

# US–Indian Army-to-Army Relations: Prospects for Future Coalition Operations

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**Abstract:** *In light of the US requirement to operate in coalitions and given the impressive movement in Indo-US relations, this essay examines the prospects of operational partnerships between the Indian and US armies. It situates the possible futures of Indo-US army-to-army relations generally, and of potential coalition operations specifically, within the context of India's strategic culture and its national security strategy as well as the role of the armed forces and the army in particular in the execution of this national security strategy. This essay recognizes that both armies are evolving and considers the evolutionary trajectories of both forces.*

## Introduction and Background

When a nation decides to go to war, one of the fundamental questions that national decision makers consider is whether it is best to operate alone or to act jointly in a multinational coalition. This is certainly true for the United States. In fact the *National Security Strategy of the United States* recognizes the value of operating in coalitions, stating that “no nation can build a safer, better world alone.” However, it also recognizes that the United States must “be prepared to act apart when our interests and unique responsibilities require.”<sup>1</sup>

There are formidable uncertainties inherent in the building of such coalition forces. Will they involve traditional allies of the United States or will they include new partners? Will they comprise ad hoc coalitions or will the United States gather less-tested military forces, which are eager to demonstrate their capabilities?

Recent US-led military operations in Iraq and Afghanistan amply demonstrate that it is increasingly likely that the US armed forces – the army in particular – will have to operate with forces that are either less capable than the US Army or those that offer particular niche skills. It is also likely that the US Army will have to work with other ground forces that, at first blush, are not doctrinally, politically, or technologically compatible. The constitution of future coalitions will be determined by the particular political exigencies of the planned operation. Therefore, it is critical that the US Army prepare itself – and an array of potential partners – to operate together in future operations despite putative asymmetric capabilities and political equities. Such preparation should principally aim to diminish these asymmetries where possible or at least aim to minimize their impacts.<sup>2</sup>

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India stands out in the landscape of potential partners. It has the largest army of any democratic country, a highly regarded, well-trained, and professional army that has operational flexibility and niche warfare capabilities. For instance, the Indian Army has conducted operations successfully in desert and jungle terrains, tackled rural and urban insurgencies, and operated at home and abroad – principally in United Nations peacekeeping operations. Notably, India has a well-honed and exceptional high-altitude warfare capability, of which few countries can boast.

India also shares key values with the United States, such as a commitment to democracy. Furthermore, India and the United States have pursued a path of rapprochement that gained momentum following President Bill Clinton's March 2000 visit to India. During the presidency of George W. Bush, the pace of bilateral engagement has been unprecedented and has surpassed the expectations of even the most optimistic observers of the Indo-US relationship.<sup>3</sup>

The engine driving this expansion in bilateral relations is the growing convergence of strategic interests between the two states. Both Washington and New Delhi are interested in containing the global threat of terrorism, stabilizing and rehabilitating Afghanistan, ensuring the integrity of sea-lanes of control (SLOC), and securing energy supplies throughout the Indian Ocean basin.

One of the most conspicuous dimensions of the new US relationship with India has been the expansion of military-to-military relations since 2001.<sup>4</sup> In the months leading up to the US-led invasion of Iraq and in light of these military ties, the United States hoped that India would send troops to Iraq. Even though India demurred, there are reasons to believe that future Indo-US military cooperation is possible in particular political contexts and in specific kinds of operations.

Given the US requirement to operate in coalitions and the impressive movement in Indo-US relations, this essay examines the prospects for operational partnerships between the Indian and US armies. It situates the possible futures of Indo-US army-to-army relations generally, and of potential coalition operations specifically, within the context of India's strategic culture and its national security strategy, as well as the role of the army in the execution of this national security strategy. This analysis also takes into consideration the fact that both armies are rapidly evolving.<sup>5</sup>

I make five main arguments in this article. First, although there is considerable convergence at the strategic level, there are also significant asymmetries between the US and Indian armies. Second, while New Delhi values the increased service-to-service interactions, technology access remains the litmus test of the relationship. Third, although Washington and New Delhi have many shared security concerns, India will not participate in combat coalitions unless its own security is at stake. Fourth, while India is a reluctant multilateralist, this does not mean that the Indian Army is irrelevant to the United States. It is conceivable that the Indian and US armies could operate together in the context of peace, counterterrorist, or counter-narcotic operations. Therefore, developing joint operational capabilities will be useful to the United States. Fifth, apart from troops, India has a number of other assets, including its vast military-educational institutions.

The remainder of this article is organized as follows. The next section provides a synopsis of India's national security strategy. Then I present an abbreviated overview of the Indian Army's organization and capabilities, as well as the history of its relationship

with the US Army. Next, I forecast future developments within the Indian Army in terms of capabilities, structural changes, and operational concepts. The article concludes with an overall comparison of the US and Indian armies and an analysis of the prospects for effective coalition operations.<sup>6</sup>

### **An Overview of Indian National Security Strategy and the Role of the Indian Army**

The Indian Army does not see itself as a force projection army. The prime objective of the army is the defense of India's sovereignty vis-à-vis both internal and external threats. The Indian Army has specialized in low-intensity conflict in the contexts of jungle and urban counterinsurgency, high altitude ("mountain operations" in US parlance) and desert warfare, as well as other internal security operations such as aid to civil authorities.<sup>7</sup> When asked about the role of the army in pursuing India's national security objectives, Indian respondents noted the softer aspects of the army's power projection. For instance, the army helps shape India's strategic environment through the provision of military, paramilitary, and police training to friendly countries in Africa, Southwest Asia (including Iraq), South and Southeast Asia, as well as personnel from the United States, the United Kingdom and elsewhere. Participating institutions include: the College of Combat, the Infantry School, the Defence Services Staff College, the National Defence College, the High Altitude Warfare School, and the Counter Insurgency and Jungle Warfare School (CIJWS).<sup>8</sup> The Infantry School at Mhow also trains police and paramilitary forces.

