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A Cold Start for Hot Wars: An Assessment of the Indian Army's New Limited War Doctrine

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A Cold Start for Hot Wars?

Abstract: In response to the perceived inability of the Indian military to adequately react to the 2001 attack on the Parliament building in New Delhi and the subsequent military standoff with Pakistan, the Indian military announced a new offensive doctrine in 2004 that would allow it to mobilize quickly and undertake limited preemptive attacks on its neighbour, without crossing Pakistan's nuclear threshold. This "Cold Start" doctrine marked a break with the fundamentally defensive military doctrines that had been employed by India for the 57 years since independence. Requiring combined arms operating jointly with air power from the Indian Air Force and naval aviation assets, Cold Start represents a fairly significant undertaking for the Indian military. The purpose of this study is to assess the Indian military's progress towards implementing Cold Start three years after its unveiling and explore the implications of a preemptive/limited war doctrine for stability in South Asia.

Introduction

The precarious relations between undeclared nuclear powers India and Pakistan has continued to ensure that stability in South Asia remains uncertain. In the past eight years alone there have been two military crises that escalated to the point where outside intervention was required to prevent the outbreak of war. A low-level Pakistani backed insurgency in Indian controlled Kashmir adds to the tense relations between the two nations. Given the nuclear dimension involved as well as India's increasingly prominent role in world affairs, strategic and military developments on the subcontinent are clearly of concern to the broader international community.

In response to the perceived inability of the Indian military to adequately react to the 2001 attack on the Parliament building in New Delhi and subsequent military standoff with Pakistan, known as Operation Parakram, the Indian Army announced a new offensive limited war doctrine in 2004 that would allow it to mobilize quickly and undertake preemptive attacks in response to the specific challenge posed by Pakistan's proxy war. This "Cold Start" doctrine marked a break with the fundamentally defensive military doctrines that had been employed by India for the 57 years since independence. Requiring combined arms operating jointly with air power from the Indian Air Force and naval aviation assets, Cold Start represents a fairly significant undertaking for the Indian military. The purpose of this study is to explore the Cold Start concept, including its potential impact on strategic stability in South Asia, and to assess the Indian military's progress towards implementing Cold Start three years after its unveiling.

This paper has five parts. The first section briefly summarizes the importance of military doctrine to a state's armed forces, offers several reasons for its study and then examines academic treatments of military doctrine. The second section provides an overview of the "Sundarji Doctrine" that India had employed since the early 1980s and explains the pressures for a new doctrine that emerged as a result of Operation Parakram. The third section outlines the Cold Start doctrine introduced in April 2004. Section four discusses the implications of a Cold Start-style limited war doctrine for strategic stability in South Asia. Section five assesses India's progress towards implementing Cold Start by focusing on three areas: infrastructure development, organizational changes within the military and operational capability as demonstrated through recent war games. Finally, the final section offers several conclusions about the state of India's progress towards operationalizing Cold Start and identifies areas for future study.

A Note on Sources

Finding source materials for a study of this sort can be difficult. A contemporary topic such as this prohibits the examination of archival materials or internal government and military communications. The national security focus of the research and the relatively closed nature of the Indian military limit the available information. Nevertheless, it is possible to gain insightful information from open sources. Materials examined for this study includes official publications, newspaper articles, professional military journals, analysis by Indian think tanks, and web pages of Indian military enthusiasts.

The Utility of Studying Military Doctrine

A state's military doctrine provides the basic principles that shape the way in which its armed forces are employed to achieve national objectives.¹ Doctrine provides a common frame of reference for military officers by identifying the general missions of a nation's armed forces as well as the basic concepts about how the armed forces will carry out those missions. Doctrine does not provide specific answers as to how a given military problem should be solved; rather it provides a framework for thinking about those problems.

A state's military doctrine is distinct from its national strategy, which is concerned with the employment of all aspects of national power (diplomatic, economic, and military) to secure national objectives.² However, military doctrine and national strategy are interrelated. In some cases, military doctrine will be shaped by the decisions made regarding a state's national strategy, in other cases, military doctrine (specifically what the state's armed forces can achieve) will limit or constrain the decisions made regarding national strategy. Doctrine is also distinct from military tactics which guide the employment and arrangement of forces in combat, although the development of tactics should be guided by doctrine. Military doctrine is most closely associated with the operational level of war: the linking together of individual battles into campaigns that are designed to achieve a nation's strategic objectives.

For those seeking to measure a state's power or understand its strategic thinking, paying attention to military doctrine is important for several reasons. First, doctrine can provide insight into the kinds of wars a military expects it will have to fight in the near future. Secondly, a study of doctrine can provide a guide as to how a military might fight the wars it expects. Thirdly, the requirements of military doctrine often shape a military's procurement pattern. It is one thing to monitor the acquisition of new weapons systems, however to evaluate their contribution to a state's military power one must also know how they will be used. Insights into all of these areas can be gained by studying a military's doctrine.

The study of a state's doctrinal choices has relevance beyond just the sub-set of scholars who specifically study military organizations. Political scientists have

¹ U.S. Joint Chiefs of Staff, *Joint Publication 1-02: Department of Defense Dictionary of Military and Associated Terms* (Washington, D.C.: U.S. Government Printing Office, As Amended Through 31 August 2005), p. 168.

² *Ibid.*, p. 362.

articulated a number of links between the doctrinal choices made by states and broader patterns of international conflict. John Mearsheimer has argued that the choice of military doctrines affects the success of conventional deterrence between pairs of states, with certain doctrinal choices increasing the likelihood of war.³ Further empirical research by Dan Reiter confirms that the choice of military doctrine affects the likelihood of a state to initiate military disputes with its neighbors.⁴ Alan Stam has found that the choice of military doctrine is a very important, perhaps the most important, determinant of victory or defeat in international conflict.⁵ Scott Bennett and Alan Stam report that states' military doctrines impact the durations of the wars they are involved in.⁶

The Academic Treatment of Military Doctrine

Although the details of a state's military doctrine can vary widely, political scientists have developed several methods of cataloging them for the purposes of study. The assessment of military doctrine and modern conventional warfare received its first such framework in Barry Posen's 1984 work *The Sources of Military Doctrine*.⁷ Posen identified military doctrines as either fundamentally offensive or defensive in nature. By his definition, "Offensive doctrines aim to disarm an adversary—to destroy his armed forces. Defensive doctrines aim to deny an adversary the objective he seeks."⁸ This offensive-defensive formulation was also employed by Jack Snyder and Elizabeth Kier in their own studies of military doctrines.⁹ The typology employed by Posen made sense from an academic standpoint, particularly as it allowed linkage to Robert Jervis' concept of the offense-defense balance: The idea that changes in geography or technology can make offensive or defensive military operations relatively easier or harder to execute, which in turn alters the intensity of the local security dilemma, making war more or less likely.¹⁰

Posen's offensive-defensive formulation has been the subject of a number of criticisms. Some scholars have argued that trying to separate offense and defense as separate phenomenon is conceptually flawed.¹¹ Others have pointed out that judgments

³ John J. Mearsheimer, *Conventional Deterrence* (New York: Cornell University Press, 1983).

⁴ Dan Reiter, "Military Strategy and the Outbreak of International Conflict: Quantitative Empirical Tests, 1903-1992," *Journal of Conflict Resolution*, Vol. 43 (June 1999).

⁵ Allan C. Stam, *Win, Lose or Draw: Domestic Politics and the Crucible of War* (Ann Arbor: University of Michigan Press, 1996).

⁶ D. Scott Bennett, and Allan C. Stam III, "The Duration of Interstate Wars, 1816-1985," *American Political Science Review*, Vol. 90 (1996).

⁷ Barry Posen, *The Sources of Military Doctrine : France, Britain, and Germany between the World Wars* (Ithaca: Cornell University Press, 1984).

⁸ *Ibid.*, p. 14.

⁹ Jack L. Snyder, *The Ideology of the Offensive : Military Decision Making and the Disasters of 1914* (Ithaca: Cornell University Press, 1984). and Elizabeth Kier, *Imagining War : French and British Military Doctrine between the Wars* (Princeton, N.J.: Princeton University Press, 1997).

¹⁰ Robert Jervis, "Cooperation under the Security Dilemma," *World Politics*, Vol. 30, No. 2 (January 1978). For a critique of Jervis see Mearsheimer, *Conventional Deterrence*

¹¹ Jonathan Shimshoni, "Technology, Military Advantage, and World War I: A Case for Military Entrepreneurship " *International Security*, Vol. 15, No. 3 (Winter, 1990).

of offense and defense have more to do with a state's goals and grand strategy rather than the mode of military operations it undertakes.¹²

More recent scholarship on military doctrines has proposed an alternate formulation based on the methods by which forces are actually employed. Within this framework the two most common doctrinal archetypes are: *attrition*, which focuses on attacking the enemy's strength; and *maneuver*, which focuses on attacking the enemy's will and cohesion. Not only does the attrition-maneuver typology offer a clear distinction between military means and political ends it also discusses military doctrine in the language used by military officers and policy makers.¹³ Each of these two doctrines is briefly discussed in turn.

Attrition is focused on destroying the enemy's strength, what Clausewitz called "the center of gravity."¹⁴ Armies implementing an attrition doctrine often seek victory by destroying or capturing enemy forces in the field. As Clausewitz counsels "No matter what the central feature of the enemy's power may be—the point on which your efforts must converge—the defeat and destruction of his fighting force remains the best way to begin, and in every case will be a very significant feature of the campaign."¹⁵ Attrition doctrines heavily emphasize battle: the clash between opposing forces. This leads armies to focus on technology and equipment. Achieving superior firepower and superior numbers are seen as the key to victory. From a command and control standpoint, attrition doctrines typically emphasize the central control of large formations while individual officers are expected to mechanically execute their duties according to standard operating procedures. High quality leadership is not necessarily a requirement for attrition warfare as personal initiative and innovation are not emphasized.¹⁶ Historical examples of attrition warfare include Ulysses S. Grant's later campaigns of the U.S. Civil War, the battles on the Western Front during much of World War I, and the 1939 German invasion of Poland.

