SPECIAL ISSUE BRIEF

India's Military Modernization: Plans and Strategic Underpinnings

Brig Gurmeet Kanwal (Retd)

This issue brief was first published by the National Bureau of Asian Research and is re-produced here with their permission

As a key player in Asia and a large democracy with which the United States shares common interests, India is emerging as an important U.S. strategic partner. There is a broad national consensus in India on the contours of this emerging relationship with Washington, particularly with respect to enhanced defense and civil nuclear energy cooperation. During his visit to New Delhi in June 2012, U.S. defense secretary Leon Panetta identified India as a "linchpin" in Washington's emerging "rebalancing" strategy in the Asia-Pacific region. While there was no reaction from the Indian government, it is clear that these two large democracies need to work together militarily in order to maintain freedom of the seas in the Indian Ocean region and to ensure peace and stability in the Asia-Pacific more generally. Should China experience political instability or behave irresponsibly in asserting its territorial rights—as it has shown a tendency to do in the South China Sea—both India and the United States will need strong strategic partners to face worst-case scenarios effectively.

In order to meet future threats and challenges and achieve interoperability with U.S. and other friendly armed forces for joint operations in India's area of strategic interest, the Indian military needs to modernize and create force structures that are capable of undertaking network-centric warfare on land, at sea, and in the air. Gradually, but perceptibly, the Indian armed forces are upgrading their capabilities, enhancing their kinetic effectiveness and command and control, and improving interoperability. This brief analyzes the threats and challenges that India must address, the measures being adopted to modernize the country's armed forces, and the strategic underpinnings behind this slow but steady modernization effort.

Preparing for a Two-Front War

South Asia is among the world's most unstable regions due to the ongoing war against al Qaeda and the Taliban in Afghanistan and on the Afghanistan-Pakistan border. In addition, growing fundamentalist terrorism; creeping "Talibanization" in Pakistan; political instability in Bangladesh, Myanmar, Nepal, and Sri Lanka; unrest in Tibet and Xinjiang; narcotics trafficking; and the proliferation of small arms and light weapons are also destabilizing factors. Unresolved territorial and boundary disputes with China and Pakistan, over which India has fought four wars; internal security challenges in Jammu and Kashmir (J&K) and the northeastern states; and the rising tide of the Maoist insurgency in the heartland further vitiate India's strategic environment. Further, many Indian security analysts worry that China is engaged in the strategic encirclement of

India through its nuclear and missile nexus with Pakistan; the sale of military hardware to Bangladesh, Nepal, Myanmar, and Sri Lanka; and a "string of pearls" strategy to surround India with naval bases in the northern Indian Ocean region.

India-China relations are stable at the strategic level. Resolution of the territorial dispute is being discussed by India's national security adviser and China's vice foreign minister, military confidence-building measures are holding up, bilateral trade has increased to $60 billion, and both countries are cooperating in international forums like the World Trade Organization and the UN Climate Change Conference. However, the relationship is more contentious at the tactical level. For example, China refuses to issue proper visas to Indian citizens of Arunachal Pradesh, Beijing denied the commander-in-chief of India's Northern Command a visa for an official visit because it believes that J&K is a disputed territory, and the People's Liberation Army (PLA) has been making frequent forays across the Line of Actual Control into Indian territory simply to push Chinese territorial claims. China has also rapidly developed military infrastructure in Tibet to allow for quicker induction of troops and their sustenance over a longer period of time. Another destabilizing factor is the large Chinese presence in the Gilgit-Baltistan area of Pakistan-occupied Kashmir. These developments do not augur well for long-term peace and stability.