In addition to these institutions, India established a Centre for United Nations Peacekeeping (CUNPK) in New Delhi in 2000 under the auspices of the United Services Institution of India. Formally a joint initiative of the Ministry of External Affairs, the Ministry of Defence, and the armed forces, this organization trains Indian personnel as well as personnel from numerous other countries throughout Asia, Africa, Europe, the United Kingdom, and the United States.<sup>9</sup>

Following Operation Vijay (the Indian military campaign during the 1999 conflict with Pakistan in the Kargil and Dras sectors) and Operation Parakaram (the Indian Army action during the 2002 standoff with Pakistan), foreign armies became increasingly interested in the Indian Army, and requests to participate in these programs expanded. During 2003–04, over 3,200 army personnel from countries in South Asia, Southeast Asia, Central Asia, and Africa were trained.<sup>10</sup> One retired intelligence official, noting India's successful track record in such training, suggested that India could be a US partner in shaping this expansive environment through training police and military forces in Afghanistan and Iraq.<sup>11</sup>

Unlike the US Army, the Indian Army has traditionally been excluded from national decision-making processes.<sup>12</sup> In recent decades, Indian security managers have episodically advocated diminishing this civil–military divide by integrating the armed forces into the national command authority. However, little integration occurred until the 1999 Kargil crisis. After 1999, proponents of integration argued for instituting a Chief of Defence Staff (CDS) along the lines of the British system. The CDS would head the Chiefs of Staff Committee, which would have a status above the three service chiefs and would have a principal role in national decision making.<sup>13</sup> While the post of

the CDS was supposed to have been filled by 2001, it has yet to be appointed and there is no accurate assessment as to when this post will be filled. Many observers believe that this issue may be indefinitely deferred with the Bharatiya Janata Party (BJP) having been replaced by a Congress-led government in 2004.<sup>14</sup>

Along with this effort to institute the CDS, there were renewed efforts to bring the three services into an integrated command in recognition of the fundamental importance of joint military operations and planning.<sup>15</sup> The institution that was established to achieve jointness across the services is the Headquarters Integrated Defence Staff (IDS). The Chief of the IDS (CIDS) was established on October 1, 2001 and is today the principal arm of and Secretariat to the Chiefs of Staff Committee. In 2001, India established one fully integrated theater command: the Andaman and Nicobar Command (ANC), headquartered in Port Blair, which operates directly under the Headquarters IDS.<sup>16</sup>

Given this history, how likely is it that the armed forces will assume an important role in prosecuting India's national strategic objectives in the future? Presumably, the answer to this question may affect India's ability and willingness to enter into coalition operations with the United States. That India is moving towards joint institutions does suggest that India may be increasingly willing to use its armed forces as a means of power projection. Further, as India's joint strategic forces command comes into play, the military will naturally assume a more important place in policy making.<sup>17</sup>

However, Indian defense and civilian personnel were not convinced that the military will have such a role in apex decision making any time soon. They contended that the Indian military is still primarily focused on internal security, as well as on the Pakistan and China borders. Virtually all respondents emphasized that India's is not a force projection military. One high-ranking individual on the Chiefs of Staff Committee explained that "we only leave India under a Blue Helmet Mandate or to sort out a neighbor."<sup>18</sup> Indian military analysts interviewed in the fall of 2004 also noted that, thus far, the Congress government is less keen on bringing the military into this role.

The civilians interviewed were more open to different futures than were the military interlocutors. One official within the Ministry of External Affairs explained that after Afghanistan there has been a change of thought taking place within India's civilian security enclave.<sup>19</sup> He explained that India would likely go to Sinai as part of a multinational force and that this would be the first time that India would take part in a multinational operation without a UN Chapter 6 mandate. Indian interviewees spoke of a growing recognition that, increasingly, the traditional Chapter 6 peacekeeping operations will be confined to Africa, and there will be ad hoc arrangements with varying degrees of UN sanction for peace operations elsewhere.<sup>20</sup> Even though civilian interlocutors could more easily foresee a future in which India participated in multilateral peace operations – with or without UN sanction – they were less willing to imagine India operating in a warfare coalition in a third country. India is and will likely remain a hesitant multilateralist that would participate in such a coalition only if India's core security interests were at stake.

### **The Current Indian Army – A Partner with Great Promise**

The Indian Army is the world's second largest, with some 1.1 million active personnel.<sup>21</sup> The Indian Army is regarded as generally well-trained and motivated, although

there are reports of diminished morale and readiness as a result of its incessant involvement in counterinsurgency operations.<sup>22</sup> While the Indian Army easily meets its enlisted accession targets, for the past several years it has had a serious officer shortage. Accurate data on this subject is not readily and publicly available. However, the most recent report from January 2005 indicates that there is a continuing shortage of nearly 12,000 officers.<sup>23</sup> The aging profile of the army also has drawn concern in recent years. Under current army practice, a colonel typically assumes command of a battalion at 42 years of age. In contrast, the age of battalion commanders of Pakistani, Chinese, and Israeli armies is between 35 and 37 years.<sup>24</sup>

Headquartered in New Delhi and operating under the Chief of Army Staff, the army has five operational commands organized on a geographical basis: Northern, Western, Eastern, Southern, and Central.<sup>25</sup> There is also an Army Training Command, which resembles the US Army's Training and Doctrine Command. The training command is tasked with developing and disseminating conventional and non-conventional tactics and doctrines for the entire army.<sup>26</sup> (A summary of the army's strength and field formations is given in Table 1.)

A perusal of the Indian Order of Battle reveals that its inventory draws from a number of foreign producers (e.g. Russian, French, British, Israeli, American, etc.) as well as items manufactured indigenously or under license within India. The multiple

TABLE 1  
SUMMARY OF FIELD FORMATIONS AND SUB-UNITS

STRENGTH	1.1 Million Active Army 300,000 Army Reserves <sup>1</sup> (active) 500,000 Army Reserves <sup>2</sup> (inactive) 46,000 Territorial Army
INFANTRY	4 x RAPID divisions (2 infantry and 1 mechanized brigade) 18 x Infantry divisions 9 x Mountain divisions 5 x Independent infantry brigades 2 x Independent mountain brigades 1 x Parachute brigade
ARMOR	3 x Armored divisions (each with 2/3 armored brigades) 7 x Independent armored brigades
ARTILLERY	2 x Artillery divisions 3 x Independent artillery brigades
AIR DEFENSE	18 x Air defense brigades
OTHER	3 x Engineer brigades 1 x SSM (Prithvi) Regiment

<sup>1</sup> These are reservists who are within five years of full-time service.

<sup>2</sup> These reservists are committed until 50 years of age.

RAPID is an acronym for "Reorganized Plains Infantry Division." RAPIDS are comprised of three brigades (two infantry and one mechanized). These divisions have additional artillery and armor assets and their own aviation assets. Some RAPIDS are optimized for offensive operations, others for defensive operations. These divisions are designed to enhance maneuverability.