The phrase "maneuver warfare" often gives the false impression that any mode of fighting that involves mobility must be maneuver and that attrition warfare, by contrast, is static. While armies employing maneuver doctrines do frequently employ speed and mobility, the primary differentiation from attrition warfare is the focus on destroying the

¹² Dan Reiter and Curtis Meek, "Determinants of Military Strategy, 1903-1994: A Quantitative Empirical Test," *International Studies Quarterly*, Vol. 43, No. 2 (1999).

¹³ Reiter, "Military Strategy and the Outbreak of International Conflict: Quantitative Empirical Tests, 1903-1992," p. 369. Contesting this typology is Hew Strachan, who argues that attrition and maneuver are not comparable concepts: attrition is a component of the tactical level of war whereas maneuver is a product of the operational level of warfare. Hew Strachan, "Manoeuvre and Attrition – a Historical Perspective," in *From Manoeuvre Warfare to Kosovo?*, ed. John Andreas Olsen (Trondheim, Norway: Royal Norwegian Air Force Academy, 2001). In contrast Edward Luttwak contends that attrition and maneuver are universal phenomenon "which pervade all aspects and all forms of war and war preparation." However he does note that the decisive level of warfare for maneuver is the operational level. Edward N. Luttwak, "The Operational Level of War," *International Security*, Vol. 5, No. 3 (Winter 1980/81), p. 65, 73.

¹⁴ Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret (Princeton, N.J: Princeton University Press, 1984), p. 595-596, 617-599. Carter Malkasian provides a nuanced discussion of attrition as a military strategy in Carter Malkasian, "Towards a Better Understanding of Attrition: The Korean and Vietnam Wars," *The Journal of Military History*, Vol. 68, No. 3 (July 2004).

¹⁵ Clausewitz, *On War*, p. 485-486.

¹⁶ Joseph A. Gattuso, "Warfare Theory" *Naval War College Review*, Vol. XLIX, No. 4 (Autumn 1996).

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cohesion of the enemy forces rather than the forces themselves. Though concepts of maneuver theory can be traced back to Sun Tzu, modern thinking on maneuver doctrine is associated with the writings of U.S. Air Force Colonel John Boyd. As William Lind writes, Boyd recognized that:

conflict can be seen as time-competitive observation-orientation-decision-action cycles. Each party to a conflict begins by observing. He observes himself, his physical surroundings, and his enemy. On the basis of this observation, he orients, that is to say, he makes a mental image or ‘snapshot’ of his situation. On the basis of his orientation, he makes a decision. He puts the decision into effect, i.e., he acts. Then because he assumes his action has changed the situation, he observes again, and starts the process anew.¹⁷

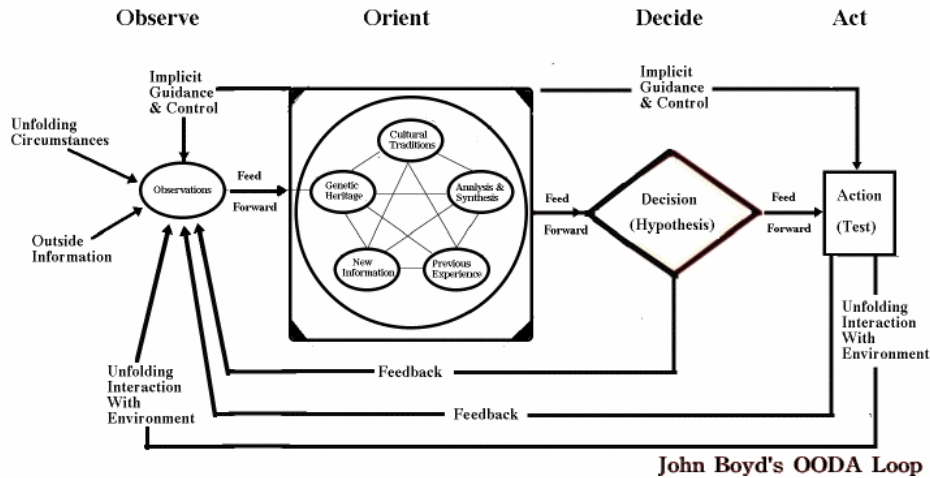
This cycle of observe, orient, decide, act is commonly referred to as the “OODA loop” (pronounced ü-da). By moving forces into unpredicted locations at high speeds and making decisions faster than the opponent can, maneuver warfare seeks to destroy the enemy’s cohesion by disrupting his OODA loop. The most famous historical example of this process was the German “blitzkrieg” against France in 1940.¹⁸ Highly mobile panzer units drove deep into French territory along multiple lines of advance, bypassing defenses and strong points. The presence of German troops behind their lines disrupted the French command and control systems. Though the French still possessed numerous troops in the field, the French High Command was paralyzed and unable to respond to the quickly changing events on the ground. The Germans had “gotten inside” their OODA loop—the result of which was catastrophic defeat and occupation.¹⁹

¹⁷ William S. Lind, *Maneuver Warfare Handbook* (Boulder, CO: Westview Press Inc., 1985), p. 5.

¹⁸ Other examples of maneuver warfare include Douglas MacArthur’s dramatic landing at Inchon which cut off North Korean forces, Israel’s military operations during the Six Day War and the U.S. drive on Baghdad in March 2003. William R. Hawkins, "Iraq: Heavy Forces and Decisive Warfare," *Parameters*, Vol. XXXIII, No. 3 (Autumn 2003), p. 65, Malkasian, "Towards a Better Understanding of Attrition: The Korean and Vietnam Wars," p. 914-915.

¹⁹ John R. Boyd, *Patterns of Conflict*, ed. Chuck Spinney and Chet Richards (Atlanta, GA: Defense and the National Interest, September 2006). 69-89.

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In contrast to attrition, maneuver doctrines offer a higher level of risk and reward. Maneuver extends the possibility of achieving a decisive victory in a short war, while attrition is not necessarily conducive to a “quick decision.”²⁰ However, even maneuver proponents acknowledge that when these warfighting methods go wrong they:

are apt to fail catastrophically—unlike attrition solutions which normally fail ‘gracefully,’ that is to say gradually. The vulnerability of [maneuver] methods to catastrophic failure reflects their dependence on the *precise* application of effort against correctly identified points of weakness.²¹

Unlike attrition warfare which puts a premium on material, maneuver doctrines emphasize people. Authority and initiative are devolved to junior level leaders who must be relied upon to problem-solve rather than react according to fixed operating procedures. A war fighting doctrine premised on creating confusion and disorder in the enemy’s organization cannot be centrally controlled.²² Like attrition doctrines, maneuver warfare can be employed to achieve either offensive or defensive aims. According to political scientists who study the effects of military doctrines on international conflict, states with maneuver doctrines are more likely to initiate armed disputes with their neighbors²³, more likely to win the wars they fight²⁴, and are more likely to fight wars of a shorter duration.²⁵

Having explained the importance of studying military doctrine and identified a framework by which military doctrines can be categorized and analyzed, attention now turns to the specifics of India’s conventional military doctrine.

²⁰ Luttwak, "The Operational Level of War," p. 73, Malkasian, "Towards a Better Understanding of Attrition: The Korean and Vietnam Wars," p. 940.

²¹ Luttwak, "The Operational Level of War," p. 65.

²² Gattuso, "Warfare Theory".

²³ Reiter, "Military Strategy and the Outbreak of International Conflict: Quantitative Empirical Tests, 1903-1992."

²⁴ Stam, *Win, Lose or Draw: Domestic Politics and the Crucible of War*.

²⁵ Bennett, "The Duration of Interstate Wars, 1816-1985."

The Sundarji Doctrine and Operation Parakram

Since independence, India's military posture had been fundamentally defensive in nature. Former Defense Minister George Fernandes described it as "a non-aggressive, non-provocative defense policy based on the philosophy of defensive defense."²⁶ Under the so-called "Sundarji Doctrine", which India pursued from 1981-2004, ten defensive or "holding corps" of the Army were deployed in the vicinity of the border region with Pakistan. The units consisted of infantry divisions for static defense, mobile mechanized divisions which could respond to enemy penetrations and a limited number of armored units.²⁷ Though possessing limited offensive power, as their name implies, the holding corps primary role during a war was to check an enemy advance.

India's offensive power consisted of three "strike corps" which are each built around an armored division with mechanized infantry and extensive artillery support.²⁸ Unlike the holding corps which were deployed close to the border, the strike corps are based in central India (I Corps in Mathura, II Corps in Ambala, and XXI Corps in Bhopal) a significant distance from the international border. In a war, after the holding corps had halted a Pakistani attack, the strike corps would counterattack in the Rajasthan sector and penetrate deep into Pakistani territory to destroy the Pakistani Army's warfighting capability through "deep sledgehammer blows" in a high-intensity battle of attrition.²⁹ Optimistic proponents of the strike corps concept even envisioned that their armed columns possessed the power to sever Pakistan in two. The strike corps would operate under the protection of the Indian Air Force, which would be expected to gain air superiority over Pakistan and then provide close air support to ground operations.

The limitations of India's existing conventional war-fighting doctrine were exposed in Operation Parakram.³⁰ On 13 December 2001, five gunmen wearing military fatigues attacked the Indian Parliament building in New Delhi. Twelve people were killed and twenty-two injured in the ensuing hour-long gun battle, including all five of the gunmen, one of whom blew himself up with explosives strapped to his body.³¹ Though no group immediately took credit for the attack suspicion quickly turned to Kashmiri militants because two months earlier a similar assault had been carried out by the *Jaish-e-Mohammad* (Army of Mohammad) two months previously on the Kashmir state assembly building in which 38 people were killed.³² After the Kashmir attack, the Indian government had warned the United States to rein in Pakistan's support to militant groups such as *Lashkar-e-Taibyyaba* and *Jaish-e-Mohammad*, otherwise India might be forced to take matters into its own hand.

²⁶ George Fernandes, "The Dynamics of Limited War," *Strategic Affairs* (October 16, 2000).

²⁷ V.R. Raghavan, "Limited War and Nuclear Escalation in South Asia," *The Nonproliferation Review*, Vol. 8, No. 3 (Fall-Winter 2001), p. 8.

²⁸ Ibid.

