

Force Development Options for India by 2030

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INTRODUCTION

Strategists and military force planners in India and the United States are grappling with a similar set of challenges posed by China's military modernization and increasingly aggressive foreign policy. While the overall challenge may be similar, India's responses must conform to India's unique strategic position rather than attempt to emulate the United States in reduced form. Moreover, while increased budgets and institutional defense reform may improve India's capacity, these efforts are politically and bureaucratically difficult and cannot singlehandedly solve the challenges India faces in competing with China.

This paper proceeds in three parts. The first part compares the strategic situations of India and the United States vis-à-vis China and uses the contrasts in this analysis to shade in the outlines and assumptions for the rest of the paper. Next, the paper explores two specific military challenges—one on the land border and one at sea—that China could pose, and recommends Indian strategies and operational responses. Finally, the paper concludes with force-planning recommendations for India based on the demands of these responses and informed by the core strategic assumptions laid out in the first section.

Before beginning the analysis, several caveats are in order. The author is an American strategist and force-planner, not an expert in Indian military affairs. While he has researched the topic to the best of his ability in a limited time, it is no substitute for years of experience. The author therefore uses U.S. military strategy and force planning as a foil to better understand India's decision space and communicate these ideas to an audience that, like him, may not be experts in Indian strategic affairs. Finally, the ideas and recommendations in this paper are conceptual and nascent. They require further wargaming and analysis to make them more detailed, concrete, and implementable.

SIMILAR CHALLENGE, DIFFERENT CAPABILITIES

On its face, the strategic situation Indian armed forces face over the next ten years appears similar to the challenges that formed the central problem statement of the U.S. Department of Defense's 2018 *National Defense Strategy*. India and the United States must address the challenges posed by China's military modernization and shift toward a more forward-leaning strategic posture. China's military challenge to the free and open Indo-Pacific order requires Indian and U.S. armed forces to update or replace antiquated military strategies, operational concepts, organizational constructs, and equipment.

At the same time, both India and the United States face ongoing terrorist and irregular threats, as well as conventional and nuclear threats from less-formidable regional opponents. India and the United States even share a history of using simultaneous conflicts to gauge the overall capability and capacity of their armed forces. The armed forces of both states must undertake programs of profound peacetime innovation to meet future challenges while present-day threats and operations place incessant demands on scarce resources, both financial and intellectual.

Despite these similarities, some key differences are worth highlighting as they help delineate how India's military strategy, operational concepts, and force development should diverge from that of the United States. When opining on the military strategies and forces of allies or partners, the tendency can often be to create a mirror image of one's own military forces or, slightly better, to imagine how their forces might advance the interests of one's country, rather than those of the ally or partner. The former approach is usually doomed to failure. The latter can succeed, but only insofar as interests and abilities align.

This paper assumes that India and the United States share an interest in maintaining a free and open Indo-Pacific region and that achieving this requires checking the expansion of Chinese power, defending our shared interests, and deterring or defeating Chinese aggression. The following paragraphs lay out—in the most general terms—the critical differences in ability between India and the United States that will shape the paper's recommendations for Indian force planning.

U.S. armed forces are the global benchmark. Though their margin versus China has eroded in East Asia, U.S. forces retain many critical advantages, and their advantages grow as a function of distance from China. U.S. forces are well trained, well equipped, well educated, and possess a deep reserve of combat experience. Likewise, the U.S. defense industrial base is unequaled in its ability to produce cutting-edge weaponry. Expanding to the strategic and grand strategic levels, the United States possesses a network of allies and partners that is likely unparalleled in history and an enormous architecture of bases and facilities to support global military operations. Underwriting these advantages is a U.S. economy that, while not growing as fast as China's or India's, remains the world's largest and possesses numerous structural advantages, such as the status of the U.S. dollar as the global reserve currency.

India's large armed forces quantitatively overwhelm its longtime rival Pakistan, but they have rapidly fallen behind Chinese forces in terms of training and equipment. Indian strategists often cite that India's military has more recent combat experience (the 1999 Kargil War versus China's 1979 war with Vietnam); however, Kargil was not recent enough to have provided the majority of Indian forces with relevant experience. Despite Prime Minister Narendra Modi's "Make in India" policy and decades spent bolstering it, India's defense industrial base is not capable of supporting a concerted modernization of India's armed forces. India's longstanding policy of strategic autonomy has allowed it strategic flexibility, but left India with no significant allies or partners it can rely on in times of need. India's economy, while vibrant, is smaller than China's and recent growth-rate differentials to India's advantage are unlikely to close this gap within the ten-year horizon of this paper. Moreover, India's defense spending will likely continue to lag China's by a substantial margin, barring a massive shift in India's fiscal priorities.