Source: R. K. Jasbir Singh, ed., *Indian Defence Yearbook 2004* (Dehra Dun: Natraj Publishers, 2004), pp. 276–277. There is considerable discordance in the details of the field formations among different Orders of Battle (ORBATs) available in the open-source literature. This article uses ORBAT information from the *Yearbook*.

sources and weapon systems maintained by the Indian Army pose formidable challenges in terms of maintenance, spare parts, and other logistical concerns. India's complex inventory may have implications for its ability to participate effectively in coalition warfare. The biggest concern is that India's major platforms are not compatible with those of the United States. One PACOM interviewee noted that this is a problem, but he also provided examples of the United States and India working together despite very different equipment and logistical arrangements.<sup>27</sup>

The principal role of the Indian Army, as noted above, is the protection of India's territorial integrity against both external and internal threats. Guarding India's borders with Pakistan and China is onerous, given that of its 16,500 km of shared borders, 7,000 km are disputed. Furthermore, these are "hot" borders where artillery duels and other confrontations are routine. Complicating India's security challenges is that much of this disputed area is in complex and difficult terrain: in the Himalayan mountain ranges in the far north, desert terrain to the west, and jungle terrain in the northeast. India has been countering urban and jungle insurgencies from the first hours of its independence, in addition to serious external threats from two demonstrated adversaries.<sup>28</sup>

As a consequence of India's requirement to safeguard the homeland across such diverse and challenging terrain, the Indian Army has acquired a number of niche capabilities. India has developed sophisticated capabilities in high-altitude warfare that are rivaled perhaps only by Pakistan. During the 1999 Kargil crisis, Indian forces engaged Pakistani soldiers from the Northern Light Infantry at altitudes of 14,000–17,000 feet. Because of its long desert border with Pakistan and the conventional battles fought in that terrain, India has also developed significant desert warfare capabilities. India also has considerable experience in both jungle and urban counterinsurgency operations. These are executed with relatively lean logistical tails, minimal resources, and low levels of technology. One US Army foreign area officer interviewed by the author noted that some of the future scenarios that the US military is likely to encounter (especially military operations other than war) could be informed by Indian approaches to counterinsurgency which may be more suitable than current US practices.<sup>29</sup> Because many of India's counterinsurgency operations have been executed in the urban environment, India's experience is also likely to inform the US Army's development and refinement of doctrine and tactics for military operations on urbanized terrain.<sup>30</sup> This is all in addition to India's well-honed peace enforcement capabilities.<sup>31</sup>

As noted above, India continues to seek ways of increasing effective inter-service jointness.<sup>32</sup> Many of these issues are being resolved with the formation of the Nuclear Command Authority in February 2003. However, India is a student of Operation Desert Fox and Operation Desert Storm, which in the Indian literature exemplify how land, air, and sea elements integrate seamlessly for military success. The US experience during Operation Enduring Freedom and Operation Iraqi Freedom have further focused the attention of the Indian armed forces on joint combat operations and the use of technology as a force multiplier.

Because the Indian Air Force retains control over all fixed-wing aviation assets, most military operations since independence have required the army and the air force to work together. Whether or not they actually work well together is an open question. Observers of the inter-service relationship were critical of their ability to interoperate

during the 1999 Kargil war.<sup>33</sup> The navy has contributed when required.<sup>34</sup> Without a doubt, demand is growing for joint doctrines, joint command and joint staff procedures, and joint training and logistics.<sup>35</sup> Nevertheless, as Admiral J. G. Nadkarni has written, “Jointmanship has a long way to go in India’s armed forces.”<sup>36</sup> While it is true that “jointness” for the Indian Army may be a long way away, it is important to note that the Indian armed forces need not be joint to be a useful partner to the United States military. As this essay notes and argues, irrespective of the configuration of the U.S. and Indian armed forces, both militaries need to learn to work with each other.

### **The Indo-US Military Relationship: Implications for Army-to-Army Engagement**

Over the past several years, the United States and India have been forging a strategic relationship. In addition to high-level engagement at the strategic and political levels, the military-to-military relationship has been the cornerstone of this new round of engagement. While this is the most recent effort to jumpstart Indo-US relations, it is by no means the first. There was an effort in the 1980s and another in the mid-1990s.<sup>37</sup> Across these three rounds of engagements there has been very little evolution in the two states’ respective positions on the objectives of the engagement and the processes by which these objectives are met.

Previous efforts faltered because of the asymmetric valuation of technology transfers and cooperation in the areas of defense research, development, and production. The United States saw the role of technology transfer as occurring significantly only within the context of a mature defense relationship. The United States thought that the basis of the relationship should be service-to-service contacts rather than technology provision. India, while conceding the value of such contacts, believed that upfront technology transfer was a litmus test of serious intent on the part of the United States.<sup>38</sup> This was one of the most important reasons for past failures to establish robust Indo-US military relations.

Despite a history of misaligned priorities over technology transfer, the current military-to-military relationship is plagued by the same general problem, and some Indians suggest that this issue could be a “deal-breaker.” The United States seeks to slowly establish a robust relationship with India and incrementally empower it to assume the important strategic role that US analysts believe it should occupy in the future. Indians, on the other hand, have a decidedly different view. New Delhi is impatient with the pace of the relationship in terms of producing the results that are most important, namely technology transfer. One well-placed civilian in the Ministry of External Affairs explained that all India has to show for the current Indo-US relationship is “high-level visits, unit-to-unit exchanges and exercises, and military-to-military discussions.”<sup>39</sup>

The primary vehicle for these defense interactions is the Defense Policy Group (DPG). The DPG first met in the fall of 1995 and had three major components. The first component structured a series of ongoing high-level exchanges. The second addressed the development of military-to-military relationships across the three armed services. This entailed forming three service-to-service groups called Executive Steering Groups (ESGs). These ESGs for the armies, air forces, and navies were tasked

with guiding the military aspects of enhanced collaboration. This included the exchange of observers who would attend military exercises and the conduct of training exercises that would be convened with increasing degrees of sophistication and complexity. The third component of the DPG was joint defense-related research and production. This was operationalized through the Joint Technical Group (JTG). While the DPG process officially came to a halt after India's 1998 nuclear tests, it was revived in December 2001 with some modifications.<sup>40</sup>

The apex of Indo-US relations occurred during the first two years of the Bush Administration and this was most evident in the deeply changed military-to-military ties, which persist to date as the most "conspicuous example of the improved [bilateral] relationship."<sup>41</sup> As noted, the tempo of Indo-US military-to-military ties has declined in recent years because of the US-led military action in Iraq, which has put a tremendous strain on the army and special forces.