The prevailing strategic environment has forced India's armed forces to prepare for the possibility of a "two front" war, while the army and other security forces are engaged in fighting an ongoing "half front" internal security war. Even though the probability of conventional conflict remains low due to steadily improving relations and military confidence-building measures with China and Pakistan, this possibility cannot be completely ruled out. Nuclear deterrence also plays a positive role in conflict avoidance, but the prevailing wisdom in India is that there is space for conventional conflict below the nuclear threshold. There is now increasing realization that unless India takes immediate measures to accelerate the pace of its military modernization, the gap with China, which is only a quantitative gap at present, will soon become a qualitative gap, given the rapid rate of PLA modernization. Likewise, the slender edge that the Indian armed forces now enjoy over the Pakistani armed forces in conventional conflict is being eroded as Pakistan is spending considerable sums of money on its military modernization under the garb of fighting radical extremism. **[1]**

Although the Indian armed forces have drawn up elaborate plans for modernizing and qualitatively upgrading their capabilities for future combat, including the ability to secure the sea lanes of communication and project power in India's area of strategic interest, the pace of modernization has been slow due to the lack of adequate funding, delayed decision-making, and a low-tech defense industrial base. India's defense budget is pegged at less than 2% of its GDP at present, and the bulk of the expenditure is on the revenue account—that is, pay and allowances, rations, fuel, oil and lubricants, ammunition, and vehicles. **[2]** Very little remains in the capital account to be spent on modernization. In the case of the army, spending on modernization is as little as 20% to 25% of total capital expenditure in 2012–13.**[3]** According to Indian defense minister A.K. Antony, "New procurements have commenced...but we are still lagging by 15 years." **[4]** Nonetheless, an inadequate defense industrial base—imports constitute 70%

of defense acquisitions—and bureaucratic inefficiency, rather than lack of funds, are the main causes of the slow pace of modernization. India is expected to procure defense equipment worth $100 billion, most of it imported, over the next two five-year plans. Simultaneously, however, efforts are being stepped up to enhance indigenous capabilities and thereby reduce India's dependence on imports by an order of magnitude. The following three sections will survey India's modernization of its army, navy, and air force.

Army Modernization: Enhancing Capabilities without Reducing Manpower

With personnel strength of 1.1 million soldiers (6 regional commands, a training command, 13 corps, and 38 divisions), the Indian Army has kept the nation together through various crises, including four wars since independence, Pakistan's "proxy war" in J&K since 1989–90, and insurgencies in many of the northeastern states. **[5]** Given its large-scale operational commitments on border management and counterinsurgency, the army cannot afford to reduce its manpower numbers until these challenges are overcome. Many of its weapons and equipment are bordering on obsolescence and need to be replaced. The next step would be to move gradually toward acquiring network-centric capabilities for effects-based operations so as to optimize the army's full combat potential for defensive and offensive operations. The army is also preparing to join the navy and the air force in launching intervention operations in India's area of strategic interest when called on to do so in the future.

Lieutenant General J.P. Singh (retired), former deputy chief of the army staff (planning and systems), stated in an interview with the *CLAWS Journal* that "the critical capabilities that are being enhanced to meet challenges across the spectrum include battlefield transparency, battlefield management systems, night-fighting capability, enhanced firepower, including terminally guided munitions, integrated maneuver capability to include self-propelled artillery, quick reaction surface-to-air missiles, the latest assault engineer equipment, tactical control systems, integral combat aviation support and network centricity." **[6]** The army's mechanized forces are still mostly "night blind." Its artillery lacks towed and self-propelled 155-mm howitzers for the plains and the mountains and has little capability by way of multi-barrel rocket launchers and surface-to-surface missiles. Infantry battalions urgently need to acquire modern weapons and equipment for counterinsurgency and counterterrorism operations to increase operational effectiveness and lower casualties.

Main battle tanks (MBT) and infantry combat vehicles (ICV) are the driving forces of India's conventional deterrence in the plains. This fleet is being modernized gradually by inducting two regiments of the indigenously developed Arjun MBT and importing 310 T-90S MBTs from Russia. A contract has also been signed for 347 additional T-90S tanks to be assembled in India. The BMP-1 and BMP-2 Russian ICVs, which have long been the mainstay of the mechanized infantry battalions, need to be replaced as well. The new ICVs must be capable of performing internal security duties and counterinsurgency operations in addition to their primary role in conventional conflicts.