Over the next ten years, then, the core difference between the United States and India regarding military competition with China is that the United States can feasibly pursue a strategy of fielding military forces superior to those of China—what defense planners sometimes refer to as a strategy of overmatch—while India cannot. Indian strategist and force planners must instead seek ways to offset their weaknesses and subvert Chinese strengths.

This paper also assumes that a *deus ex machina* will not solve India's larger strategic problems. India and the United States both suffer from structural inefficiencies and obstacles to change in their defense establishment; however, India's are far worse by any reasonable assessment. Post-independence, India's concerns over military meddling in government helped preserve India's democracy from the

fate that has befallen many of its neighbors. However, India's unique model of civil-military relations has had the negative side effect of hampering India's ability to develop and implement effective strategies.¹ India lacks a strong defense bureaucracy or a joint military body to oversee strategy. Instead, India's military services dominate the discussion, with the Indian Army wielding by far the most power. The result, according to most observers of Indian defense issues, is a ground-centric military strategy and a budget that allocates too many resources toward Army personnel and not enough toward modernizing India's badly outdated Air Force or undersized Navy.²

Would-be reformers of India's armed forces often seek to surmount these strategic obstacles through one of two approaches: advocating for increased defense budgets to raise all boats with the tide, or by recommending a massive reorganization of the Indian military along the lines of the U.S. Goldwater-Nichols reforms or the restructuring of China's People's Liberation Army (PLA) since 1996. Even if major increases in defense spending were politically and fiscally feasible, they would be spent inefficiently without major reforms. Moreover, it would take enormous increases in military spending for India to begin catching up with China in aggregate military power.

If possible, India should consider major defense reforms based on lessons learned from U.S., Chinese, and recent Russian efforts. While a thorough consideration of potential reforms is beyond the scope of this paper, two possibilities stand out. First would be to create more regional and functional joint warfighting commands or to increase the day-to-day use of joint task forces. At a time when military success increasingly hinges on rapidly synchronizing operations across multiple domains and organizations, India's military command structure is badly stove-piped and sclerotic. Second would be to establish a standing joint body of experienced civilian and military strategists and analysts to oversee the formulation and implementation of defense strategy, operational plans and concepts, and force development.

Reorganization of India's armed forces and defense bureaucracy would certainly be salutary, but it cannot be the sine qua non of Indian defense strategy and force development, simply because it is so improbable absent an external stimulus. The United States embarked on Goldwater-Nichols only after several military failures exposed the need for change. Likewise, the PLA only began to reform following the 1990–91 Gulf War, which demonstrated that its strategy and its military hardware were obsolete and accelerated its program after the 1996 Taiwan Strait crisis cemented the U.S. military as China's primary planning threat. Both reform efforts took decades to implement and were not cost free.

Given this skeptical assessment of the likelihood or efficacy of significant increases in Indian defense spending or major reforms to India's Department of Defence or armed forces, this paper assumes that India cannot spend or reform its way to achieving its strategic goals. The recommendations laid out herein represent changes, to be sure, but they obey "laws of physics" in terms of budgets and bureaucratic proclivities.

¹ On India's unique and complex history of civil-military relations and the challenges this poses in terms of higher defense management, see Steven I. Wilkinson, *Army and Nation: The Military and Indian Democracy Since Independence* (Cambridge, MA: Harvard University Press, 2015); and Anit Mukherjee, *The Absent Dialogue: Politicians, Bureaucrats, and the Military in India* (New York: Oxford University Press, 2019).

² See Stephen P. Cohen and Sunil Dasgupta, *Arming Without Aiming: India's Military Modernization* (Washington, DC: Brookings Institution Press, 2010); John H. Gill, "Challenges for India's Military Strategy: Matching Capabilities to Ambitions?" in *Power, Ideas and Military Strategy in the Asia-Pacific: Strategic Asia 2017–18*, eds.; and Ashley J. Tellis et al. (Seattle, WA: National Bureau of Asian Research, 2017), 141–175.