Given the shared interests in fighting terrorism and insurgency, special operations has been an area of intense focus, and many believe that Indian special operations forces can have considerable utility in the global war on terrorism (e.g. hostage-rescue) and in operations other than war. The US Special Operations Command (SOCOM) coordinated a joint exercise with Indian armed forces in Agra in May 2002. This exercise was part of a series of such engagements named "Balance Iroquois" (Indian defense literature sometimes refers to this as "Vajra Prahar"). This Joint Combined Exchange Training (JCET) exercise involved 90 troops from SOCOM and PACOM and about 150 special forces from the Indian Army. (Both air forces were also involved for lift.) "Balance Iroquois" aimed to foster interoperability and joint operations and concentrated on airborne assault operations.<sup>42</sup> This was the first occasion in 39 years that Indian and US special forces conducted such joint training.<sup>43</sup> This exercise in Agra occurred at a time when India and Pakistan were nearly on the brink of war. An exercise of this sort at such a propitious time is rather extraordinary and underscores the priority that New Delhi placed on this engagement.

Since this JCET in Agra, "Balance Iroquois" exercises have been held several times. In April 2003, combined Indian and US Special Operations Forces formed a Joint Action Group to stage a raid on a mock terrorist hideout in the jungle terrain of Mizoram in Northeast India. During this event, members of the Indian Army's 21st Parachute (Special Forces) Battalion and US Army Special Forces soldiers lived, worked, and trained together at India's Counter Insurgency Jungle Warfare School at Vairengte, Mizoram. This exercise was focused on counterterrorism, jungle survival, and counterinsurgency.<sup>44</sup> This was followed by Operation "Vector Iroquois" in Guam in May and June of 2003.<sup>45</sup> In September 2003, "Balance Iroquois" was held in Leh (on the Tibetan plateau in India) and offered US forces terrain which is not available in the United States. During this JCET, which focused on high-altitude warfare, India's superior manpower on this terrain complemented US technological advantages.<sup>46</sup> Finally, another engagement was held between US special forces and their Indian counterparts in August and September 2003. This exercise was coordinated with the army-to-army exercise, "Yudh Abhyas," to be described below.<sup>47</sup>

Whereas interactions with SOCOM have progressed, direct army-to-army contacts have been more difficult to manage for a number of reasons. Joint army exercises



require soldiers on the ground, which is likely to fuel concern among those elements of the Indian political establishment that are not inclined toward the United States. Second, “boots on the ground” also involves the Ministry of External Affairs, which adds an additional layer of complexity to coordination. Third, large deployments along the India-Pakistan border in 2002 imposed limits until the forces were deactivated. Finally, with the US invasion and occupation of Iraq, US army personnel have been tasked with combat duties in Iraq in addition to supporting the ongoing mission in Afghanistan since October 2001.<sup>48</sup>

Despite these constraints, the Army ESG has been convened nine times, most recently in December 2004. Since 2002, the areas identified for cooperation in the ESG have included high-altitude warfare, disaster management, and expert and military school exchanges. In recent years both armies have sought to expand counterterrorism cooperation and related training and have included each other in national, bilateral, and multinational exercises.<sup>49</sup> The agreement that came out of this most recent meeting calls for the continuation of a platoon-level annual exercise that has become known as “Yudh Abhyas,” held in both India and the United States.<sup>50</sup>

The first of these exercises was held in India in March and April 2004 at India’s Counter Insurgency Jungle Warfare School at Vairengte. The second was held in July 2004 in Hawaii. This exercise will be held next in July 2005 and will again be at the Jungle Warfare School in Vairengte. This will be followed by an exercise in September 2005, which likely will involve a tactical jump (e.g. parachute drop) in Alaska. (Details have not been fully fleshed out for this program, but it will probably focus on infiltration techniques in counterinsurgency/counterterrorism operational environments.)<sup>51</sup>

From the US perspective, expanded military-to-military ties will promote better understanding of each other’s systems and doctrines. This is hoped to enable both armies to work better during real contingencies. One of the important watermarks in this relationship is achieving interoperability, or the ability of equipment held by both armies to “talk” to one another. At present this does not exist. But it is hoped that the more the armies exercise together, the greater the rationale for providing India with compatible equipment, communications and technologies. This is a pleasant convergence with India’s desire to purchase such items from the United States through foreign military sales. From the US side, these army-to-army engagements are valuable because they will possibly shape an environment where India can obtain the technology that it desires.<sup>52</sup>

While the United States clearly values military-to-military training, elements within India’s Ministry of External Affairs and Ministry of Defence prioritized technology transfer as their most important national objective. One official within the Ministry of External Affairs noted with considerable exasperation that the pace of technology transfer has been onerous and slow. As he put it, “All we have to show for the current Indo-US relationship is high-level visits, unit-to-unit exchanges and exercises, and military-to-military discussions [i.e., the DPG structure].”<sup>53</sup>

It is not clear to what extent the Indian Army concurs with the salience of this objective in the current set of engagements. As with the past, the Indian Army sees the inherent value of service-to-service interactions with the US Army even though the institution would greatly benefit from any potential technology and hardware acquisition. In fact, within the Indian Army, interviewees highly valued army-to-army

exercises and other exchanges as means through which the armies can work towards interoperability.

Despite support for this goal, interlocutors evinced ambivalence about the requirement for interoperability. As one officer in the IDS explained:

An operational scenario where the US and India operate together [outside of a UN mandate] is rather unlikely. But, even if it is unlikely, there still needs to be compatibility of the two forces. Certainly, US war fighting methods can be learned. So for this we do need training opportunities. Coalition warfare is important, as is the organizational structure for coalition warfare. However this would be likely for operations under the UN.<sup>54</sup>

This reluctance needs to be appreciated by US military planners when thinking about India as a potential partner. As one interviewee explained, “we would not go into theatre as a part of a coalition just for confidence building.”<sup>55</sup> However, this same individual did say that the polity could be brought along if the political leadership were convinced of the necessity of such action. Thus the decision to participate in a combat-oriented coalition hinges on the consensus that such an operation is clearly in India’s strategic interest and that the leadership can cultivate significant public support for such a decision.

While combat missions are unlikely, peace operations remain an area of potential cooperation. Interviewees acknowledged that in New Delhi the concept of peace operations is evolving, and officials are trying to decide how India will respond to the emergent conceptual demands. One civilian went so far as to note that it is not in India’s interest to have such a rigid adherence to a “Chapter 6 Only” policy.<sup>56</sup> However, most interlocutors maintained that India is a reluctant multilateralist and would operate in a multinational combat coalition only if there is a decisive enemy, clear value for India’s national interest, and a mandate from the Indian populace.