Artillery modernization plans include the acquisition of towed, wheeled, and self-propelled 155-mm guns and howitzers for the plains and the mountains through import as well as indigenous development. The Corps of Army Air Defence is also faced with problems of obsolescence. The vintage L-70 40-mm air defense (AD) gun system, the four-barreled ZSU-23-4 Schilka (SP) AD gun system, the SAM-6 (Kvadrat), and the SAM-8 OSA-AK, among others, need to be replaced by more responsive modern AD systems that are capable of defeating current and future threats.

The modernization of India's infantry battalions is moving forward but at a similarly slow pace. This initiative is aimed at enhancing the battalions' capability for surveillance and target acquisition at night and boosting their firepower for precise retaliation against infiltrating columns and terrorists hiding in built-up areas. These plans include the acquisition of shoulder-fired missiles, hand-held battlefield surveillance radars, and hand-held thermal imaging devices for observation at night. A system called F-INSAS (future infantry soldier as a system) is also under development. One infantry division has been designated as a rapid reaction force for employment on land or in intervention operations and will have one amphibious brigade and two air assault brigades.

Similarly, the Indian Army proposes to substantially enhance the operational capabilities of army aviation, engineers, signal communications, reconnaissance, surveillance, and target acquisition branches in order to improve the army's overall combat potential by an order of magnitude. Modern strategic and tactical level command and control systems need to be acquired on priority for better synergies during conventional and sub-conventional conflict. Plans for the acquisition of a mobile corps-to-battalion tactical communications system and a battalion-level battlefield management system likewise need to be hastened. Despite being the largest user of space, the army does not yet have a dedicated military satellite for its space surveillance needs. Cyber warfare capabilities are also at a nascent stage. The emphasis thus far has been on developing protective capabilities to safeguard Indian networks and C4I2SR (command, control, communications, computers, intelligence, information, surveillance, and reconnaissance) from cyber attack. Offensive capabilities have yet to be adequately developed. All these capabilities will make it easier for the army to undertake joint operations with multinational forces when the need arises and the government approves such a policy option.

Naval Modernization: Major Fleet Expansion

The Indian Navy's ambitious Maritime Capabilities Perspective Plan seeks to dominate the Indian Ocean region by acquiring blue water operational capability while effectively countering current and emerging threats closer to the coastline. There is a perceptible shift in emphasis from an increase in the number of platforms to the enhancement of capabilities. According to a report tabled in the Indian Parliament in the last week of April 2012 by the Standing Committee on Defence, the navy's modernization plan seeks to achieve the following objectives:

- Augment airborne maritime surveillance, strike, anti-submarine warfare [ASW] and air defence capability through induction of shore-based aircraft, integral helos, carrier

based aircraft, space based [assets] and UAVs [unmanned aerial vehicles], along with suitable weapons and sensors.

- Develop ASW capability through induction of suitable platforms, weapons and sensors.

- Build adequate stand off capability for sea lift and expeditionary operations to achieve desired power projection force levels, influence events ashore and undertake military operations other than war.

- Induct assets and develop suitable infrastructure to augment forces available for low intensity maritime operations (LIMO), protection of off-shore assets and [for] coastal security.

- Induct force multipliers like satellite based global communications, reconnaissance and network enabled platforms to achieve battle-space dominance capability and perform network centric operations.

- Induct state-of-the-art equipment and specialized platforms for special forces to enhance niche capabilities to conduct maritime intervention operations and other envisaged roles.