This brief assessment leads to the following assumptions and principles that form the backbone of this paper:

- India and the United States share an interest in maintaining a free and open Indo-Pacific region and achieving this requires checking the expansion of Chinese power, defending our shared interests, and deterring or defeating Chinese aggression.
- India cannot feasibly pursue a strategy of fielding military forces superior to those of China and must instead seek ways to offset their weaknesses and subvert Chinese strengths.
- Budget increases or a concerted reform effort will not solve India's larger strategic problems. Increased budgets without reform will not help India catch up to China. Reform, while necessary, is politically difficult and likely to be long and costly.

Given this rather dire assessment of India's capacity for strategic competition with China, its position would seem to be hopeless, and yet it is not. India has several strategic advantages, most critically geography and a largely defensive strategic posture, which can allow its armed forces to be effective in countering China without massive increases in defense spending or major restructuring.

THREAT SCENARIOS AND INDIAN RESPONSES

China's military modernization has shifted the military balance throughout the Indo-Pacific, while China's aggressive political and economic moves in the region have increased tension with India. On land, China has moved steadily to cement full control over the territories and restive minority populations in Tibet, defend its ground lines of communication to Pakistan and Central Asia (alongside its investment in the landward "Belt" of its Belt and Road strategy), and put increasing pressure on its border with India. In an arc from the Senkaku Islands in the East China Sea through Taiwan, the South China Sea, and the Indian Ocean to Djibouti and other parts of eastern Africa, China has increased its maritime presence and influence. The confluence of trade, competing territorial claims, and consequent demands for military force is creating a new Indo-Pacific "Ring of Fire" of potential conflict flashpoints surrounding India.

This section examines two scenarios for conflict between India and China: an escalation of a border dispute along the Line of Actual Control (LAC) reminiscent of the 1962 Sino-Indian War, and a maritime clash in the Indian Ocean. Wargaming and analysis conducted to support this research effort combined these two scenarios into a larger contest for supremacy in the Indian Ocean region.

Border Conflict

One of the core conflict scenarios driving Indian strategy and force planning for China is a conflict along the border or LAC between India and China. Border disputes helped spur the Sino-Indian War in 1962 and the border recently has seen renewed tension, highlighted by the 2017 standoff in the Doklam region where Chinese, Bhutanese, and Indian territories abut one another. This area is of particular concern to Indian planners, as a small southward thrust of Chinese territory looks like a dagger pointed toward one of India's most vulnerable geographic points—the so-called Chicken's Neck or the Siliguri Corridor that runs between Nepal, Bhutan, and Bangladesh and connects the main portion of Indian territory with its Northeastern Provinces that lay to the east of Bangladesh.

China also controls a territory to Kashmir's northwest (Aksai Chin) claimed by India and continues to lay claim to the Indian northeastern province of Arunachal Pradesh.

A border conflict between China and India could occur for a variety of reasons and the direct cause would shape China's strategy. For example, if China were seizing a key piece of terrain, it might seek to avoid engaging Indian forces. If, however, China were seeking to teach India a lesson as it did in 1962, it might instead target a vulnerable Indian unit to cause attrition or take prisoners. If China were seeking a broader reordering of the political-military status quo in the region, its approach might be more deliberate and expansive.

Nevertheless, China's approaches are likely to have some common themes. Prior to any potential conflict, China would likely spend weeks, months, or even years gathering and developing information on its target and the disposition of Indian forces it might face. Indian forces generally outnumber Chinese forces along the border. China would likely seek to offset this disadvantage by using covert movement or deception—such as acting under the guise of an exercise—to concentrate forces against a weak point in India's defense perimeter. China would move quickly to seize key terrain such as passes or high ground with good fields of fire. Then, China would rapidly reinforce its position from other theaters using its road and rail networks in the region. At the same time, China would probably use firepower (likely artillery, given the altitude and terrain) and combat engineering to prevent a counterattack while at the same time launching feints against other points along the border to confuse India's response and prevent an effective counterattack.³ Having established a *fait accompli*, China would present India with an unpleasant dilemma—counterattack and potentially escalate a conflict against a superior foe, or accept a loss of territory and the political ramifications that follow.

