakistan would lose the war. Winning all the battles is not a requirement for
bringing the war to a standstill. If the same situation were to unfold in the future, would a Pakistani
commander decide to use battlefield nuclear weapons? If so, would India escalate with nuclear
retaliation? How would that affect the outcome of the war? Pakistani military decision-makers should
explore these questions and determine how they affect the command and control arrangements of
the Nasr.

Pakistan’s political and military leaders also should worry about the validity and integrity of any
distress signal they would receive in an emerging military crisis or during a war. To illustrate, two
days after the 2008 Mumbai terrorist attack began, someone pretending to be India’s foreign
minister telephoned Pakistani President Asif Ali Zardari and threatened war unless Pakistan acted
immediately against the perpetrators of the attack. Zardari immediately contacted the country’s
military leadership, and the country’s army and air force went to their highest alert status.

In subsequent comments to the Dawn newspaper, a senior Pakistani official defended the high-alert
status during the incident, saying that “war may not have been imminent, but it was not possible to
take any chances.” Zardari also initiated a diplomatic campaign with the United States to put
pressure on India to withdraw the apparent threat. Pakistani leaders warned the United States that if
the Pakistani government felt threatened, it would move troops engaged in anti-terrorism operations
in the Afghanistan border region to its eastern border with India. U.S. Secretary of State Condoleezza
Rice had to intervene. Rice called Indian Foreign Minister Pranab Mukherjee in the middle of the
night to ask him about the call and inquire about the threatening message. Mukherjee reassured
Rice that he had not spoken to Zardari.17

A year later, a report in Dawn revealed that an investigation in Pakistan concluded that the call to
Zardari was made by Omar Saeed Sheikh, the terrorist held for the murder of American journalist
Daniel Pearl at the Hyderabad prison in Pakistan. Sheikh also seems to have reached General Ashfaq
Parvez Kayani, the chief of army staff.

Apparently, Sheikh was using a cellphone with a SIM registered in the United Kingdom.18 It is still
unknown if powerful elements within Pakistan were involved in planning the hoax call. How did the
call get through without due diplomatic checks?19 Was it just an oversight, or was there internal
involvement? Suggestions were made in India that Zardari was “suckered” into taking the call,
hinting at the involvement of “elements” in Pakistan that wanted the situation to escalate.20
Tempting as it may be to characterize this incident as an isolated occurrence, it is not. A number of
similar incidents have occurred.21 Given these miscommunications, how can a Pakistani decision-
maker be sure that a request to approve use of battlefield nuclear weapons is valid and necessary?
Pakistan’s discordant military-civilian relationship also poses challenges to the sensible and safe
command and control of forward-deployed battlefield nuclear weapons.22

An Alternative for Pakistan

Two factors should compel Pakistan to reassess its plans for further development and deployment of
the Nasr. First, the validity and viability of Cold Start—the primary reason for Pakistan’s development
of the Nasr—has been highly overrated. There is no evidence to suggest that it is an official doctrine
drawing broad political support or generating interservice enthusiasm. Second, operating a
battlefield nuclear weapon such as the Nasr in the absence of a real and current Cold Start threat
imposes unnecessary additional stresses on the management of Pakistan’s nuclear command and
control.
If Pakistan nevertheless intends to possess a limited battlefield nuclear weapons capability, its current nuclear arsenal can perform that function. There is no particular need to develop new missiles or warheads. Pakistan’s current missile inventory and nuclear arsenal in combination can perform all the intended functions of a battlefield nuclear weapon. Its current long-range missiles can be launched on a lofted trajectory to reach locations near the Indian-Pakistani border where the Nasr is meant to be employed. For example, the Abdali missile, which has an optimal range of 180 kilometers, can travel 60 kilometers, the range of the Nasr missile, when launched at a lofted angle of approximately 80 degrees (fig. 1). Similarly, the Ghaznavi missile, which has an optimal range of 290 kilometers, can be launched at a lofted angle of 84 degrees to travel the same distance as the Nasr. Another option would be to launch the Babar cruise missile and shut off its booster earlier in the flight to achieve a 60-kilometer range.

Similarly, Pakistan’s current nuclear warheads could be used to produce explosive effects that are similar to those of low-yield nuclear weapons. A typical five-kiloton low-yield weapon, for example, produces an air blast with an overpressure of 20 pounds per square inch (psi) felt to a distance of approximately 480 meters when detonated at an altitude of 310 meters. Weapons with higher yields can be made to produce the same overpressure effect by increasing the altitude at which they are detonated.

For example, a 15-kiloton nuclear device can be made to produce the same 20 psi overpressure felt to a distance of approximately 480 meters by exploding it at an altitude of 523 meters. Usually, the maximum distance on the ground to which 20 psi overpressure is felt for a 15-kiloton nuclear device is 690 meters when exploded at an altitude of 450 meters. Therefore, by increasing the explosion altitude, a 15-kiloton weapon is made to function like a five-kiloton weapon. Similarly, a 30-kiloton or even a 50-kiloton weapon could be detonated at a particular altitude—725 meters and 1,200 meters, respectively—to replicate the air blast radius of a five-kiloton device.

**Conclusion**

The options described above show that Pakistan’s current arsenal already intrinsically possesses the capability to perform the functions of battlefield nuclear weapons. If Pakistani military and government officials decide that the country should have such a capability to offset a sudden invasion by India, they therefore have no need to pursue the development of the Nasr missile.