### **Estimate of the Future Indian Army**

Data obtained from field interviews and from a review of the Indian defense literature suggests that the future Indian Army will resemble, in all likelihood, the current Indian Army. Data from all sources suggested that any changes that will take place within the Indian Army would not be structurally significant. Like many democracies, India is coming under pressure to downsize its military, and many military and civilian personnel indicated an interest in substituting technology for manpower. However, few believe that the mountainous border terrain would permit this. Furthermore, even if it were technologically feasible, the cost of swapping relatively inexpensive manpower with appropriate technology would be prohibitive for a country like India. The general consensus among interviewees was that there would be no large-scale changes in the Indian Army in the policy-relevant future.<sup>57</sup>

#### *Indian Army Modernization Plans*

The Indian Army will continue to improve its equipment and endeavor to acquire new doctrines from interacting with the United States and other countries such as Israel.<sup>58</sup>

The Indian Army will also work to increase its level of jointness with the other two services, the navy and the air force. The Strategic Forces Command will come online in a robust and functional way and this in turn will enhance nuclear transparency, introduce redundancy in the National Command Authority, and perforce will be a thoroughly joint institution. In addition, the previous Army Chief N. C. Vij, prior to retiring in late 2004, ordered the raising of special forces, along the lines of the United States Special Operations Command.<sup>59</sup>

At present, the Indian Army is most concerned about its slight edge over Pakistan in terms of conventional military capabilities. Indian sources identify the following deficiencies: self-propelled and air defense artillery guns, night-vision capabilities, attack helicopters, weapons-locating and battlefield surveillance radar, early-warning devices, and electronic warfare systems.<sup>60</sup> Consistent with the focus on special operations, the Indian Army is particularly interested in obtaining special forces equipment such as night-vision goggles, special rifles, assault vehicles, kayaks, masks, and protective gear for nuclear, biological, and chemical environments. It also seeks enhanced and more secure communications (e.g. secure hand-held communications) as well as an increased ability to intercept militant communications.<sup>61</sup>

Emerging from its concerns over border integrity, India is interested in a suite of acquisitions to enhance security along the international border and the Line of Control (LOC) in Kashmir,<sup>62</sup> including: thermal, infrared, acoustic and image-intensification devices; radar; unmanned aerial vehicles; and tethered balloons. (Presently the army is using Israeli Searchers and is also pursuing an indigenous product.) The army also needs long-range artillery to effectively target militant formations across the LOC. The army also wants to acquire ground sensors.<sup>63</sup>

In addition the army wants equipment to enable it to deal specifically with militancy in Jammu and Kashmir (e.g. AK series assault rifles, lighter and more lethal automatic weapons, lightweight rocket launchers, specialized grenades, body armor, armor-protected light vehicles, modern binoculars, compasses, sniper rifles and scopes). Much of this equipment is intended to enhance capabilities of special forces commandos who are forced to fight a well-armed and well-trained enemy with vintage equipment.<sup>64</sup>

In a major milestone in foreign military sales, India has acquired eight Raytheon AN/TPQ-37 Fire Finding long-range weapons-locating radar from the United States. Delivery was made in July 2003. This was the first important acquisition from the United States. However, India is nervous that in the near future the US could back away from its relationship with India and perhaps even revert to a hawkish nonproliferation policy. Fearing such a reversion and potential policy decisions to apply new sanction regimes in the future, New Delhi is pursuing an indigenous weapons-locating radar independent of the United States.<sup>65</sup>

India has declared that procuring a missile defense system is its top acquisition priority.<sup>66</sup> India is trying to convert its Pechora air defense system into anti-missile defense system for this purpose. This effort is being executed jointly by the air force and army, with the help of the national Defence Research and Development Organisation,<sup>67</sup> Bharat Electronics, and Bharat Heavy Electronics. India has sought Russia's help in trying to extend the range of the Pechora system from 25 km to 150 km.<sup>68</sup>

What is not obvious in these slated acquisitions is any *explicit* plan to obtain equipment from the United States with the intent of advancing interoperability. This is so for a number of reasons. From the perspective of some entities within the United States, Indo-US relations may not be ready for rapid technology transfer. More frequent and sophisticated military-to-military interactions will be necessary to make this case in Washington. From India's perspective, there is lingering concern about the possibility of the United States reverting to the nonproliferation policy of past administrations. Even though the re-election of President Bush may have quelled some of these fears — at least for the next four years — interviewees point out that weapon systems have lives that span decades. Thus India remains leery of investing in large-scale systems purchases from the United States, particularly given that many of these systems will require maintenance by the manufacturer throughout the course of their life spans.

### *Indian Army Future Concepts*

India is a student of recent US-led military operations and the US Army Transformation. The Transformation, guided by a vision set forth by former Chief of Army Staff Gen. Eric K. Shinseki, calls for an expeditionary US Army that can deploy its forces globally and speedily. This concept relies upon smaller units (brigades), rapid deployment, lighter-weight platforms, and efforts to shrink the logistics footprints. It also relies on technology as a force multiplier to conduct nonlinear operations.<sup>69</sup>

While India seeks to adopt some of these war-fighting innovations, officials note that there is little need for India to take on these conceptual and doctrinal changes wholesale. Rather, as one observer remarked, “the Indians are modernizing vis-à-vis their objectives.”<sup>70</sup> While the Indian Army has traditionally followed a purely static defense doctrine, India has made progress in moving away from this concept towards a more “mechanized and mobilized operational art based on a doctrine of ‘offensive-defence’.”<sup>71</sup> This is likely to be the doctrine that India would follow in the event of hostilities. India continues to incorporate modern doctrine that emphasizes maneuver warfare and tri-service cooperation. While India is interested in enhancing joint tri-service operations, there are significant technological limitations in doing so, including a lack of common communications platforms.<sup>72</sup>

The *Report of the Group of Ministers on National Security* also identifies future conceptual directions. It argues that a conventional war with Pakistan cannot be ruled out, India's nuclear deterrent notwithstanding. It anticipates that the future battlefield will be:

non-linear in nature, with real-time surveillance, integrated Command, Control, Communications, Computer, Intelligence and Information (C<sub>4</sub>I<sub>2</sub>) assets, target acquisition, and highly lethal precision weapon systems ... [T]he future battlefield in our context is likely to be more digitized and transparent and would experience an exponential increase in the deployment of electronic devices, signaling the growing primacy of the electromagnetic spectrum. The future conflicts would be dominated by a wide variety of platforms and delivery systems with increased ranges and accuracy, as well as terminally guided and precision-guided munitions.<sup>73</sup>

It is likely that this future battlefield is derived from India's careful observations of recent US-led operations and appreciation of the operational lessons from those conflicts.<sup>74</sup> The *Indian Defence Yearbook 2004* spends 159 pages on its "Special Focus: Iraq War – 2003," wherein it draws out numerous military lessons learned from the war.<sup>75</sup> The language used by Indian analysts also suggests a firm familiarity with the language of the US Army Transformation. This reflects the frequency and density of high-level military-to-military exchanges that have been ongoing between the United States and India in recent years.