The systems that most concern U.S. strategists and planners in East Asia conflict scenarios—anti-access/area-denial (A2/AD) systems such as sophisticated air defenses, electronic warfare, and long-range precision-guided missiles—might play a role in Chinese operations along the LAC. However, their effects would likely be much more limited than in an air and maritime scenario in the western Pacific. The mountainous terrain significantly limits the effective ranges of sensors and communications networks. At the same time, the light units India might put forward on the border make poor targets for long-range precision weaponry. China could use long-range precision fires to strike airfields, roads, railways, and other key infrastructure that India's armed forces rely on to respond to an incursion. However, given the number of potential Indian targets (in contrast to the limited number of U.S. bases in the Western Pacific), a major strike campaign will likely not be worth the cost or the risk of escalation from China's perspective. It is far more likely that China would use its precision fires to disrupt and degrade forces in the vicinity of its offensive, while also isolating the battlespace.

Maritime Clash in the Indian Ocean

³ On how a Sino-Indian border conflict might unfold, see Iskander Rehman, "A Himalayan Challenge: India's Conventional Deterrent and the Role of Special Operations Forces Along the Sino-Indian Border," *Naval War College Review*, 70 no. 1 (2017), 104–142; and Larry M. Wortzel, "PLA Contingency Planning and the Case of India," in *The People's Liberation Army and Contingency Planning in China*, eds. Andrew Scobell et al. (Washington, DC: National Defense University Press, 2015).

Another critical scenario for Indian force planners is a maritime conflict between China and India in the Indian Ocean. Such a scenario could be *sui generis*, or an expansion or escalation of another dispute elsewhere. China may, for example, choose to escalate at sea if India stalemates its forces on land.

As with any scenario, the devil is in the details of the assumptions about how the war begins and the strategic objectives of the belligerents. Nevertheless, some issues are likely to be common across a range of potential scenarios. First, much as is the case on the LAC India will likely have an initial numerical advantage. India maintains virtually all its forces in the Indian Ocean region, while most of China's forces are east of Malacca. This will put a great deal of pressure on China to either keep its Indian Ocean forces as a fleet in being, or to rapidly link its western and eastern forces. This, in turn, will put pressure on India to prevent these outcomes.

Second, entrances to the Indian Ocean will be key terrain. In ten years, China's fleet may have multiple basing options in the Indian Ocean, but presently their major hub is in Djibouti.⁴ People's Liberation Army Navy (PLAN) surface ships and submarines may also have access to Pakistani ports at Gwadar and Karachi; however, in the event of a crisis or conflict with India, these ships would likely put to sea and attempt to get out of the range of India's land-based strike systems.⁵ This could allow India's Navy to bottle up the PLAN in the chokepoint of the Gulf of Aden. The remainder of China's fleet in the east would therefore need to enter the Indian Ocean through one of several major chokepoints including the straits of Malacca, Sunda, and Lombok. This unique geography could give India the opportunity to operate on interior lines and defeat the PLAN in detail, or at least delay and attrite their forces sufficiently to prevent China from gaining maritime superiority in the Indian Ocean.

Third, maritime domain awareness; wide-area intelligence, surveillance, and reconnaissance (ISR); and long-range strike will be crucial.⁶ India's geographic advantages are for naught if it cannot exploit them to deny China from projecting its superior maritime power into the Indian Ocean by rapidly hunting down PLAN forces in the Indian Ocean and threatening transit through key chokepoints before the PLAN can reinforce from the South China Sea. This competition over which side can effectively locate, target, and strike the other side's forces first is likely to determine maritime superiority in the Indian Ocean, and it's presently a toss-up.⁷ India has the home-field advantage, a fleet of powerful maritime domain awareness aircraft in its P-8I Poseidons and a lethal anti-ship missile in the BrahMos. China has a larger and more capable constellation of space-based ISR assets to include both electronic and image intelligence, as well as a large arsenal of cruise and ballistic anti-ship missiles. A key point, however, is that most of China's maritime surveillance and strike assets are oriented toward the Western Pacific and the South China Sea, and satellites are vulnerable to jamming, spoofing, dazzling, blinding, or cyber and kinetic attacks.