²⁹ Gurmeet Kanwal, "Pakistan's Nuclear Threshold and India's Options," *Air Power*, Vol. 1, No. 1 (Monsoon 2004), p. 123, V. K. Sood and Pravin Sawhney, *Operation Parakram: The War Unfinished* (New Delhi: Sage Publications, 2003), p. 81.

³⁰ For a detailed account of Operation Parakram see V.K. Sood and Pravin Sawhney, *Operation Parakram: The War Unfinished* (London: Sage Publications, 2003). from which much of this section is drawn.

³¹ "Indian Parliament Attack Kills 12," *BBC News* 13 December 2001 (accessed at <http://news.bbc.co.uk> on 10 October 2006.), p.

³² "Militants Attack Kashmir Assembly," *BBC News* 1 October, 2001 (accessed at <http://news.bbc.co.uk> on 12 October 2006.), p.

As credible reports began to link the gunmen who attacked the Parliament to Pakistani-backed militant groups, India decided to undertake its own attempt at **coercive diplomacy**. On 18 December, the government mobilized for war by launching Operation Parakram (Operation Valor), the largest activation of Indian forces since the 1971 Bangladesh War. While there is still some uncertainty surrounding the actual objectives of Operation Parakram, it is clear that, at a minimum, India intended to signal to Pakistan that, nuclear weapons or not, it was willing to go to war to end Pakistani support for militants in Kashmir. Unfortunately for India's efforts, the decisiveness of its message was undercut by the inability of the Indian Army to present a timely threat to Pakistan.

From the time that the mobilization order was given, it took nearly three weeks for the armored columns of the strike corps to make their way to the international border area. In this intervening period, the Pakistani army was able to counter-mobilize on the border, and more importantly, international opinion shifted away from India. While initially very sympathetic to India in the wake of the 13 December attack, the Western powers became increasingly concerned by the extent of India's military mobilization. This concern translated into U.S. involvement in the escalating conflict as an intermediary, counseling restraint on both sides of the border. The U.S. Ambassador to India, Robert Blackwill, pressured the Indian Government to hold back from military action until Pakistani President Pervez Musharraf delivered his "about turn" speech on 12 January 2002, where in a nationwide address he denounced terrorism in the name of Kashmir and pledged a renewed crackdown on militant groups in Pakistan. As a result, India's political momentum for military action was significantly reduced by the time the strike corps had reached the border region. After this, Operation Parakram began to peter out. Although tensions remained high and the chances of war were still likely in June-July 2002, the end result was a ten-month standoff that ended with a whimper, not a bang.³³

Post-mortem analysis of Operation Parakram, particularly within the Indian Army, focused on why India had been unable to achieve significant political aims through its deployment. Part of the blame clearly belonged to the Indian leadership who failed to define any strategic objectives for the mobilization, which made it impossible to define victory or defeat for the operation.³⁴ However, defense analysts pointed to the long delay between the mobilization order and the actual deployment of the strike corps as a key window that allowed Pakistan to appeal to its allies, particularly the United States, for aid before India could deliver its "justly deserved" punishment. It has also been argued that the delay created enough of a gap between mobilization and execution for India's political leadership to lose its nerve, which was subsequently responsible for the decision to back down in the face of international pressure.³⁵

Regardless of the exact cause of Operation Parakram's failure, strategic thinkers within the defense establishment came to believe that the fundamental fault lay with the Sundarji Doctrine.³⁶ A war fighting strategy that calls for massive armored thrusts to dismember Pakistan, they argued, is too crude and inflexible a tool to respond to terrorist

³³ **[add assessment of what India got/not got from the op to this section]**

³⁴ Sood and Sawhney, *Operation Parakram: The War Unfinished*, p. 73.

³⁵ **[cite]**

³⁶ A similar discussion of limited war as a strategic option for India occurred in the wake of the 1999 Kargil crisis. C. Raja Mohan, "Fernandes Unveils 'Limited War' Doctrine," *The Hindu* 25 January 2000, p.

attacks and other indirect challenges in the current geopolitical environment.³⁷ Furthermore, mobilizing the entire military is not an appropriate policy in pursuit of limited aims. Instead, it was argued, contemporary security challenges required deployed military units to possess the ability to quickly respond to contingencies requiring military force.

Three specific failings were identified with the performance of the Sundarji Doctrine in Operation Parakram. First, the enormous size of the strike corps made them difficult to deploy and maneuver. By the time the strike corps had reached their forward concentration areas, General Mushariff had given his “about turn” speech and the United States was putting significant pressure on India to restrain its response. In the eyes of many senior Indian officers, Pakistan had outplayed them. It had managed to inflict a very public attack on the Indian capital via its proxies and then exploited the Indian army’s long deployment time to internationalize the crisis in a manner that allowed Pakistan to escape retribution. Even those in the Indian government who claim that Operation Parakram was never intended to be anything more than an exercise in coercive diplomacy had to be disappointed in the long delay between policy decisions and military action.

A second perceived flaw with the strike corps performance was their lack of strategic surprise. Pakistan had its intelligence agencies focused on the three strike corps and any action on their part would be quickly noticed—particularly given their large, lumbering character. Furthermore, once mobilized, the strike corps progress and destination could be easily deduced by Pakistani forces.

Finally, the holding corps’ lack of offensive power was also a cause for concern. They were forward deployed in the border regions, yet could only carry out limited offensive tasks. In the eyes of Army strategists, the total dependence on the strike corps for offensive power hindered India’s rapid response to the 13 December attacks.

Cold Start

To correct the perceived deficiencies in India’s conventional warfighting doctrine, in April 2004, the Chief of Army Staff unveiled the new Cold Start concept. The goal of this limited war doctrine is to be able to launch a preemptive conventional strike against Pakistan that can inflict significant harm on the Pakistani army without providing a justification to Islamabad to escalate the clash to the nuclear level.

Cold Start seeks to leverage India’s modest superiority in conventional forces (see table 1).³⁸ This doctrine requires reorganizing the army’s offensive power away from the

³⁷ Y. I. Patel, “Dig Vijay to Divya Astra: A Paradigm Shift in the Indian Army’s Doctrine,” *Bharat Rakshak Monitor*, Vol. 6, No. 6 (May-July 2004).

³⁸ There is significant disagreement as to whether or not India possesses sufficient conventional superiority over Pakistan to warrant the discussions of a limited war strategy. For example, see Khurshid Khan, “Limited War under the Nuclear Umbrella and Its Implications for South Asia,” (Washington, DC: The Henry L. Stimson Center, May 2005), p. 21. Some analysts point to the conventional wisdom of a 3:1 superiority in offensive strength at the tactical level as being required for successful breakthrough operations and note that India’s deployed forces in the West only achieve parity with their Pakistani counterparts. Arzan Tarapore, “Holocaust or Hollow Victory: Limited War in Nuclear South Asia,” (New Delhi, India: Institute of Peace and Conflict Studies, February 2005), p. 16. Others suggest that a 1.5:1 superiority in forces at the theatre level, which India possesses, can result in successful offensive

three large strike corps into eight smaller division-sized “integrated battle groups” (IBG) that combined mechanized infantry, artillery and armor in a manner reminiscent of the Soviet Union’s operational maneuver groups.³⁹ The eight battle groups would be prepared to launch multiple strikes into Pakistan along different axes of advance. It is envisioned that the operations of the IBGs would be integrated with air support from the IAF and naval aviation. As one [retired general] described, India is now seeking to “mass firepower rather than forces.”⁴⁰ At the same time, the holding corps (re-designated “pivot corps,”) which have received additional offensive capability, would first man defensive positions and then contribute to the offense as necessary. All elements would engage in continuous operations, day and night, until the military objectives were achieved.

Rather than seek to deliver a catastrophic blow to Pakistan (i.e. cutting the country in two), the goal of Indian military operations would be to make shallow territorial gains (50-80 miles deep) that could be used in post-conflict negotiations to extract favorable concessions from Islamabad. Some commentators have emphasized the ability to quickly deliver a punishing blow to the Pakistani army, perceived to be the source of much of Pakistan’s aggressive foreign policy, while not harming civilian centers.⁴¹

operations. However, as Stephen Biddle has noted, “even outnumbered invaders can create a large local advantage on a chosen frontage” necessary for breaking through enemy lines by differentially concentrating forces against a small section of the battle line and deploying fewer troops elsewhere. Stephen D. Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton: Princeton University Press, 2004), p. 40. Dispensing with quantitative issues, some have argued that Pakistani forces are qualitatively superior to the Indians, which could make up for their numerical inferiority. “Pakistan Has Quality Army, India Has Quantity, Say Experts,” *Agence France-Presse* 22 May 2002, p. The source of the apocryphal “3:1 rule” appears to be Basil Liddell-Hart, *The Defense of Britain* (London: Faber and Faber Limited, 1939), p. 54. For a debate about the “3:1 rule” in conventional conflict see John J. Mearsheimer, “Assessing the Conventional Balance: The 3:1 Rule and Its Critics,” *International Security*, Vol. 13, No. 4 (1989). and the responses by Trevor N. Dupuy, “Combat Data and the 3:1 Rule,” *International Security*, Vol. 14, No. 1 (1989), Joshua M. Epstein, “The 3:1 Rule, the Adaptive Dynamic Model, and the Future of Security Studies,” *International Security*, Vol. 13, No. 4 (1989). In contrast, Holmes argues that a theatre-wide 1.5:1 superiority in forces would “guarantee” a 5:1 to 6:1 advantage in combat power “on 3 or 4 decisive strike axes.” He further notes that both the U.S. and the USSR considered such an advantage along an axis of advance as “practically guaranteeing the success of an offensive.” Kim R. Holmes, “Measuring the Conventional Balance in Europe,” *International Security*, Vol. 12, No. 4 (1988), p. 166.

³⁹ Patel, “Dig Vijay to Divya Astra: A Paradigm Shift in the Indian Army’s Doctrine.”