Having observed US operations in Afghanistan and Iraq, the Indian Army would like to acquire the capability to have a soldier on the ground to call in air strikes to enable "portable targeting." Some even noted that in the ideal world, India would like a situation where it could call in targets to an American air asset (although the circumstances in which this would occur were not well characterized by interviewees). The Indian Army anticipates limits to the degree of technology it can acquire in the near- and mid-term, for two reasons. First, Indian officials are not yet satisfied with their capabilities for indigenous research, development and production. Second, they believe that Washington may not be willing to yield access to such technology without the familiar burden of political expectations.

### **Conclusions: Future Compatibility of the Indian and US Armies**

There are considerable asymmetries between the US and Indian armies that need to be recognized by US planners. The US Army is a power-projection army, whereas the Indian Army is tasked to defend against internal and external threats. These army-to-army asymmetries persist *even though there is a large degree of convergence at the bilateral strategic level* (e.g. terrorism, political Islam, energy supply security, SLOCs, democracy, regional stability, China, etc.).<sup>76</sup> However, this does not mean that India will be a partner in a combat coalition unless its own security is at stake.<sup>77</sup>

While India highly prizes the increased service-to-service interactions, technology access is the litmus test of the relationship. This access is key to demonstrating the US commitment to India. But some of this desired technology has operational value (e.g. availability of advanced war-fighting technologies) and will be needed if the United States expects India to be an effective coalition partner.

Recognizing some of the perceptual differences that exist, one respondent emphasized that "unless the US Army understands India's constraints, there will be unreasonable expectations of India."<sup>78</sup> This individual was concerned that the United States may anticipate that India will participate in US-led military operations in the same way as the United Kingdom and Australia do. India cannot do so in the policy-relevant future and it is far from clear that there is a broad-based consensus that India should stand next to the United States in military situations similar to the United Kingdom and Australia.

While India is a reluctant multilateralist, this does not mean that the Indian Army is irrelevant to the United States. As noted, the United States has much to learn from the Indian Army in terms of its counterinsurgency experiences (particularly in the urban areas) and high-altitude warfare and other niche capabilities. India's vast expertise with internal security operations may offer key insights that could inform the US

engagement in military operations other than war. Similarly, the United States should consider exploiting India's established infrastructure for studying and disseminating lessons learned and best practices at its peacekeeping institution.

Indian interlocutors were willing to imagine a future crisis where the Indian and US armies would operate together in a third country. This would most likely take place in the context of peace operations, counterterrorism, or counter-narcotic operations.<sup>79</sup> As India's contributions to such operations are important, developing joint operational capability will be very useful to the United States.

Apart from troops, India has a number of other assets. Its military institutions may be an important place in which Iraqi and Afghan military, paramilitary, and police personnel receive training. While the United States is currently training the nascent Afghan Army, it should be kept in mind that India's regimental system has long dealt with integrating multilingual and multiethnic soldiers into a coherent fighting force. While it may be too late to bring Indian expertise to bare upon training the Afghan armed forces, India's experience may still offer considerable insights for the United States. India's experiences could also be invaluable in training Iraqi security forces. One Indian civilian official remarked that even if India does not send troops to Iraq, it can still contribute to the success of the US in Iraq by training police and military personnel.

#### NOTES

1. Office of the President, *The National Security Strategy of the United States of America*, September 2002, pp. 29 and 32. Cited by Nora Bensahel, "Preparing for Coalition Operations," in Lynn E. Davis and Jeremy Shapiro, eds., *The U.S. Army and the New National Security Strategy* (Santa Monica: RAND, 2003), p. 111.
2. For more information about US Army requirements for future coalition operations, see Bensahel, "Preparing for Coalition Operations," pp. 111–128.
3. See C. Christine Fair, *The Counterterror Coalitions: Cooperation with Pakistan and India* (Santa Monica: RAND, 2004).
4. Since the invasion of Iraq, the tempo of Indo-US military engagements has slowed due to US force requirements in Afghanistan and Iraq. For the most recent official overview, see Embassy of India, Washington DC, "Indo-U.S. Relations: A General Overview" (Washington, DC: Indian Embassy, 2003), <http://www.indianembassy.org/indusrel/induspol.htm>.
5. In the case of the United States Army, this process is called "The US Army Transformation," which the Indian Army is astutely observing. For more information about the US Army Transformation, see Thomas L. McNaughter, "Refining Army Transformation," in Davis and Shapiro, eds., *The U.S. Army and the New National Security Strategy*, pp. 293–307.
6. Because India does not publish a document comparable to the US *National Security Strategy*, this article draws on the closest substitute within the Indian defense planning structure: the *Ministry of Defence Annual Report*. The most recent volume was published in September 2004. See Government of India, Ministry of Defence, *Annual Report 2003–2004* (New Delhi: Ministry of Defence, September 2004), <http://www.mod.nic.in/reports>. This article also uses data obtained during several years of fieldwork on the subject of Indo-US military relations, during which the author interviewed a wide array of people in both the Indian and US national security establishments. These interviews were conducted with civilians and military officers from 1999 to 2005.
7. This is often abbreviated as "Aid to Civil." This provision permits the armed forces to take over the civilian security apparatus under specific circumstances such as counterinsurgency or other severe threats to law and order. They may also be called to provide relief and/or rescue operations during natural calamities.
8. For more details, see the chapter on "Recruitment and Training," in Ministry of Defence, *Annual Report 2003–2004*, pp. 134–146.
9. For more details, see "Center for UN Peacekeeping," <http://www.usofindia.org/cunp.htm>.
10. For more details, see the chapter on "Recruitment and Training," in Ministry of Defence, *Annual Report 2003–2004*, p. 146.
11. Presentation by this official in Los Angeles, June 2003.
12. For historical background, see V. K. Shrivastava "Higher Defense Management of India: A Case for the Chief of Defence Staff," *Strategic Analysis* Vol. XXIV, No. 6 (September 2000), pp. 1029–1038; Jaswant Singh,