⁴ One such hub may be in Cambodia. Jeremy Page et al., "Deal for Naval Outpost in Cambodia Furthers China's Quest for Military Network," *The Washington Post*, July 22, 2019, <https://www.wsj.com/articles/secret-deal-for-chinese-naval-outpost-in-cambodia-raises-u-s-fears-of-beijings-ambitions-11563732482>.

⁵ It is possible that China might leave its ships in Pakistani ports in an attempt to get India to escalate by striking Pakistan. In this scenario, however, these ships would be operationally out of action.

⁶ See Kartik Bommakanti, *India and China's Space and Naval Capabilities: A Comparative Analysis* (New Delhi: Observer Research Foundation, 2018), <https://www.orfonline.org/research/42694-india-and-chinas-space-and-naval-capabilities-a-comparative-analysis/>.

⁷ U.S. Navy Captain (retired) Wayne P. Hughes coined the phrase "attack effectively first," and it remains a guiding principle of naval combat. Christopher Nelson, "Fleet Tactics Returns—A Conversation with Authors Wayne Hughes and Bob Girrier," *Center for International Maritime Security*, July 30, 2018, <http://cimsec.org/fleet-tactics-returns-a-conversation-with-authors-wayne-hughes-and-bob-girrier/37040>.

Fourth, time will be a critical factor. India's initial advantages are ephemeral—they are only a product of the time needed for China to marshal its forces in the Indian Ocean. This means that India must maximize both the duration of this window (e.g., by increasing its warning time for China's military action and delaying Chinese deployment of forces) and the amount of damage Indian forces can achieve during it (e.g., by rapidly finding, targeting, and striking PLAN assets).

The role of commerce warfare in the outcome of the conflict will likewise depend on time. In a short conflict its effect will be minimal; in a longer war, the ability of one side or the other to deny movement of trade—and particularly energy—across the Indian Ocean could alter the strategic calculi of either side.

IMPLICATIONS FOR INDIAN STRATEGY AND FORCE DEVELOPMENT

Public discussion of India's military strategy in these scenarios suggest overly ambitious ends that do not comport with India's ways and means. On the border, India seeks to defend all of its terrain with light forces and to reinforce this forward posture quickly, while also counterattacking into Chinese territory with heavier maneuver forces to seize terrain to compel conflict termination or for post-conflict negotiation.⁸ Defending every inch of "sacred soil" is a rousing phrase and there are undoubtedly strong political compulsions behind the adoption of such a military strategy. It is a suboptimal operational concept, however, as it stretches forces thin, prevents maneuver and concentration, and often allows an adversary to dictate the time and place of battles. India's notion of using maneuver into Chinese territory on the Tibetan plateau should, in theory, help alleviate this concern. However, leaving the mountains to enter the plateau makes high-signature Indian forces vulnerable to the full capabilities of Chinese precision strikes and counter-maneuver. It would be foolhardy at best and potentially suicidal at worst. The origins of these strategies may be political in nature, but this is a case in which military leaders and civilian defense strategists should respectfully point out that by attempting to defend the entire border, India will effectively defend none of the border.

At sea, some Indian maritime strategists hold out visions of engaging in economic warfare by using a blockade to cut off energy flows from the Middle East to compel Chinese capitulation without direct combat.⁹ A maritime blockade could, in theory, help compel China to seek a negotiated settlement on terms favorable to India. Unfortunately, to execute this strategy India would have to choke off altogether the flow of energy from the Middle East to East Asia by seizing and impounding ships, or it would have to escort ships to neutral ports to ensure that their cargos aren't re-sold and re-routed to China. This would place an impossible burden on the Indian Navy and massively disrupt energy flows to key Indian partners such as Japan and Australia.¹⁰

⁸ See, for example, Anit Mukherjee and Yogesh Joshi, "From Denial to Punishment: The Security Dilemma and Changes in India's Military Strategy Towards China," *Asian Security*, 15 no. 1, (2018), 25–43.

⁹ An excellent summary of this vibrant debate is provided in Shashank Joshi, "Can India Blockade China?" *The Diplomat*, August 12, 2013, <https://thediplomat.com/2013/08/can-india-blockade-china/>.