⁴⁰ [CITE]

⁴¹ [CITE]

Table 1
The India-Pakistan Correlation of Forces, 2006⁴²

Category	India	Pakistan	Ratio
Ground Forces			
Infantry divisions	32	18	1.7:1
Armored divisions	3	2	1.5:1
Armored brigades	8	7	1.1:1
Battle tanks	3,978	2,461	1.6:1
Air Forces			
Combat Aircraft	852	333	2.6:1
Naval forces			
Carriers	1	0	NA
Submarines	16	7	2.3:1
Destroyers	8	0	NA
Frigates	17	7	2.4:1

While the operational details of Cold Start remain classified, it appears that the goal is to have three to five IBGs entering Pakistani territory within 72 to 96 hours from the time the order to mobilize is issued.⁴³ As one Indian analyst argues,

They should be launching their break-in operations and crossing the “start line” even as the holding (defensive) divisions are completing their deployment on the forward obstacles. Only such simultaneity of operations will unhinge the enemy, break his cohesion and paralyze him into making mistakes from which he will not be able to recover.⁴⁴

A major emphasis of Cold Start is on the speed of both deployment and operations. The Indian army is seeking to take advantage of surprise at both the strategic and the operational level to achieve a decision before outside powers such as the United States and China can intervene on Pakistan’s behalf. There also appears to be an unspoken assumption that rapid operations will prevent India’s civilian leadership from interfering in military operations, should they possess insufficient resolve. The ability to execute Cold Start would make pre-emptive military strikes an option for India [, although it has not made any public statements to that effect.]

The perceived advantages of the Cold Start doctrine over its predecessor are four fold. First, it is believed that forward deployed division-sized units can be alerted faster and

⁴² Col. Christopher Langton, ed., *The Military Balance 2006* (London: International Institute for Strategic Studies, 2006). p 230-240.

⁴³ Jason Burke and Peter Beaumont report that some Indian planners believe that in a large-scale conflict they have “only 72 hours before a Pakistani leader, his defenses collapsing, reaches for the nuclear button.” Jason Burke and Peter Beaumont, “Nuclear Catastrophe Could Kill 12m in the First Hour,” *The Observer* 2 June 2002, p.

⁴⁴ [cite]

are more quickly mobilized than larger formations. By starting closer to the international border, the logistics requirements of both the battle groups and the pivot corps are significantly reduced, enhancing their maneuverability and the ability to surprise. Secondly, while division-sized formations can bite and hold territory, they lack the power to deliver a knockout blow. In the minds of Indian military planners, this denies Pakistan the “regime survival” justification for employing nuclear weapons in response to India’s conventional attack. Furthermore, multiple divisions, operating independently, have the potential to get inside the Pakistani leadership’s OODA loop, incapacitating their decision-making, as happened to the French high command in the face of the German *Blitzkrieg* of 1940. Indian planners believe that when faced with up to eight offensive thrusts, the Pakistani military will be hard pressed to determine where to concentrate its forces and which lines of advance to oppose. In a limited war, India’s overall goals are less predictable than in a total war, where the intent is almost certainly to destroy Pakistan as a state, and subsequently defense against Indian attacks is harder because the military objectives are less obvious. Thirdly, having eight units capable of offensive action rather than three significantly increases the challenge for Pakistani intelligence to monitor the status of all of the IBGs, increasing the chance of achieving surprise. Finally, if Pakistan were to use nuclear weapons against Indian forces, divisions present a significantly smaller target than corps do.

As the Indian military enhances its ability to implement Cold Start, it is simultaneously degrading the chances that diplomacy has to diffuse a future crisis on the sub-continent. During Operation Parakram, the three-week delay for strike corps mobilization provided enough time for the U.S. and other international actors to mediate the conflict. This is, of course, precisely what Cold Start is intended to avoid in the future. In a future emergency, the world may find integrated battle groups on the road to Lahore before anyone in Washington, Brussels or Beijing has the chance to act. The next section explores some of the additional implications of Cold Start for regional stability, particularly the potential risks of conflict escalation.

Implications of Cold Start for South Asian Stability

Some Indian strategic planners believe that it is possible to fight a limited conventional war against Pakistan without allowing the conflict to escalate to the nuclear level.⁴⁵ For example, former Chief of Army Staff General V.P. Malik has publicly argued that “space exists between proxy war/low intensity conflict and a nuclear umbrella within which a limited conventional war is a distinct possibility.”⁴⁶ Although the concept of limited war has its antecedents in the 19th century, its modern conception was developed

⁴⁵ For representative views, see Suba Chandran, “Limited War with Pakistan: Will It Secure India’s Interests?,” (Urbana-Champaign, IL: Program in Arms Control, Disarmament and International Security, University of Illinois, August 2004), p. 48, K. Subrahmanyam, “Indo-Pak Nuclear Conflict Unlikely,” *The Times of India* 2 January 2002, p.

⁴⁶ V.P. Malik, “Strategic Stability in South Asia” (panel discussion, Center for Contemporary Conflict, Monterey, CA, June 29-July 1, 2004).

during the Cold War, where the U.S.-Soviet nuclear standoff made the use of total force or the goal of total victory impossible in a clash between the two superpowers. Robert Osgood has defined limited war as one “fought for ends far short of the complete subordination of one state’s will to another’s, using means that involve far less than the total military resources of the belligerents and leave the civilian life and the armed forces of the belligerents largely intact.”⁴⁷

Can India undertake limited conventional operations against Pakistan without triggering a nuclear response? While the exact conditions under which Pakistan would use its nuclear weapons remains ambiguous, it has not ruled out employing them in response to a conventional attack. The clearest articulation of Pakistan’s “red lines” come from Lt. General Khalid Kidwai, then head of the Strategic Plans Division, who outlined the general conditions under which nuclear weapons could be used:⁴⁸

- India attacks Pakistan and conquers a large part of its territory.
- India destroys a large part of either its land or air forces.
- India proceeds to the economic strangling of Pakistan.
- India pushes Pakistan into political destabilization or creates large-scale internal subversion in Pakistan.

It is a well-worn military axiom that no plan survives contact with the enemy. Cold Start is an example of creative military problem solving in response to Pakistan’s stated rejection of a “no first-use” nuclear doctrine. By moving away from the Sundarji Doctrine, the Indian army believes that it is developing the ability to respond to Pakistan’s “proxy war” with conventional force, while remaining below the nuclear threshold. However, there is no reason to expect that Pakistan will not make its own innovations in response to Cold Start. It certainly wouldn’t be expected to sit idly by as chunks of its territory are gobbled up in small pieces by advancing Indian armies. An operational Cold Start capability could lead Pakistan to lower its nuclear “red line,” develop tactical nuclear weapons, or undertake some equally destabilizing course of action.⁴⁹

The fundamental concern about any limited war strategy in South Asia is that a conflict begun for limited aims escalates into a much bigger conflagration. Mort Halperin has identified two ways that a limited war can escalate into a larger conflict: deliberate and inadvertent.⁵⁰ A side that is losing a limited war could choose to escalate the conflict in order to avoid defeat. Alternatively, the course of a conflict can be overtaken by events which can cause it to move beyond the control or intended scope of the policy makers who initiated it. As a result, waging limited war can pose a number of challenges to political leaders who are attempting to achieve their aims through the use of force without escalating a conflict to the nuclear level. In particular, a limited war strategy poses four challenges for India: the challenge of setting political objectives, the challenge of Pakistani misperception, the challenge of agency, and the challenge of geography.

⁴⁷ Robert E. Osgood, *Limited War Revisited* (Boulder, CO: Westview Press 1979), p. 3.

⁴⁸ Paolo Cotta-Ramusino and Maurizio Martellini, "Nuclear Safety, Nuclear Stability and Nuclear Strategy in Pakistan," (Como, Italy: Landau Network, January 2001), p. 5.

⁴⁹ For a discussion of conditions which could lead Pakistan to lower its nuclear threshold, see Michael Krepon, Rodney W. Jones, and Ziad Haider, eds., *Escalation Control and the Nuclear Option in South Asia* (Washington, DC: The Henry L. Stimson Center, September 2004).

⁵⁰ Morton H. Halperin, *Limited War in the Nuclear Age* (New York: John Wiley, 1963), p. 11.

Political Objectives

The first challenge for policy makers is to craft a strategy and related objectives that are both achievable by the use of military force and limited enough to ensure that the conflict does not escalate to the nuclear threshold. Wars have a way of taking on a life of their own. Particularly once lives have been lost, money has been spent, and territory has changed hands, tremendous pressure can develop to expand the scope or objectives of a conflict. In theory, clearly defined strategic objectives with a properly developed correlation between means and ends can be an effective way to prevent the escalation of a conflict. It could be argued that in limited war the political objectives are even more important than in total war because limited war is much more a political than a military act. To avoid escalation, objectives must be set and means must be selected to achieve them that will not impact the other side's strategic interests.

However, two notes of caution are due in this regard. The first is recognition that as an interactive contest, the course of a war cannot be solely controlled by one of the parties. The success of efforts to limit the scope of escalation through the careful selection of limited objectives still depends on the opponent's reaction. Political-military objectives that are considered limited in New Delhi are not necessarily viewed the same way in Islamabad. Secondly, on the practical side, Operation Parakram, with its lack of clear objectives and its inconclusive result, doesn't necessarily inspire confidence in the ability of India's political leadership to set the kind of concrete objectives and associated military tasks that would be necessary to engage in limited warfare between two nuclear powers.

At present, it is not necessarily clear where a Cold Start-style limited military operation would be directed: Jihadi training camps in Kashmir? In pursuit of militants crossing the line of control? Against vulnerable parts of Pakistan as part of a response to a terrorist attack within India? It also remains to be seen how these limited military operations will contribute to India's grand-strategic goals, such as resolving the Kashmiri border, maintaining internal stability within Pakistan or cultivating improved strategic relations with China and the United States.

Misperception

The second challenge posed by a limited war strategy such as Cold Start is Pakistan's perception of the military operations. All too often policy makers forget Clausewitz' injunction that war is a reciprocal engagement. "In war, the will is directed at an animate object that reacts."⁵¹ The enemy's capabilities, intentions and perceptions must be taken into account.