- Develop support infrastructure in island territories to support the planned force levels as well as support infrastructure for ships/submarines/aircrafts at ports and airbases. **[7]**

According to Admiral Arun Prakash (retired), former chief of naval staff, India's naval modernization plans are designed to meet the following aims:**[8]**

- Acquiring a capability for maritime domain awareness in the area of responsibility, including space-based surveillance, maritime reconnaissance, airborne early warning and control (AEW&C), and UAVs

- Developing the capability for expeditionary and joint warfare, supported by special operations

- Acquiring reach and sustainability through long endurance, tankers, turnaround facilities in friendly foreign ports, and longer intervals between maintenance cycles

- Acquiring modern capabilities in fields of tactical aviation, ASW, anti-air/anti-missile, land-attack, mine countermeasures, and electronic warfare

- Networking ships, submarines, and airborne platforms via satellite

- Committing to self-reliance and indigenization, with the objective of harnessing national strengths in shipbuilding, engineering, electronics, and IT

The Indian Navy has two operational fleets—the Eastern Naval Command and Western Naval Command—and has proposed to center both fleets around an aircraft carrier. Eventually the navy plans to graduate to three carrier battle groups. The INS *Chakra,* a nuclear-powered submarine leased from Russia, will join the fleet later in 2012, while the INS *Arihant,* the first of three to four indigenously designed and developed nuclear-armed submarines, is expected to become fully operational by late 2014. India has also begun to induct Russian Nerpa-class submarines, which will give the navy a much needed fillip to the submarine fleet and considerably enhance sea-denial capabilities. Three stealth frigates have only recently been added to the fleet.

The Indian Navy's modernization plans, though much delayed, have thus finally begun to pick up steam. Pointing out the navy's role as a key facilitator in promoting peace and stability in the Indian Ocean region, Defence Minister Antony observed while commissioning a stealth frigate in July 2012 that the present operating environment of the Indian Navy "dictates that we balance our resources with a strategy that is responsive across the full range of blue and brown water operations....The maintenance of a strong and credible navy and strengthening cooperation and friendship with other countries to promote regional and global stability is the need of the hour." **[9]**

The navy plans to expand to a fleet of 150 ships in the next ten to fifteen years, with 50 warships now under construction and 100 new vessels in the acquisition pipeline. The navy is also engaged in setting up operational turnaround bases, forward-operating bases, and naval air enclaves with a view to enhancing India's surveillance efforts in the Indian Ocean region. Plans for accretions to the naval aviation fleet are likewise progressing smoothly: Boeing 737 P-8I maritime reconnaissance aircraft have begun to be inducted, and 5 additional Kamov Ka-31 AEW helicopters will be added to the existing fleet of 11 helicopters. Further, the navy's amphibious landing capability has been enhanced considerably by the acquisition of the INS *Jalashwa* (ex–USS Trenton) and other landing ships, and additional capabilities for amphibious warfare are being rapidly developed. As a result of these efforts, the Indian Navy is on the cusp of acquiring the capabilities necessary to join key strategic partners such as the U.S. Navy in safeguarding the sea lanes of communication in the northern Indian Ocean and ensuring unfettered freedom of the seas for trade and commerce.

Air Force Modernization: Air Dominance and Force Projection

Until recently, India's traditional strategic sphere lay between the Gulf of Aden and the Strait of Malacca; but with India's global footprint expanding, the Indian Air Force should be ready to serve wherever the country's future strategic interests lie. The air force is gearing up to provide the strategic outreach that India needs as a growing regional power and to project power where necessary in order to defend vital national interests. According to Kapil Kak, a retired air vice marshal and senior defense analyst, although there is a gap between vision and capability with regard to shaping India's strategic neighborhood, forward movement is now visible. In his view, the modernization plans of the air force are aimed at achieving the following objectives: **[10]**

- Air dominance and control of the air
- Deterrence, by both denial and punishment
- Long-range offensive reach—penetration, precision, persistence, and parallelity—in simultaneous operations at the tactical, operational, and strategic levels
- Strategic air-lift capability for power projection through both hard and soft power, such as humanitarian assistance and disaster relief operations and diaspora evacuation
- Build-up of capability for coercion
- Acquisition of force enablers and multipliers and related combat-support systems, including networking for tri-service command and control
- Capability of conducting cyberspace and information operations
- Indigenization of future capabilities for design and development