¹⁰ For a broader debate over the potential ramifications of a blockade of China see Sean Mirski, "Stranglehold: The Context, Conduct and Consequences of an American Naval Blockade of China," *Journal of Strategic Studies*, 36 no. 3 (2012), 385–421; and Evan Braden Montgomery, "Reconsidering a Naval Blockade of China: A Response to Mirski," *Journal of Strategic Studies*, 36 no. 4 (2013), 615–623.

India must better align its strategic reach with its grasp. In both land and maritime scenarios, India seeks to conduct long-range maneuver warfare that deprives its forces of their natural geographic advantages and leaves them prey to China's far more effective ISR and strike systems.

In both scenarios, India should exploit its defensive posture and geographical advantages to draw Chinese forces into disadvantageous encounters and stretch China's lines of communication. Instead of traditional offensive maneuver, India should use unconventional forms of maneuver to attack the PLA's critical systems, disrupt their operations, and impose costs on the Chinese regime. Wherever possible, India should adopt tactically and operationally offensive, multi-domain attacks to support its defensive strategy, thereby exploiting the offense-dominant warfighting regimes in precision-strike, space, cyberspace, the electromagnetic spectrum, and undersea warfare. Specifically, this would include denying or degrading China's understanding of the battlespace and Indian force dispositions through:

- Offensive cyberattacks to disrupt networks and exfiltrate information;
- Information operations to confuse Chinese ISR and feed bad data into Chinese targeting processes;
- Camouflage, concealment, and deception;
- Constant movement of forces to interfere with Chinese operational planning;
- Jamming/dazzling of overhead sensors; and
- Exercising emissions control to negate China's electronic intelligence capabilities.

In a border conflict, India should use combat engineering to improve infrastructure on its side of the LAC, but simultaneously rig the infrastructure for detonation to prevent Chinese forces from exploiting penetration and potentially cut off their lines of advance and communication. Rigging hillsides with explosives to create avalanches and landslides is an excellent way to slow movement or create heavy casualties.

Instead of a preclusive defense, India should hold key points, isolate them with firepower (especially tactical guided munitions), and use infiltration tactics to cut off and surround Chinese forces in valleys. There, Indian forces could impose attrition or hold Chinese forces hostage for political concessions.

Instead of combined-arms maneuver to seize territory on the Tibetan plateau for post-conflict trades—which might open up Indian forces to withering air and missile strikes—India should hold its maneuver forces in the mountains and use unconventional warfare and offensive cyberattacks to impose costs on China in Tibet. This strategy may cede some territory, but it would impose considerable costs on the PLA and the Chinese regime, while putting Indian forces in a strong position to counterattack to regain losses.

At sea, India must prevent PLAN forces in the Indian Ocean from combining with forces coming from the Pacific. India cannot adopt a fully defensive posture, nor can it seek a single Mahanian battle in the South China Sea or Eastern Indian Ocean. If India sits back, China's overall advantage in forces—and particularly precision strike—will eventually crush the Indian Navy. If India engages a major PLAN force in combat, it's likely to take egregious attrition. India must therefore find a way to defeat PLAN forces in detail.

At a high level, India could accomplish this by slowing the flow of PLAN forces from the South China Sea while attempting to draw the smaller PLAN force in the Indian Ocean into a naval battle. With PLAN forces in the western Indian Ocean neutralized, Indian forces could take up positions between India and the Andaman and Nicobar Islands to prepare for the arrival of the PLAN's main force.

In the east, India should adopt a layered, economy of force defensive posture. These layers should 1) surveil/harass PLAN forces en route, 2) ambush the PLAN at key chokepoints, and 3) deny the PLAN freedom of maneuver into the main shipping lanes of the Indian Ocean (i.e., Malacca to the Arabian Sea and the Bab al Mandeb). India should commit at least one, possibly two, nuclear-attack submarines (SSNs) and at least two, possibly up to six, of its diesel-electric boats (SSKs). It should send SSNs into the South China Sea and leave two SSKs near likely points of entry into the Indian Ocean. The SSNs could trail China's surface fleet and seize an opportunity to take a shot at a key target such as an aircraft carrier. Even if the attack is unsuccessful, it will slow China's flow of forces to the Indian Ocean, as the PLA would have to raise its anti-submarine warfare (ASW) level of effort. The SSKs would ambush PLAN forces at the exit of Malacca or Sunda. Land-based missiles, maritime-patrol aircraft, and strike aircraft in the Andaman and Nicobar Islands would present another layer of defense.