Indian military planners may not have considered how threatening Cold Start offensive operations can appear to an opponent. Simply because one intends to pursue only limited objectives doesn't necessarily mean that these limited aims will be clearly perceived by the other side. In responding to the threat posed by Indian forces, Pakistan may react in a manner that Indian leaders view as "disproportionate" to the amount of

⁵¹ Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret (New York: Alfred A. Knopf, 1993), p. 149.

force employed in pursuit of their own narrow goals. This could, in turn, lead to a decision to escalate the conflict, which only serves to confirm Pakistan's perception that Indian aims are not limited and an escalation spiral could begin.

The role of misperception in crisis escalation is not an abstract academic concept. It has had a very real impact in South Asia. In 1987 a massive exercise carried out by the Indian Army in Rajasthan, code named Operation Brasstacks, precipitated a major mobilization by Pakistan, which believed it was about to be attacked. The Pakistani mobilization subsequently led Indian forces to assume a higher stage of alert, perpetuating a diplomatic crisis that was only resolved with the intervention of the U.S. and the USSR.⁵²

The fog of war can also lead to misperception of an opponent's intentions and actions. During wartime it can be extremely difficult to make sense of various disconnected and sometimes contradictory pieces of information in order to assemble a coherent understanding of a conflict's progress. Decision-makers are often forced to provide direction on the basis of incomplete information. Even with modern surveillance and communications systems, organizational and cognitive factors can cause a misinterpretation of ongoing combat operations. As Stephen Biddle has pointed out, intelligence and information on the battlefield is often ambiguous, requiring interpretation, which is often shaped by the previous beliefs and attitudes of the interpreter.⁵³

It is a common cognitive bias to assume that while our own actions are sometimes the result of chance or error, that an opponent's acts are always deliberate. George Questor recounts a classic example of how such misperception led to escalation of violence during the Second World War. Both German and Great Britain had significantly over-estimated the accuracy of each other's bomber capability. As a result, accidental bombing of population centers by the other side was viewed as a deliberate attack, which justified attacking enemy cities in response.⁵⁴ There is no reason to think that similar dynamics could not come into play in South Asia.

Agency

A third challenge to limited war is the issue of agency. Civilian political leaders may design a tightly integrated strategy with clearly defined objectives and goals, however they devolve responsibility to the military to execute their strategy. This is not to suggest that the Indian military is in any way an untrustworthy or unfaithful servant of the state, merely that, as an agent, the political leadership lacks total control over the details of a given strategy. Even if one doesn't accept Barry Posen's arguments that military organizations possess a bias towards offensive operations, it is easy to recognize that confusion, opportunity and local initiative can lead military officers to take actions to

⁵² [confirm this point] For a discussion of misperception and escalation in this episode see Kanti P. Bajpai et al., *Brasstacks and Beyond: Perception and Management of Crisis in South Asia* (New Delhi: Manohar, 1995).

⁵³ Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle*, p. 64. For a longer discussion of this issue, see Richard Ned Lebow, "Deterrence: A Political and Psychological Critique," in *Perspectives on deterrence*, ed. Paul C. Stern et al. (Oxford: Oxford University Press, 1989).

⁵⁴ George Quester, *Deterrence before Hiroshima: The Airpower Background to the Nuclear Age* (New Brunswick, NJ: Transaction Books, 1986), p. 115-122.

accomplish their military tasks but exceed or even run contrary to the broader political goals established by the state's policy makers.⁵⁵

Examples of this phenomenon are numerous and can be found in the history of almost every nation's military. For example, Richard Betts reports that, during the latter stages of the Vietnam War, Air Force General John Lavelle ordered twenty unauthorized bombing raids into North Vietnam, which had a negative effect on ongoing peace negotiations.⁵⁶ In the First World War, the disastrous British attempt to capture Baghdad, as well as much of the Mesopotamian campaign was launched by the local commander, Lieutenant General Sir John Nixon, without consulting London.⁵⁷ More recently, similar episodes have occurred in South Asia. Bruce Riedel has reported that during the 1999 Kargil Crisis, unknown to Prime Minister Sharif and the country's political leadership, the Pakistani army had undertaken steps to activate its contingency plans for a nuclear strike.⁵⁸ On the Indian side, during Operation Parakram, an aggressive Corps commander ordered armor elements of the II strike corps to advance into assault positions near the international border without prior approval.⁵⁹ The principal-agent dynamic that exists between the policy makers and the military illustrates how unintentional escalation could occur in the heat of battle—particularly if these “over aggressive” actions are subject to misperception by the enemy.

Geography

The final challenge posed by limited war is a result of the particular geography of South Asia.⁶⁰ Unlike during the Cold War, where the U.S. and the USSR engaged in a military competition abroad in a variety of theaters without facing the prospect of war, limited or otherwise, on their doorsteps, India and Pakistan are geographically contiguous.⁶¹ The fact that any conflict between the two neighbors, regardless of level, will occur on the home territory of one of the principal actors, makes the situation

⁵⁵ Posen, *The Sources of Military Doctrine : France, Britain, and Germany between the World Wars*.

⁵⁶ Richard K. Betts, *Soldiers, Statesmen, and Cold War Crises* (Cambridge, MA: Harvard University Press, 1977), p. 49-50. Lavelle was also accused of ordering his pilots to violate the standing rules of engagement by firing on targets in North Vietnam before they were fired upon. This was, necessary, Lavell argued, due to the increasing sophistication of the North Vietnamese radar system. Recently recent archival materials suggest that the Secretary of Defense, the Joint Chiefs of Staff and the White House were all aware of Lavell's “protective reaction” policy long before it became a national scandal. Bob Cuddy, "Son Hopes Revelations Will Bring Redemption," *McClatchy Newspapers* 2 March 2007, p.

⁵⁷ The British Army in India had landed troops at Abadan to control the oil fields there and subsequently occupied Basra. Nixon was the architect of the plan to capture as much of Mesopotamia as possible. Briton C. Busch, *Britain, India, and the Arabs, 1914-1921* (Berkeley, CA: University of California Press 1971).

⁵⁸ Bruce Riedel, "American Diplomacy and the 1999 Kargil Summit at Blair House," in *CASI Policy Paper* (Philadelphia, PA: University of Pennsylvania, May 2002).

⁵⁹ S. Kalyanaraman, "Operation Parakram: An Indian Exercise in Coercive Diplomacy," *Strategic Analysis*, Vol. 26, No. 4 (Oct-Dec 2002), p. 485.

⁶⁰ For an argument in favor of including geographic considerations in assessments of strategic stability, see Bernard Loo, "Geography and Strategic Stability," *The Journal of Strategic Studies*, Vol. 26, No. 1 (March 2003).

⁶¹ One possible exception is the Soviet involvement in Afghanistan which was arguably on the USSR's doorstep, but did not present the kind of challenge faced by India and Pakistan.

qualitatively different from the proxy conflicts of the Cold War which largely occurred in relatively unimportant third countries.

The physical geography of South Asia necessarily shapes the two countries views on limited war. India is four times larger and seven times as populace as Pakistan. From a strategic standpoint, India possesses great territorial depth, which Pakistan lacks. Forming a long, slender rectangle, Pakistan is 1,000 miles long, but averages only 300 miles wide. With it's length running parallel to India's northwest border, Pakistan is extremely vulnerable to flanking movements or a central assault that would spilt the country in two.⁶² Furthermore, a number of important Pakistani cities as well as transport networks and lines of communication lie close to the international border, compounding Pakistan's lack of defensive depth. For example, in the 1965 war, Indian forces were threatening Lahore within twenty-four hours of the start of the conflict.⁶³ Given Pakistan's lack of strategic depth, even the small incursions that "bite and hold" strategic territory envisioned under the Cold Start doctrine could pressure Pakistan to escalate the conflict.

The effects of the security dilemma and the relative incentives to "over react" to an opponent's actions can only be magnified in this relatively compact geographic space.⁶⁴

All four of the factors cited above (goal setting, misperception, agency and geography) can combine to make the notion of a limited war in South Asia a risky proposition. No matter how well trained and advanced Indian forces are. The danger of escalation is further compounded by the relatively immature state of the command and control and early warning systems of both India and Pakistan's nuclear arsenals.⁶⁵ Therefore it is very important to continue to monitor the Indian army's development of its Cold Start doctrine. As the capability to implement it increase, the political pressure to choose the military option in a future crisis increases as well. The following section provides an examination and assessment of the Indian military's progress in developing its Cold Start capability.

Assessment of Indian Progress Towards Cold Start

The likelihood of implementing the Cold Start doctrine in a future conflict with Pakistan depends on the political leadership in India at the time of the crisis. The political will to use pre-emptive force and the confidence that India's leaders have in their understanding of Pakistan's nuclear "red lines" will be two key determinants of that decision. These political factors can be difficult to determine in advance. However, it is possible to assess the Indian military's progress towards developing the capability to implement Cold Start.

Monitoring and assessing another nation's efforts to develop new means of warfare in peacetime can be difficult. Unlike other branches of government or industry where new products or ways of doing things can generate immediate feedback, military

⁶² John Arquilla, "Nuclear Weapons in South Asia: More May Be Manageable," *Comparative Strategy*, Vol. 16, No. 1 (1997), p. 16.

⁶³ Desmond E. Hayde, *The Battle of Dograi and Batapore* (New Delhi: Natraj Publishers, 2005).

⁶⁴ CITE SECURITY DILEMA

⁶⁵ CITE

organizations do not spend the majority of their time undertaking their core task: fighting the nation's wars. Opportunities to test and demonstrate new military capabilities in the crucible of war are typically few and far between. Nevertheless, with careful study it is possible to evaluate a particular military's attempts to conceive new warfighting techniques. Thomas Mahnken has advanced a framework for studying foreign military innovation.⁶⁶ Recognizing that "innovation is a process that unfolds over years or decades" he identifies three distinct phases of the process: *speculation*, *experimentation* and *implementation*.⁶⁷

The first phase focuses on conceptual development and identification of new ways to solve existing military challenges.⁶⁸ Activity in this phase is largely confined to intellectual output such as studies, speeches, writings in professional journals, and even books that promote new methods of conducting military operations. Speculative concepts embraced by a military organization move to the experimentation phase when wargames or field exercises are conducted to explore these new warfighting concepts. In some cases, experimental units may be created to carry out these tests. Warfighting concepts that have been successful at the experimentation phase may move on to implementation. Here, militaries adopt new warfighting practices and make the organizational changes necessary to implement them. Mahnken identifies several visible indicators that new combat methods have been adopted. Among them are the establishment of new military formations, the dissemination of new military doctrine, the establishment of new service branches or career paths to support the new concept, or widespread training in the new warfighting method.⁶⁹

Turning to the specific case of Cold Start, it is possible to apply Mahnken's framework to judge the Indian Army's progress towards developing an operational Cold Start capability. Based on the available evidence, it appears that Cold Start remains within the experimental stage of development. The limited war strategy has moved beyond mere theoretical discussions in professional military journals but has not yet produced the widespread organizational changes required for full implementation. This assessment is based on a study of three areas in which to judge Indian advancement towards the requirements of Cold Start: the demonstration of the operational capabilities required to execute the doctrine, the implementation of the organizational change the doctrine requires and the development of infrastructure required to support the envisioned military operations.