From a sanctioned strength of 39 squadrons, the Indian Air Force is down to 34 squadrons at present, due to decades of neglect, but hopes to enhance its strength to 42 squadrons by 2022. Yet plans to acquire 126 multi-mission, medium-range combat aircraft—in order to maintain an edge over the regional air forces—are stuck in the procurement quagmire. Tejas, the indigenously designed light combat aircraft, which is expected to replace the obsolescent Mig-21, is still a few years away from becoming fully operational. India is also developing a fifth-generation fighter jointly with Russia and aims to fly it in 2015. New fighter bombers include a fleet of 272 Sukhoi-30 MKIs, half of which have already been built. AEW aircraft are being acquired from Israel as well as being developed indigenously. India has also acquired 6 C-130J Super Hercules aircraft for its special forces and will likely order 6 more from the United States. C-17 Globemaster heavy-lift aircraft are also likely to be acquired shortly, which will take India's defense cooperation with the United States to a new level. Although a contract has been signed with a Swiss firm for 75 Pilatus PC-7 basic trainer aircraft, India's fleet of jet trainers continues to be deficient. In the rotary-wing category, the indigenously manufactured Dhruv utility helicopter has entered service. The air force is also in the process of acquiring medium-lift transport helicopters and attack helicopters.

In keeping with developments in the region, India's strategic forces are also modernizing at a steady pace. The Agni-I and Agni-II missiles are now fully operational. Immediate requirements include the Agni-V intermediate-range ballistic missile, which has a 5,000-km range, and nuclear-powered submarines with suitable ballistic missiles to provide genuine second-strike capability. As noted above, the INS *Arihant,* India's first indigenously built nuclear submarine, will likely become fully operational by late 2014. While India's emphasis is on mobile missile launchers, a small number of hardened silos are also being constructed. The armed forces do not currently have a truly integrated tri-service C4I2SR system suitable for network-centric warfare, which would allow them to optimize their individual capabilities; however, plans have been made to develop such a system in the next five to ten years. In fact, all new weapons and equipment acquisitions are now being planned on a tri-service basis to ensure interoperability.

India's Quest for Strategic Outreach

Given its growing power and responsibilities, India has been steadily enhancing its

expeditionary and military intervention capabilities, which have been amply demonstrated in recent times. During the 1991 Gulf War, India airlifted 150,000 civilian workers, who had been forced to leave Iraq, from the airfield at Amman, Jordan, over a period of 30 days. This was the largest airlift since the Berlin airlift at the end of World War II. During the 2004 tsunami, the Indian armed forces were at the forefront of rescue and relief operations. Over 70 Indian Navy ships transported rescue teams and relief material to disaster zones in less than 72 hours, even though the country's eastern seaboard had itself suffered considerable casualties and damage. Likewise, Indian Navy ships on a goodwill visit to European countries during the Lebanon war in 2006 lifted and brought back 5,000 Indian civilian refugees.

From the ongoing modernization plans described above, it is evident that India is preparing to join the world's major powers in terms of the ability to undertake out-of-area contingency operations. Further, the acquisition of SU-30 MKI long-range fighter bombers with air-to-air refueling capability, C-130J Hercules transport aircraft, and airborne-warning-and-control-system and maritime-surveillance capabilities over the next five to ten years will give India considerable strategic outreach. New Delhi has consistently favored military interventions only under a UN umbrella. Though that position is unlikely to change in the near term, India is likely to join future coalitions of the willing even without UN approval when vital national interests are threatened and need to be defended. Shiv Shankar Menon, India's national security adviser, stated in a speech in August 2011: "As a nation state India has consistently shown tactical caution and strategic initiative, sometimes simultaneously. But equally, initiative and risk-taking must be strategic, not tactical, if we are to avoid the fate of becoming a rentier state." **[11]** He went on to mention that India was cooperating extensively with other militaries to fight piracy off the Horn of Africa. Such cooperation will increase in the future as India adds to its intervention capabilities.