This strategy would level the maritime playing field between India and China. The PLAN would still have a major advantage in overall forces, but it might be reluctant to commit them all given its concerns about Japan and the United States to its east. It would still be a difficult fight, but this strategy would at least give India a chance of victory, or an advantageous draw at sea.

HIGH-LEVEL FORCE-PLANNING RECOMMENDATIONS

The following force-planning recommendations flow from the military strategies outlined above. To the greatest extent possible, they adhere to the fundamental assumptions of this paper: 1) India and the United States share an interest in maintaining a free and open Indo-Pacific region, 2) India cannot feasibly pursue a strategy of fielding military forces superior to those of China and should instead pursue asymmetric offsets, and 3) budget increases or a concerted reform effort will not solve India's larger strategic problems.

- **Exploit the third-mover advantage to invest in offensive capabilities in offense-dominant domains (space, cyber, precision fires, undersea).** This recommendation might well be entitled, "avoid the tarpit the U.S. Department of Defense is in today." The United States has been the first mover in these areas at a time when there were few, if any, credible countermeasures. Now, enormous U.S. investments in these areas can be negated by relatively inexpensive systems or stratagems. India's relative backwardness in precision-guided or net-centric warfare can be an advantage, as it allows India to draw on the experiences of the first mover (the United States) as well as the second movers (China and Russia). The move-countermove competition between these three states suggests that offense has the advantage in a handful of domains that are likely crucial in a potential future conflict with China. Given India's limited defense budget and pressing strategic demands, the most cost-effective investments are likely in offensive countermeasures to these systems. India should therefore attempt to avoid dependence on defensive systems in these areas, and instead seek to use offensive weapons to negate Chinese systems. A simple example makes this point clearly. China depends on space systems for command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) and position, navigation, and timing (PNT) in the Indian Ocean, but it also possesses a robust suite of counterspace weapons. If India invests in space-based C4ISR and PNT, China will use its counterspace capabilities to

attack these systems and retain its advantage in space. In this scenario, India would make a huge investment and, in the event of a war, end up right back where it started. If, however, India invests in jamming, dazzling, blinding, cyber, and kinetic anti-satellite weapons, it could degrade or destroy China's space capabilities in the Indian Ocean region and level the playing field. In a world without space, the side with access to superior land-based ISR aircraft likely has the advantage.

- **Seek partnerships in areas of vulnerability that force China to escalate unfavorably.** While India should avoid dependence on space, it will likely require access to space-based systems for maritime domain awareness and PNT. Wherever possible, India should leverage international partnerships and commercial satellites for these services. This approach is counter to India's traditional desire for strategic autonomy and indigenous production, and it also carries the slight, but real, risk that partners may put limits on the use of these systems in crisis or conflict. The benefits, however, could be substantial. India could gain access to advanced C4ISR and PNT capabilities, while presenting China with a strategic dilemma. In the event of a crisis or conflict, China would want to disrupt, degrade, disable, or destroy these systems to deny India from using them. However, such attacks would be an act of aggression against a large number of space-faring nations, such as the United States, Japan, Australia, South Korea, France, Great Britain, etc. It would also be an aggressive act against foreign-owned commercial entities. China will have to choose between allowing India to maintain access to space or potentially radically expanding a conflict they would presumably want to keep limited. Creating this sort of dilemma is likely worth the loss of autonomy for India.
- **Increase and accelerate investments in maritime domain awareness and targeting.** India should take a page out of China's playbook for defeating a superior maritime power (the United States): it should invest heavily in long-range maritime domain awareness and targeting. In the precision-strike regime, advantage accrues to the side that attacks effectively first—not the side with the larger navy or air force. India should double down on its investments in maritime domain awareness and targeting, while making concomitant investments to ensure the effectiveness of these systems during combat. India's P-8Is are capable maritime domain awareness platforms, but they are vulnerable to air interdiction, so investments in advanced electronic countermeasures and long-range fighter escorts would be prudent. Additionally, India should seek to shorten, simplify, and strengthen its "sensor-to-shooter" loop to the greatest extent possible. Giving the Poseidons the ability to fire anti-ship cruise missiles is one method; giving them jam-resistant tactical datalinks to pass targeting information to strike aircraft, surface vessels, and submarines is another.
- **Increase and accelerate investments in supersonic and hypersonic anti-ship missiles such as the BrahMos and long-range follow-on systems.** Striking effectively first requires sensing and firing first, but it also requires precision-guided munitions with the range and speed to strike an adversary target before they can fire effectively. In the BrahMos, India possesses a highly effective, medium-range supersonic cruise missile. Unfortunately, China possesses cruise missiles with greater range and similar speeds, and China's anti-ship ballistic missiles have much longer ranges and speeds.¹¹ Given the relatively shorter ranges of the Indian Ocean compared with the