Demonstration of Operational Capabilities

War games and military exercises are simulations designed to train soldiers and test battlefield tactics. As simulations they approximate the reality of battlefield conditions, but do not replicate them. Even the most advanced "free play" simulation (meaning a

⁶⁶ Thomas G. Mahnken, "Uncovering Foreign Military Innovation," *Journal of Strategic Studies*, Vol. 22, No. 4 (December 1999).

⁶⁷ *Ibid.*, p. 31, 48.

⁶⁸ For a full discussion of all three phases see *Ibid.*, p. 30-33.

⁶⁹ *Ibid.*, p. 33.

two-sided game in which either side can win) lacks the confusion, emotion, and uncertainty that Clausewitz says distinguishes “real war from war on paper.”⁷⁰

Nevertheless, the study of a unit’s performance in war games and exercises can provide insight into their military capabilities. While the ability to execute military tasks in a simulation or on the proving ground does not indicate the ability to execute such tasks in actual combat, the inability to do so in a structured environment virtually guarantees the inability to do so in wartime.

The military requirements to implement Cold Start doctrine include the employment of highly mobile units capable of generating substantial organic firepower, sophisticated intelligence resources, and sufficient command-and-control capabilities to coordinate multiple combined-arms battlegroups operating in conjunction with air support. As the previous discussion of maneuver warfare indicated, making this work requires both highly trained staff officers as well as junior field commanders capable of taking the initiative and responding to events as they unfold on the battlefield.

In assessing India’s ability to implement its Cold Start doctrine, military exercises can provide indications of capabilities in three areas. The first is a demonstrated capability to execute tasks directly related to Cold Start such as offensive action by pivot corps, short mobilization pre-emptive attacks, or independent operations by multiple offensive units. The second relevant capability is the conduct of joint-service warfare. In terms of Cold Start, this is primarily the ability of the Indian Army and Indian Air Force to integrate and synchronize their operations, though the air component of the Indian Navy is, to a lesser extent, also relevant in this area. Cold Start assumes that significant close air support will be provided to offensive units by the IAF, so joint operations are a key to making the doctrine work. The third area of interest is evidence of network-centric warfare capability. Network-centric warfare theory hypothesizes that the networking of geographically dispersed forces via advanced IT tools can increase the sharing of information and enhance situational awareness, which amplifies the speed of decision-making and improves the synchronization among dispersed forces—both of which enable a networked force to get inside their enemy’s OODA loop.⁷¹ The successful employment of networked sensor systems (unmanned aerial vehicles or UAVs, reconnaissance satellites, advanced radar, etc.) and sophisticated communications suites by combat units and their headquarters in war games is evidence of potential network-centric warfare capability.⁷²

Since 2004, India has held four exercises of varying sizes that tested or demonstrated capabilities required by Cold Start. Each will be discussed in turn.

Divya Astra

The first exercise to demonstrate aspects of the new Cold Start doctrine was the March 2004 exercise code named *Divya Astra* (Divine Weapon). Taking place at the Mahajan Firing Range [where?], 70km from the international border, this 90-minute tactical battle scenario featured army and air force elements undertaking operations to penetrate fixed enemy fortifications through a mechanized assault supported by artillery

⁷⁰ Clausewitz, *On War*, p. 119.

⁷¹ [CITE]

⁷² Add discussion of why this is relevant/important for Cold Start

and ground attack aircraft.⁷³ The purpose of this exercise was to test the ability of the various combat arms, as well as the air force, to deliver integrated firepower.

At the start of the scenario, an infantry combat team advanced to contact with the enemy force who were occupying a fortified stronghold. Fire support from advanced Russian-built GRAD multi-barreled rocket launchers, 155mm Bofors howitzers and tanks was employed to degrade enemy defenses. When these efforts “failed,” ground attack aircraft—in the form of MiG-21s armed with rockets, MiG-23s deploying conventional bombs, as well as Mi-35 helicopter gunships—were employed to penetrate the fortifications. After the aircraft had completed their attack runs, the objective was taken by a close assault of tanks and infantry fighting vehicles. *Divya Astra* also included a demonstration by a unit of combat engineers who bridged a 60-meter wide canal within 30 minutes using truck-mounted bridges capable of supporting tanks.⁷⁴

Divya Astra featured equipment and weapons systems that India had acquired from Russia and Israel as part of its on-going military modernization. The exercise marked the first time that the Indian Army had employed the Russian built T-90 tank, which was supported by Russian BMP II armored personnel carriers. Both armored vehicles demonstrated their ability to conduct operations in nuclear, biological and chemical (NBC) environments as part of the drill.⁷⁵

The Indian Army also employed its latest Israeli-built reconnaissance and surveillance systems. The Long Range Observation System (LOROS) allowed day and night tracking of men and vehicles up to a range of 18 kilometers. This truck-mounted system, which consists of a night camera, laser range finder, and electronic surveillance equipment provided battle space awareness to commanders as well as target acquisition capability for directing artillery fire.⁷⁶ Also employed were the ELM-2140 battlefield surveillance radar, with a range of 40km, and hand-held thermal imagers that allow the detection of targets at night.⁷⁷

Commenting on the performance of the recently acquired weapons and sensor systems, then-Chief of the Army Staff General N.C. Vij said that their introduction had led to a 50-fold increase in the Army’s ability to detect and neutralize enemy forces. He also noted that the army was seeking to procure self-propelled artillery guns which could keep pace with advancing armored units during offensive operations—a further example of substituting firepower for mass.⁷⁸

Divya Astra demonstrated the Indian military’s emerging capabilities in reconnaissance, intelligence, surveillance, and target acquisition (RISTA), which are important components of the network-centric operations required by Cold Start. However, the brief demonstration was a scripted exercise rather than a two-sided “free play” war game. The need for such scripting and the subsequent failure of the Army and Air Force components to demonstrate a high level of joint warfare capability suggested that India had far to go in this regard.

⁷³“Indian Army Displays Firepower near Pakistan Border,” (India: Doordarshan National Television, 1430 GMT 02 March 2004).transcript provided by the Open Source Center, www.opensource.gov.

⁷⁴ Vijay Mohan, “Army Flexes Its Firepower,” *The Tribune of Chandigarh* 2 March 2004, p.

⁷⁵ “Indian Army Displays Firepower near Pakistan Border.”

⁷⁶ Vijay Mohan, “Army’s Tactical Network Goes Hi-Tech,” *The Tribune of Chandigarh* 12 May 2005, p.

⁷⁷ “Indian Army Displays Firepower near Pakistan Border.”

⁷⁸ Vijay Mohan, “Big Increase in Infantry Firepower: General Vij,” *The Tribune of Chandigarh* 2 March 2004, p.

Vajra Shakti

Concrete tests of the Cold Start concepts were seen in the May 2005 *Vajra Shakti* (Thunder Power) exercise which took place on the plains of **Jalandhar** in Punjab, roughly 80 kilometers from the international border. This area was the scene of significant tank battles between India and Pakistan during their 1965 and 1973 wars. The 10-day exercise involved 25,000 troops from the Panther Infantry Division and the Flaming Arrow Armored Brigade of the XI Corps (Vajra Corps), one of the Indian Army's pivot corps.⁷⁹ This exercise was the first demonstration of the ability of units from the previously defense-oriented pivot corps to undertake the kind of offensive operations that would occur at the outbreak of large-scale hostilities.

In the scenario, "Blue Land" (friendly) forces squared off against the adversary "Red Land" forces across the **Sutlej River** which simulated the international border with Pakistan. The exercise presupposed that relations between the two nations degenerated to the point where the Blue forces launched a pre-emptive attack followed by a rapid advance into Red territory. Nine days of simulated attacks and counterattacks by both sides resulted in Blue forces advancing 30 kilometers into enemy territory, setting the stage for a Strike Corps to launch a substantial follow-on offensive.⁸⁰ The Indian Air Force also took part in *Vajra Shakti* with the air forces of both Blue and Red undertaking 130 day and night sorties to degrade enemy mechanized forces as well as attack targets in depth.⁸¹

As in *Divya Astra*, operations in *Vajra Shakti* were conducted against the backdrop of nuclear, biological and chemical weapon use by the adversary, further testing the ability of both the Indian Army and the Indian Air Force to operate in contaminated environments. *Vajra Shakti* also introduced the significant use of electronic warfare by both sides.⁸²

The expanded intelligence, surveillance and reconnaissance capabilities of the Indian military were also put to the test by *Vajra Shakti*. Both the LOROS and the ELM-2140 battlefield radars were tested on a much larger scale than they had been with *Divya Astra*. Real-time situational awareness was provided by satellite imagery, as well as by Army and Air Force unmanned aerial vehicles, to track the enemy's positions and movements. Much of the 'fighting' in *Vajra Shakti* took place at night, which tested the night-fighting abilities of the troops involved and provided experience in employing night vision equipment and thermal imagers under realistic conditions.⁸³

Vajra Shakti was a proper demonstration of Cold Start capability, most notably the ability of the notionally defensive pivot corps to conduct limited offensive operations on short notice. From a joint operations perspective, a significant accomplishment of *Vajra Shakti* was the integrated planning of operations by the Air Force and the Army: the **Vajra** Corps headquarters and the No. 1 Tactical Air Center of the Western Air Command jointly planned the exercise. Coordination between the services was much

⁷⁹ Vijay Mohan, "Army Tests New War Concepts," *The Tribune of Chandigarh* 10 May 2005, p.