The larger point of the above analysis, however, is that there is no evidence of a requirement for such a capability. The main impetus for the development of the Nasr was India’s Cold Start doctrine, but it does not appear that this doctrine was fully formed. Perhaps more importantly, India has not taken the key steps for its force posture that would be necessary to implement the doctrine. Pakistan
therefore should desist from further pursuit of the Nasr program. Such an action would not only save Pakistan money, but also would help avoid spurring a new nuclear arms race in tactical nuclear weapons in South Asia.

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Endnotes

1. Inter Services Public Relations, No. PR94/2011-ISPR, April 19, 2011 (press release). Since then, the Nasr missile has been tested three times.


8. The one exception that this author could find is a statement by General Deepak Kapoor, the Indian army chief of staff who served from September 2007 to August 2009. During an army war exercise, he is reported to have said, “A major leap in our approach to conduct of operations has been the successful firming-up of the Cold Start strategy.” For details, see Rajat Pandit, “Army Reworks War Doctrine for Pakistan, China,” The Times of India, December 30, 2009.


14. All data were obtained from the Military Balance database published by the International Institute for Strategic Studies.


19. According to a Dawn report, the staff of Pakistani President Asif Ali Zardari had bypassed standard diplomatic verification protocols in allowing the call because of heightened tensions between India and Pakistan over the Mumbai attack. For details, see “A Hoax Call That Could Have Triggered War,” Dawn, December 6, 2008. Immediately after the incident, however, the Pakistani government claimed that Zardari had received the call only after it had been appropriately vetted. Pakistani Information Minister Sherry Rehman said in a statement that “it is not possible for any call to come through to the President without multiple caller identity verifications. In fact the identity of this particular call, as evident from the CLI (caller's line identification) device, showed that the call was placed from a verified official phone number of the Indian Ministry of External Affairs.” See Simon Cameron-Moore, “Hoax Call to Zardari ‘Put Pakistan on War Alert,’” December 6, 2008.

20. Interestingly enough, a mistake had also occurred on the Indian side. When U.S. diplomats initiated calls with their counterparts in India, before U.S. Secretary of State Condoleezza Rice had spoken directly with Indian Foreign Minister Pranab Mukherjee, they were alarmed when Indian Joint Secretary (Americas) Gaitri Kumar mistakenly confirmed that Mukherjee had indeed made that call. Later, however, M.K. Narayan, India’s national security adviser, insisted that no such call had been placed. In a later cable, U.S. Ambassador to India Donald Mulford said he “suspects that [Kumar] incorrectly inferred that a Mukherjee-Zardari call took place from the fact that Mukherjee’s office had, as a precaution, prepared points for him to use if Zardari were to phone [Indian] Prime Minister [Manmohan] Singh when he was unavailable, leaving Mukherjee to receive the call.” This incident shows how, in a tense situation, one mistake could provoke another. For details, see Dean Nelson, “WikiLeaks: Hoax Phone Call Brought India and Pakistan to Brink of War,” The Telegraph, March 23, 2011.


22. In the case of the 1999 Indian-Pakistani Kargil war, for example, there is ample evidence to suggest that the Pakistani military leadership acted without political approval. Nawaz Sharif, the Pakistani prime minister during the Kargil war, claimed that he had no advance knowledge of what the army was planning to do in Kargil. He argued that the “ill-planned and ill-conceived operation was kept so secret that the Prime Minister, some corps commanders and the Chief of Navy and the Air Force were kept in the dark.” In 2010 the chief of Pakistan’s Directorate of Inter-Services Intelligence (ISI) during the Kargil war, retired General Ziauddin Butt, accused General Pervez
Musharraf, the chief of army staff, of bluffing Sharif into starting the Kargil war. Similarly, as recently as 2013, Lieutenant General Shahid Aziz, who served as director-general of the analysis wing of ISI during the Kargil war, said that the entire operation was a four-man show, with details known initially only to Musharraf, Chief of General Staff Muhammed Aziz, Force Command Northern Areas commander Lieutenant General Javed Hassan, and 10-Corps commander Mahmud Ahmad. For details, see Jones, Pakistan: Eye of the Storm, p. 101; Sartaj Aziz, Between Dreams and Realities: Some Milestones in Pakistan’s History (New York: Oxford University Press, 2009), pp. 249-276; “Musharraf Responsible for Kargil Conflict: Ex-ISI Chief,” The Siasat Daily, October 31, 2010; Khaleeq Kiani, “Kargil Adventure Was Four-Man Show: General,” Dawn, January 28, 2013.

23. For a given missile, the maximum ground range is achieved when it is launched at a 45-degree angle. When the launch occurs at a higher, or “lofted,” angle, the missile flies higher into the atmosphere and therefore has a reduced ground range, compared to a 45-degree launch angle.

24. Launching missiles at lofted angles forces them to travel to higher altitudes and re-enter the atmosphere at a steeper angle and a faster rate. This, in turn, might impose additional stresses on the missile warhead. In the case of a lofted Ghaznavi missile, which reaches an altitude of approximately 150 kilometers, handling any additional stresses should be within the technological capability of Pakistan’s missile designers. Pakistan’s Ghauri and Shaheen missiles, when launched on their optimal trajectories, already reach altitudes greater than 150 kilometers.

25. Overpressure, measured in pounds per square inch (psi), is one of the standard metrics used to define the destructive potential of nuclear weapons. At 20 psi, most heavily built concrete buildings are severely damaged or demolished. That overpressure also can cause significant damage to military vehicles.