Given that India faces complex strategic scenarios and is located in an increasingly unstable neighborhood, it is in New Delhi's interest to encourage a cooperative model of regional security and work with all friendly countries toward that end. At the same time, New Delhi finds it pragmatic to hedge just in case worst-case scenarios—such as the collapse of China or China's use of military force for territorial gains—begin to unfold and threaten India's economic development or territorial integrity. The increasing emphasis on maritime cooperation, particularly with the United States, is part of India's continuing efforts to fulfill growing obligations and responsibilities as a regional power. New Delhi is now working to cooperate with all the major Asian powers in order to maintain peace and stability in the Indian Ocean and the Asia-Pacific more generally, though without aligning militarily with any one power. Toward this end, the armed forces are working together to achieve joint warfare capabilities for intervention operations in India's area of strategic interest. In sum, a rising India will soon become a net contributor to security in the Indian Ocean region, together with strategic partners such as the United States.

Nonetheless, India's modernization plans are moving ahead at a very slow pace. Policy paralysis in New Delhi due to the vagaries of coalition politics in a parliamentary democracy, along with the reduction in the defense budget as a share of India's GDP

due to sluggish growth in the economy, has further exacerbated the difficulties in increasing the pace of modernization. However, the process is certainly underway, and there is hope that it will receive bipartisan support across the political spectrum because of the realization that no alternative exists for addressing emerging threats and challenges but for India to quickly modernize its armed forces.

India's military modernization, however slow it might be, will lead to a qualitative increase in defense cooperation with the United States and other strategic partners by enhancing the capabilities of the Indian armed forces for joint coalition operations, if they are in India's national interest. Overall, India will gradually acquire the capability to act as a net provider of security in South Asia and the Indian Ocean region. This positive development will allow strategic partners like the United States to reduce their military commitments to the region to a limited extent. Hence, India's modernization efforts will enhance and further cement U.S.-India relations.

The author is a Delhi-based Defence Analyst and former Director CLAWS

Courtesy: The National Bureau of Asian Research (NBR), 24 September 2012

http://www.nbr.org/research/activity.aspx?id=275

End notes

[1] The India-Pakistan combat ratio is assessed by this author as 1.2 to 1.0 in India's favor.
[2] Laxman K. Behera, "India's Defence Budget 2012–13," Institute for Defence Studies and Analyses (IDSA), IDSA Comment, March 20, 2012,**http://www.idsa.in/idsacomments/IndiasDefenceBudget2012-13_LaxmanBehera_200312**.
[3] Ibid.
[4] Gurmeet Kanwal, "Indian Army's Modernisation," *India Strategic,* January 2012.
[5] This section draws from the author's analysis in "Indian Army Modernisation Needs a Major Push," *India Strategic,* February 2010, **http://www.indiastrategic.in/topstories482.htm**.
[6]"Modernisation Thrusts of Indian Army: Interview with Deputy Chief of Army Staff," *CLAWS Journal* (Winter 2010): 1, **http://www.claws.in/CJ-winter-2010.pdf**.
[7] Standing Committee on Defence, Indian Ministry of Defence, "Demands for Grants (2012-2013)," April 30, 2012, 70-71,**http://164.100.47.134/lsscommittee/Defence/FINAL%20DFG%20%20REPORT%20-2012-13.pdf**.
[8] Author's email interview with Admiral Arun Prakash (retired), July 27, 2012.
[9] Vinay Kumar, "Credible Navy Need of the Hour: Antony," *Hindu,* July 21, 2012.
[10] Author's email interview with Kapil Kak, July 27, 2012.
[11] Shiv Shankar Menon, "India and the Global Scene" (16th Prem Bhatia Memorial Lecture, New Delhi, August 11, 2011), **http://www.maritimeindia.org/article/india-and-global-scene**.