⁸⁰ *Ibid.*, p.

⁸¹ Ajit K. Dubey, "Gaming for War," *Force* (June 2005). FBIS SAP20050622000105.

⁸² Subhash Kapila, "Indian Army Validates Its Cold Start War Doctrine," South Asia Analysis Group, 7 June 2006. Accessed on-line at www.saag.org on 12 August 2006.

⁸³ Dubey, "Gaming for War."

improved from the 1999 Kargil operation, the last time joint Army/Air Force operations were attempted.⁸⁴

The successful integration of 'real time' information sources (UAVs, radar, satellite imagery) with command and control structures indicated that the Indian Army had taken its first steps towards network-centric warfare. The time required for commanders to make an assessment of the situation on the battlefield and make corresponding tactical decisions had been reduced considerably from previous conflicts where 'current' battlefield intelligence was hours or even days old.⁸⁵

The successful conduct of both ground and air operations in *Vajra Shakti* represents an important achievement, but it does not necessarily indicate that such capability exists across the entire Army and the Air Force. Moreover, a number of infantry and armored units, as well as elements of the Air Force, spent several days undertaking practice drills before the *Vajra Shakti* exercise began. The need to rehearse doctrinal concepts and practice methods for offensive and defensive operations suggests that more time will be required before the Cold Start doctrine is fully internalized by the Army and the Air Force.⁸⁶

Desert Strike

Six months after *Vajra Shakti*, the Indian military undertook another test of both its new doctrinal concepts and ability to conduct joint operations, in a 14-day exercise code named Desert Strike and conducted in Rajasthan's Thar Desert. Employing 25,000 soldiers from the Bhopal based XXI Strike Corps as well as artillery, tanks and fighter aircraft from the Indian Air Force's [what unit?], Desert Strike was the largest exercise conducted by the Indian military since the 1987 Operation Brass Tacks war game nearly brought India and Pakistan to the brink of war.⁸⁷

The stated purpose of the exercise was to test the ability of a strike corps to conduct joint operations with combat squadrons from the IAF. In particular, units were being tested on their ability to conduct fast-paced, operational-level maneuvers in a desert environment alongside high-tech electronic and information warfare. According to Lieutenant General Panag, the officer responsible for Desert Strike, this was a further test of the Indian military's ability to conduct network-centric operations.⁸⁸ Specifically the exercise sought to test:

- The employment of networked surveillance, target acquisition and reconnaissance assets to enhance battlefield situational awareness
- The exploitation of real-time sensor-to-shooter links to allow synergized strikes by land and air forces
- The military's ability to defeat an enemy by causing psychological collapse through the use of pre-emption, dislocation and disruption⁸⁹

⁸⁴ Ibid.

⁸⁵ Mohan, "Army's Tactical Network Goes Hi-Tech," p.

⁸⁶ Rajat Pandit, "Army Set for War Exercise to Test New Doctrine," *The Times of India* 29 April 2005, p.

⁸⁷ "Desert Strike to Unleash Network-Centric Warfare," *The Pioneer* 17 November 2005, p. "India Displays Its Military Might," *Pakistan Observer* 20 November 2005, p.

⁸⁸ "Exercise Desert Strike," *Force* (December 2005). Accessed at www.forceindia.net (July 15, 2006).

⁸⁹ Ibid.

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In focusing on these objectives, the Indian military is consciously modeling their efforts on the U.S. success in Operation Desert Storm and the conventional portions of Operation Iraqi Freedom, which they describe as “key examples of successful military campaigns in which action was initiated by air power and sustained by ground operations.”⁹⁰

Units participating in Desert Strike undertook a number of maneuvers under battlefield conditions: Howitzer batteries demonstrated the ability to deploy and open fire within 90-seconds; Army paratroopers practiced dropping behind enemy lines, and armored units conducted fast-moving assaults along multiple axes of advance, while the Air Force carried out surgical strikes in support of advancing ground forces.⁹¹ Targets involved in these various drills included enemy armored regiments, ground forces, command centers, and logistics bases.⁹²

The capstone element of Desert Strike was an assault on an enemy strongpoint that was defended by a minefield. To begin the attack, Special Forces from the 10 Para were dropped near the enemy position. Using laser designators to mark targets, the Special Forces provided guidance to a battery of howitzers as well as Mirage 2000H aircraft that attacked the target from 15,000 feet with laser-guided bombs. With enemy defenses disrupted by the aerial/artillery bombardment, the position was jointly assaulted by a unit of T-90 tanks and infantry fighting vehicles (IFV) firing surface-to-surface missiles. Physical control of the objective was gained by dismounted infantry fighting alongside their IFVs.⁹³

The military’s reconnaissance, surveillance, and target acquisition capabilities were again put to the test in battlefield conditions by Desert Strike as a range of sensors and surveillance devices were networked via video and data links based on satellite and ground-based communications systems.⁹⁴ This sensor-to-shooter integration during Desert Strike allowed UAVs to detect targets that were subsequently destroyed by precision air force or artillery strikes firing from beyond visual range.⁹⁵

As in previous exercises, the units involved in Desert Strike assembled several days prior to the exercise to rehearse a range of maneuvers and battle drills required by the Cold Start doctrine. The continuing need for pre-exercise preparation, particularly by units from an offensive oriented (and presumably elite) strike corps, suggests that the Indian army still widely lacks the expertise to employ the new doctrine.

The success that the Indian military had in integrating advanced sensor systems into its nascent network-centric warfare capability highlights a significant shortcoming: limited communications bandwidth. During Desert Strike, unit commanders spent hundreds of man-hours on satellite video conferences between various formation

⁹⁰ Pratap Chakravarty, "India Holds Major War Games at Pakistan's Uneasy Borders," *Agence France-Presse* 18 November 2005, p.

⁹¹ "Army Demonstrates Vision of Fighting a Short and Intense War," *Daily Excelsior* 20 November 2005, p, "India Showcases Military Might to Foreign Observers," *Indo-Asian News Service* 18 November 2005, p.

⁹² *Army, Air Force Plan "Exercise Desert Strike"* (17 November 2005 [cited 17 July 2006]); available from www.india-defence.com.

⁹³ "India Showcases Military Might to Foreign Observers," p, Pravin Sawhney, "A Good Beginning," *Force* (December 2005).

⁹⁴ "Exercise Desert Strike."

⁹⁵ *Ibid.*

headquarters. According to one analyst, if you scale the bandwidth usage by commanders during Desert Strike and add in other necessary exchanges of voice and data, a widespread conflict on the sub-continent could require 3.3 GHz of bandwidth for the military alone.⁹⁶ This is the equivalent provided by three commercial telecommunications satellites. As UAVs become more prevalent across the military and the armed forces become ever more “information-centric,” these demands for bandwidth will continue to grow.

Sanghe Shakti

May 2006 saw the largest test of Cold Start doctrine to date as a Corps-level exercise code named *Sanghe Shakti* (Joint Power) took place in Punjab [more details on location?]. Upwards of 40,000 soldiers from the 1st Armored Division, 14th RAPID Division and 22nd Infantry Division of the Ambala based II Strike Corps participated in the [x day long] war games.⁹⁷ The fact that the II Strike Corps was tested during *Sanghe Shakti* is significant because it contains 50% of the Indian Army’s offensive power and is the formation that would be tasked with conducting an armored thrust through the Cholistan desert to cut Pakistan in two in the case of a general war on the subcontinent.⁹⁸

Sanghe Shakti was a sequel to the May 2005 *Vajra Shakti* exercise. *Vajra Shakti* tested the ability of a notionally defensive “pivot” corps, the XI Corps, to conduct multiple limited-offensive thrusts across the international border into enemy territory on short notice. In turn, *Sanghe Shakti* tested the ability of a strike corps to quickly mobilize and then exploit the openings in the enemy defenses that had been created by the pivot corps’ surprise attack.⁹⁹ Dropping the pretense of using ‘red’ and ‘blue’ to refer to the opposing sides in the scenario, *Sanghe Shakti* posits that a war had broken out between India and Pakistan and that II Corps had been tasked with invading and dividing Pakistan in half.¹⁰⁰ As the commander of II Corps told reporters, “This will put to the test our 2004 war doctrine to dismember a not-so-friendly nation effectively and at the shortest possible time.”¹⁰¹

After the requisite mobilization of forces and deployment to the exercise area, units from II Corps spent several days rehearsing various combat drills. The capstone exercise consisted of a blitzkrieg-like armored incursion into “enemy territory.” Emphasizing rapid penetration, flank security for the armored units was provided by attack helicopters, while enemy strong points were bypassed and cut off by advancing units. Close air support from the Indian Air Force’s MiG-23s, MiG-21s and Mirage-2000s provided mobile fire support that could keep pace with the advancing armored columns.¹⁰² At one point in the exercise, IL-96 and AN-32 transport planes dropped a

⁹⁶ Prasun K. Sengupta, "The Final Frontier," *Force* (February 2006).

⁹⁷ Rajat Pandit, "Massive Army Exercises in Punjab, Rajasthan," *The Times of India* 3 May 2006, p.

⁹⁸ *Ibid.*, p.

⁹⁹ "Cold Start, Quick Thrust," *The Telegraph of Calcutta* 17 May 2006, p.

¹⁰⁰ Vivek Raghuvanshi, "Indian Army Winding Down Exercise near Pakistani Border," *Defense News* 15 May 2006, p. www.defensenews.com (10 October 2006).

¹⁰¹ S.M. Hali, "Pakistan Specific Wargames," *The Nation of Islamabad* 10 May 2006, p.

¹⁰² Shiv Arora, "Exercise Sanghe Shakti Eliminates Operation Parakram Flaws," *The Indian Express* 20 May 2006, p.

battalion of paratroopers behind “enemy lines” in a night-time air assault.¹⁰³ Ground and air operations continued around the clock, demonstrating the military’s ability to operate around the clock.