- Defending India* (Chennai: Macmillan, 1999), p. 106; and Vinod Anand, "Management of Defence: Towards an Integrated and Joint Vision," *Strategic Analysis* Vol. XXIV, No. 11 (February 2001), pp. 1973-1987.
13. Ministry of Defence, *Annual Report 2003-2004*, p. 19. Also see Gurmeet Kanwal, "Case for a Chief of Defence Staff (CDS): Inescapable Requirement," *Strategic Analysis* Vol. XXIV, No. 5 (August 2000), pp. 1017-1020; Kargil Review Committee Report, *From Surprise to Reckoning* (New Delhi: Sage, 1999); and Government of India, Ministry of Defence, *Report of the Group of Ministers on National Security*, 2001, pp. 97-98, <http://www.mod.nic.in/newadditions>.
  14. The most recent reference to this issue is in "Strategic Nuclear Command Being Put in Place: Lt Gen Joshi," *Express India*, September 30, 2003, <http://www.expressindia.com>. Also see John Cherian, "In Defence of Changes," *Frontline*, September 15-28, 2001, <http://www.frontlineonnet.com>.
  15. See "Headquarters Integrated Defence Staff" Integrated Defence Staff, 2005, <http://www.ids.nic.in/>; "Integrated Defence Staff," Bharat Rakshak: The Consortium of Indian Military Websites, January 28, 2005, <http://www.bharat-rakshak.com/LAND-FORCES/Army/IDS.html>; Ministry of Defence, *Annual Report 2003-2004*, pp. 19-22.
  16. The location of India's first integrated theater command, far from the Indian mainland, reflects India's concerns about the vulnerability of this territory to Islamist separatism in Indonesia, illegal fishing, trafficking in arms and narcotics, and piracy. See "Headquarters Integrated Defence Staff," 2003, and, for details on the ANC, "Andaman and Nicobar Command" Integrated Defence Staff, 2005, <http://www.ids.nic.in/ancommand>.
  17. One of the litmus tests for jointness across the armed forces is whether or not procurement is done jointly. One interviewee cited missiles as an example of recent joint acquisition efforts (he did not specify which missile system). He explained, "All services buy their own [missiles]. This means that we are losing price leverage on the systems, on spares and maintenance. Now we have a system in place where the service that is the largest buyer will order for the three services." While this suggests an important step in the direction of joint acquisition, it is not truly a joint process. This individual also suggested that this missile acquisition strategy is still a unique effort within the armed forces.
  18. Interview in the Headquarters of the IDS in September 2002. "Blue Helmet Mandate" refers to peacekeeping operations under the UN Charter, Chapter 6, wherein the UN intervenes at the request of the warring parties. This is in contrast to peace enforcement operations, which are conducted under Chapter 7 of the UN Charter. In Chapter 7 operations, the UN intervenes when the consent of one or more parties is absent. For these operations, an active combat role is authorized. India prefers to participate in Chapter 6 peacekeeping operations.
  19. Confidential interview in New Delhi in June 2003.
  20. Interview with representatives of the Joint Secretariat for United Nations Peacekeeping in June 2003.
  21. The largest active duty army is that of the People's Republic of China at 1.6 million. See International Institute for Strategic Studies, *The Military Balance 2004-2005* (London: Oxford University Press, 2004). India also has some 300,000 people in the active army reserves and another 500,000 in an inactive reserve. Several other land forces can support the army in internal security duties throughout India. The most prominent are the Border Security Force (52,500), the Assam Rifles (32,400), the Indo-Tibetan Police Force (9,000), the Central Reserve Police Force (181,163), and the Rashtriya Rifles (7,357 personnel). All of these are under the Ministry of Home Affairs except the Rashtriya Rifles, which are under the Ministry of Defence. See R. K. Jasbir Singh, ed., *Indian Defence Yearbook 2004* (Dehra Dun: Natraj Publishers, 2004), pp. 276-281. Also see Jane's World Armies, India, "Army Organisation," <http://www.janes.com> (accessed October 18, 2004).
  22. This view was expressed in interviews at the US Pacific Command (PACOM) and the US Embassy, New Delhi in June 2003.
  23. See Bonita Baruah, "Conduct Unbecoming," *Times of India Online*, January 29, 2005, <http://www.timesofindia.com>; Rajat Pandit, "Army to Get Leaner, Meaner and Younger," *Times of India*, December 17, 2004; Girja Shankar Kaura, "Report on Speedy Army Promotions Accepted," *The Tribune*, December 17, 2005, <http://www.tribuneindia.com>. The 12,000 figure is found in reports dating back to 2003. See India Defence Consultants, *India's Defence Budget - 2003-2004* (New Delhi: IDC, May 5, 2003), [http://www.indiadefence.com/def\\_bud2003](http://www.indiadefence.com/def_bud2003). This appears to be an improvement over figures available in 2002, when the army had a shortfall of more than 14,000 officers. It is important to note, however, that accurate and timely data are hard to come by.
  24. Pandit, "Army to Get Leaner, Meaner and Younger."
  25. For more information about these commands and their leadership, see Jane's World Armies, India, "Army Organisation," <http://www.janes.com> (accessed October 18, 2004).
  26. See "Indian Army Today, Organizational Structure," Bharat-Rakshak: The Consortium of Indian Military Websites, last updated January 31, 2005, <http://www.bharat-rakshak.com/LAND-FORCES/Army/Link4>.
  27. See Lantz Turner, "Helping India's Earthquake Victims," *Asia Pacific Defense Forum*, Spring 2001, [http://forum.apan-info.net/spring\\_01](http://forum.apan-info.net/spring_01).
  28. See C. Christine Fair, "Military Operations in Urban Areas: The Indian Experience," *India Review* Vol. 2, No. 1 (January 2003), pp. 49-76.
  29. Colonel Steven B. Sboto, "India and U.S. Military Cooperation and Collaboration: Problems, Prospects and Implications," thesis submitted to the National Defence College, New Delhi, 2001, p. 26.
  30. See Fair, "Military Operations in Urban Areas," and C. Christine Fair, *Urban Battle Fields of South Asia: Lessons Learned from Sri Lanka, India and Pakistan* (Santa Monica: RAND, 2004).

31. The Indian Army believes that the US Army could benefit from its knowledge of desert, jungle, and high-altitude warfare as well as counterinsurgency. It also believes that the United States could find considerable value at CUNPK – particularly given that the United States has in the last decade been increasingly involved in peace operations. See Colonel Steven B. Sbotto, “India and U.S. Military Cooperation and Collaboration,” pp. 44–45.
32. For more details about various inter-service rivalries and competition over areas of responsibility and resource-allocations, see Anand, “Management of Defence,” and Raj Chengappa, *Weapons of Peace: The Secret Story of India's Quest to be a Nuclear Power* (New Delhi: Harper Collins, 2000), pp. 364–365.
33. See for example, Ashok K. Mehta, “Made in India CDS,” *Rediff.com*, April 27, 2001.
34. J. G. Nadkarni writes that the success in the 1971 war was to a great extent attributable to the fact that the three service chiefs met daily and dovetailed their operational plans. See his “India’s Forces Must Join or Perish,” *Rediff.com*, June 8, 2000.
35. B. L. Kak, “Men and Matters: Former Army Chief Criticises Defence Ministry,” *Daily Excelsior*, August 17, 2001 <http://www.dailyexcelsior.com>.
36. Nadkarni, “India’s Forces Must Join or Perish.”
37. See Satu Limaye, *U.S.–Indian Relations: The Pursuit of Accommodation* (Boulder: Westview Press, 1993), and Fair, *Counterterror Coalitions*.
38. Waheguru Pal Singh Sidhu, “Enhancing Indo-U.S. Strategic Cooperation,” *Adelphi Paper 313* (London: International Institute of Strategic Studies, 1997), p. 50. See also Fair, *Counterterror Coalitions*.
39. Interview, June 2003.
40. See Embassy of India, “Joint Statement of the India–U.S. Defense Policy Group,” December 3, 2001, <http://www.indianembassy.org>.
41. See Ashley J. Tellis, “Seeking Breakthrough: The Meandering US–India Relationship Needs a Fresh Impetus,” *FORCE*, October 2004, p. 8.
42. See Asia Pacific Defense Forum, “2002: Balance Iroquois – Renewing India–U.S. Defense Cooperation,” Fall 2002, <http://www.forum.apan-info.net/Fall02>.
43. “Balance Iroquois” actually dates back to the 1960s, when the United States and India had relatively strong military cooperative engagement, mostly motivated by a joint threat perception concerning China. See <http://www.globalsecurity.org/military/ops/balance-iroquois>.
44. Personal communication with the Defence Attaché, Embassy of India, Washington DC, February 2005. See also Asia Pacific Defense Forum, “Balance Iroquois: 2003–01: Indian–U.S. Troops Train to Combat Terrorism,” Summer 2003, <http://www.forum.apan-info.net/summer03>.
45. No publicly available information exists about this exercise. The author spoke with officials within the US Special Operations Command Pacific and with the Defence Attaché, Embassy of India, Washington DC, in February 2005. See also United States Embassy, New Delhi, “People, Progress and Partnership: The Transformation of U.S.–India Relations” (New Delhi: US Embassy, September 23, 2004), p. 42, <http://www.newdelhi.usembassy.gov/wwwfpppcov.pdf>.
46. Jupinderjit Singh, “Indo–US Exercises Not China Specific, Says Army,” *The Tribune*, September 13, 2003.
47. Interview with United States Army Pacific, G-5, South Asia Desk, February 22, 2005.
48. Other problems that are more severe for the armies include significant differences between the Indian Army *javan* (enlisted soldier) and the American enlistee. These differences manifest themselves in quality and language capabilities. More critically, the Indian Army does not have a senior non-commissioned officer counterpart. These differences could pose some interoperability concerns, but have not been barriers to joint exercises.
49. “India, US to Hold Larger Joint Military Exercises,” *Press Trust of India*, December 10, 2003, <http://news.indiainfo.com/2003/12/10/10>. For a historical overview, see Ravi Tomar, “India–US Relations in a Changing Strategic Environment,” Research Paper No. 20 2001–02 for the Information and Research Services (Department of the Parliamentary Library, 2002).
50. In 2004, one phase of the exercise was held in India and the other in Hawaii. In 2005, it will be held in India and in Alaska. See Mary Markovinic, “U.S.–India Armies Set Plans for Next Two Years,” U.S. Army, Pacific Public Affairs Office, December 27, 2004, [http://www.usarpac.army.mil/news/releases\\_2004/us-india\\_plan.asp](http://www.usarpac.army.mil/news/releases_2004/us-india_plan.asp).
51. Conversation with United States Army Pacific, G-5, South Asia Desk. February 22, 2005.
52. See *People, Progress Partnership*, pp. 43–44.
53. Interview, MEA, June 2003.
54. Interview, IDS, June 2003.
55. Interview, MEA, June 2003.
56. Confidential interview with civilians in the MoD in June, 2003.
57. Srivastava, “Higher Defense Management of India.”
58. For more information about the future platforms and systems to be acquired, see Singh, *Indian Defence Yearbook*, p. 196.
59. *Indian Defence Yearbook 2004*, p. 294.
60. See *Indian Defence Yearbook 2004*, p. 292.
61. Interview with individuals in the Defense Attaché Office, United States Embassy, New Delhi, in June 2003.
62. The LOC is not an international border. Converted from a ceasefire line, the LOC divides the disputed region of Kashmir into the portions controlled by India and Pakistan.



63. The paramilitary forces have been using the Israeli sensor (Elop-manufactured LORROS) on a test basis with unsatisfactory results. Singh, *Indian Defence Yearbook*, pp. 196, 206.
64. Singh, *Indian Defence Yearbook*, p. 196.
65. Singh, *Indian Defence Yearbook*, pp. 201-202.
66. However, one highly-placed retired Indian army officer noted in October 2003 that missile defense does not really meet India's security needs, as systems such as the Arrow would not be effective against Pakistan's longer-range missiles such as the Ghauri or the Shaheen-II.
67. For more information about the DRDO, see its website at <http://www.drdo.org/index.shtml>.
68. Singh, *Indian Defence Yearbook*, p. 205.
69. For more information about the US Army Transformation, see McNaugher, "Refining Army Transformation," pp. 293-307.
70. Interview with individuals in the Defense Attaché Office, United States Embassy, New Delhi, June 2003.
71. Jane's World Armies, India, "Army Organisation," <http://www.janes.com> (accessed October 18, 2004).
72. Jane's World Armies, India, "Army Organisation," <http://www.janes.com> (accessed October 18, 2004).
73. *Report of the Group of Ministers on National Security*, p. 8.
74. Indian officials said they will continue to develop jointness, increase the use of precision-guided munitions (PGMs) and air power to soften the battlefield, and pursue high technology to permit more dispersed operations. They were acutely aware that operating in nuclear, biological, and chemical environments will require non-linear operations.
75. *Indian Defence Yearbook 2004*, pp. 43-202.
76. See Juli A. MacDonald, *Indo-U.S. Military Relationship: Expectations and Perceptions* (Falls Church: Booz Allen Hamilton, 2002); Fair, *Counterterror Coalitions*.
77. The Indian Navy, in contrast to the other two services, is capable of projecting power in peacetime and is the premier force for making India's presence known throughout the Indian Ocean basin. See MacDonald, *Indo-U.S. Military Relationship*.
78. Interview, MEA, June 2003.
79. Sboto, "India and U.S. Military Cooperation and Collaboration: Problems, Prospects and Implications," pp. 44-45.

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