Sanghe Shakti’s scenario assumed that Pakistani forces used chemical weapons against the Indian military, so lead assault units employed NBC protection equipment and mock decontaminations of personnel and equipment took place.¹⁰⁴ Unlike many of the previous exercises which had been conducted in relatively clear terrain, *Sanghe Shakti* included operations in built-up terrain, forcing advancing units to navigate inhabited areas and practice crossing waterways and canals in battlefield conditions.¹⁰⁵

Public assessments of *Sanghe Shakti* by the Indian high command praised it as a highly successful simulation that had “validated” India’s new limited war doctrine.¹⁰⁶ Particularly exciting to Cold Start enthusiasts was the indication that the time frames for the mobilization of a strike corps had been shortened considerably. One estimate by the Army indicates that the II Corps in *Sanghe Shakti* had managed to shave off “days if not weeks” from the mobilization time that was required in Operation Parakram.¹⁰⁷ However, analysis of joint Army/Air Force operations at the operational and tactical levels during *Sanghe Shakti* indicated persistent inter-operability issues that belie previous claims by the military that “there is seamless integration [between the Army and Air Force] at all levels.”¹⁰⁸ At present, it appears that more time and further exercises are required at smaller unit levels to achieve the kind of joint operational ability that the Cold Start doctrine requires.

Insights from the War Games

These four exercises have illustrated the progress made by the Indian military in the implementation of Cold Start concepts, the undertaking of joint operations, and the employment of information technology to gain the advantages of network-centric warfare. Of these three areas, the most capability has been demonstrated in the use of IT systems on the battlefield. The Indian military has had good success in integrating advanced sensor systems as well as communications equipment and surveillance platforms such as UAVs in a sensor-to-shooter network. Advanced equipment procured from Israel, Russia and elsewhere has made real contributions to Indian RISTA capabilities. Bandwidth issues could pose a problem in the case of a general war, however, the army has taken steps to address the issue, such as the deployment of the “Mercury Thunder” communications network which employs optical fibers, microwave radios and satellites to transport large amounts of bandwidth in support of military operations.¹⁰⁹

¹⁰³ "IAF Exercise "Sanghe Shakti" Reaches Its Climax," *Outlook India* 17 May 2006, p. www.outlookindia.com (10 October 2006).

¹⁰⁴ "Cold Start, Quick Thrust," p.

¹⁰⁵ "Army, IAF to Conduct Joint Exercise," *The Tribune of Chandigarh* 17 May 2006, p.

¹⁰⁶ "Vice Army Chief Shares Changes in Military Doctrine, Equipment, Thinking," *Force* (June 2006).

¹⁰⁷ Aroor, "Exercise Sanghe Shakti Eliminates Operation Parakram Flaws," p.

¹⁰⁸ *Ibid.*, p. For Lt. General Panag’s claims that “All [Indian military] operations are ‘joint’ from the word go, both in planning, selection of objectives and execution at the strategic, operational and tactical levels,” see "Exercise Desert Strike."

¹⁰⁹ Girja Shankar Kaura, "New Network for Indian Army," *The Tribune* 13 September 2006, p.

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A moderate amount of progress has been made in developing the ability to employ Cold Start in simulated environs. In *Vajra Shakti* a pivot corps was able to initiate offensive operations and advance 30km into enemy territory. *Sanghe Shakti* showed that a strike corps could deploy from its base areas to the conflict zone much rapidly enough to exploit the openings in enemy defenses created by the pivot corps attack. However, in both cases extensive preparation and rehearsals were required for the units involved, even those of the elite strike corps. This suggests that the training and preparation in the Army have not yet reached the levels required to truly implement the Cold Start doctrine.

Considerably less success has been achieved in the areas of joint operations. Successful coordination in planning operations by the Army and the Air Force has yet to translate into the kinds of synergy required at the operational and tactical levels. Even with rehearsals it was difficult for the two services to integrate their actions in the four wargames considered here.

Organizational Issues

From an organizational standpoint one of the first visible signs that India was taking steps towards implementing Cold Start was a restructuring of the forces on the border with Pakistan. To reduce the burden on the Army's Western Command, which had responsibility for the area of the international border from Rajasthan to Jammu, on April 8, 2005 a new South Western Command came into being with its headquarters at Jaipur. Carved out of the operational area formerly covered by the Western Command, the new South Western Command covers key areas in Punjab and Rajasthan. Western Command is then free to focus its attention on the border region between Pathankat and Jammu.¹¹⁰

Creating an additional command not only relieves responsibility for a large stretch of territory from the existing headquarters units, but it also streamlines command and control of the forces along the western border. If Cold Start is employed, the demands on headquarter staffs would be significant. The creation of a new command enables better battle space management of the increased number of units that would have to be forward deployed in the border region.

South Western Command has had a pivot corps and the assets of a strike corps assigned to it, and the Chief of the Army Staff has publicly stated that the command possesses both offensive and defensive units. However, published reports indicate that the strike elements assigned to SWC have not yet taken up position in the border areas.¹¹¹

For the Indian army to achieve the surprise and rapid mobilization envisioned in Cold Start, its offensive forces would have to be based close to the international border. Another clear sign that India was moving towards Cold Start would be the deployment of offensive capabilities either within its pivot corps or in the border area rather than deep in India's heartland where the strike corps are currently positioned. At this point there is no public evidence that the integrated battle groups have been formed or deployed alongside the pivot corps. Writing in July of 2006, General S Padmanabhan, former Chief of Army Staff, argues in favor of Cold Start. However his argument that holding corps, "should be

¹¹⁰ "India's Cold Start Doctrine: DGMO to Brief Senior Commanders Today," *Pakistan Times* 29 April, 2005 (accessed at <http://pakistanimes.net> on 14 August 2006), p. <other source?>

¹¹¹ <muscle for new command.>

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enabled to take up 'cold start' offensives by grouping them with mechanized forces, airborne/heliborne forces as the case may be" seems to indicate that this has not occurred. The fact that offensive elements from the strike corps assigned to South Western Command, as discussed above, have yet to take up forward positions, supports the idea that the Indian army has not yet taken the step of positioning its offensive assets within striking range of the border.

Cold Start's full implementation also faces two other organizational hurdles: inter-service rivalries and civil-military relations. Cold Start is primarily a creation of the Indian army that employs air power in a supporting role according to the Army's own vision of joint warfare. As Y.I. Patel notes, this plan runs counter to the Indian Air Force's own concept of joint operations.¹¹² An operational Cold Start capability would therefore require the Air Force to support the concept at a level at which they have heretofore been unwilling to do.

A second organizational roadblock is the issue of civil-military relations in India. Since independence, the political leadership of the country has attempted to exercise close control over military operations. This has mixed implications for Cold Start. On the one hand, if this close oversight can result in the kind of clear political objectives required to prevent a limited war from escalating, it is possible that Cold Start would be more likely to be employed. On the other hand, the kinds of independent military operations envisioned by Cold Start that could be launched on short notice, are not necessarily conducive to the degree of political control India's political leadership has exercised in the past. Unless India's political classes can either increase their comfort levels with devolving authority to junior officers in the field who take independent initiative in military operations or find a way to provide timely command and control to rapidly unfolding military operations, Cold Start will face significant political barriers to employment.

Addressing either the challenge of inter-service coordination and/or the need to enhance the civil-military relationship could be accomplished by the creation of the position of Chief of the Defense Staff (CDS). In 2001, the Indian government took a half-step to joint warfare by creating the Integrated Defense Staff. This body is charged with the management of defense issues, particularly long-term planning. It is supposed to be headed by the Chief of the Defense Staff, who would also serve as the principal military advisor to India's political leadership. However, a combination of bureaucratic infighting, political disagreements and some degree of concern about concentrating so much military authority in a single office, have prevented a CDS from ever being appointed. The Integrated Defense Staff is instead headed by an officer who would be the Vice-Chief of Defense Staff, should a Chief ever be appointed. In this capacity, rather than being their leader, he is actually subordinate to the service chiefs of the Indian Army, Navy, and Air Force. The appointment of a Chief of Defense Staff would signal that India was getting serious about its joint warfighting capabilities and therefore enhance its abilities to implement Cold Start. Furthermore, appointing a single general officer to serve as military advisor to India's senior leadership, similar to the role played by the Chairman of the Joint Chiefs of Staff in the United States, could ameliorate some of the civil-military tensions inherent in Cold Start.¹¹³

¹¹² Patel, "Dig Vijay to Divya Astra: A Paradigm Shift in the Indian Army's Doctrine."

¹¹³ [\[expand\]](#)

Infrastructure Issues

The forward deployment of integrated battle groups and other offensive elements capable of undertaking Cold Start operations requires the construction of new support infrastructure not only to house the units themselves, but also the logistical “tail” that supports them. Stationing division-sized forces in the border region will require the expansion of existing facilities and the construction of new ones. Forward locations close enough to the international border would be located along a line stretching from Barmer-Jaisalmer-Bikaner-Suratgarh. It is likely that the IBGs would be co-located with existing units from the “pivot” corps in their area of operations. Key strategic locations in this regard include the cantonment at Bathinda, Punjab (the largest cantonment in India) and the 24th RAPID base at Bikaner.

At this point, there is no indication in open source materials that these required facilities are being developed. While it might be possible to hide some new construction within existing facilities, given how closely the Pakistanis and Indians are watching each other, it is reasonably safe to assume that the construction of facilities to house nine divisions worth of armor, vehicles and soldiers along the border would attract attention. By contrast, Pakistan’s significantly more modest construction of new bunkers and observation towers on its side of the border adjacent to Barmer, Jaisalmer and Bikaner in December 2005 attracted Indian [attention and press coverage.]

Conclusion

The Indian army is taking the lead in developing a new limited war doctrine for responding to the specific challenges posed by Pakistan’s “proxy war” strategy. While this Cold Start doctrine would represent a significant advance in India’s conventional capabilities, such a strategy runs the risk of provoking or escalating a crisis on the sub-continent that could breach the nuclear threshold. Recent military exercises and associated organizational changes indicate that while India is making progress towards developing an operational Cold Start capability, they are not there yet. This is a development that should continue to be studied. As India progresses towards a Cold Start capability, the political pressure to employ such a strategy in a time of crisis increases tremendously.¹¹⁴

¹¹⁴ [EXPAND CONCLUSION]