¹¹ There are currently efforts underway, however, to extend the range of the BrahMos. This is a step in the right direction. See Dmitry Fediushko and Rahul Bedi, "India and Russia Seeking to Extend Range of BrahMos Missile to 500km," *Jane's Defense Weekly*, April 11, 2019. India is also indigenously developing a longer-range cruise missile, the Nirbhay, but the latter is sub-sonic. See M. Somasekhar, "Long-range Sub-sonic Cruise Missile Nirbhay Successfully Test-Fired," *The Hindu Business Line*, April 15, 2019,

Pacific, India may not need anti-ship ballistic missiles, but longer-range supersonic and potentially hypersonic cruise missiles could allow Indian missile shooters to attack Chinese targets before they themselves can be targeted, thus helping offset India's numerical disadvantage in platforms. These trends suggest that India should accelerate and increase its investments in extending the range of the BrahMos and developing the longer-range Nirbhay cruise missile.

- **Acquire more undersea systems—and particularly air-independent diesel-electric attack submarines—relative to surface vessels.** There has been ample historical evidence since at least World War I that submarines can allow a weaker naval power to thwart even a dominant naval opponent. And yet few navies have pursued undersea warfare as a primary strategy.¹² India's prioritization of surface vessels over submarines is therefore in-line with historical norms. Partly, this decision stems from the divergent uses of submarines and surface vessels. Submarines are excellent weapons to support a defensive strategy of sea denial, whereas surface vessels can support an offensive strategy of sea control. Surface vessels also serve important peacetime and crisis functions as overt signals of capability and intent in ways that submarines cannot.

While India's preference for surface vessels over submarines may be supported by historical norms, it remains illogical in the face of Chinese naval superiority. A larger undersea fleet could allow India to impose considerable costs on the PLAN and potentially deny it from gaining maritime superiority in the Indian Ocean. The primary question for India is whether to invest in nuclear or diesel-electric attack submarines. Currently, India plans to invest in both. This is a reasonable investment strategy since each type has its advantages. Nuclear submarines have greater range, endurance, speed, and often greater payload. Diesel-electric submarines are much more affordable to own and operate. India appears committed to possessing a small fleet of nuclear submarines and, while these boats provide certain capabilities that diesels do not, it is doubtful that India's nuclear submarine fleet will have the size and operational reach to make the investment worthwhile—the nuclear boats are more likely to be a prestige investment. Diesel-electric boats have operational limitations in speed and endurance, but these can be offset by keeping them on patrol in forward locations. Moreover, these boats can be procured and operated at much lower cost compared to nuclear boats, which should enable India to build a larger, more effective undersea fleet. As unmanned undersea vessel technology matures, India should augment its manned undersea fleet with these systems. However, given the state of this technology, India may want to wait for first movers like the United States to iron out the kinks.

India's Navy will likely attempt to keep aircraft carriers as the centerpiece of its fleet. However, the challenges posed by China should engender a shift toward a more undersea- and air-centric combat force. Given the demands of the proposed strategy outlined here, India would need at least three, possibly six SSNs (given a generous 2:1 dwell-deploy ratio, which would result in one or two boats forward at all times) and 12 to 18 SSKs (using the same ratio, this number provides 4 to 6 forward at all times). India's Cabinet Committee on Security has approved a force of 24 SSKs, which should be sufficient to prevail in a conflict with Pakistan and deter extra-regional maritime powers such as China. The question is whether the Indian Navy will attain this force structure level any time soon due to delays in procurement and ship building. The Indian Navy

<https://www.thehindubusinessline.com/news/long-range-sub-sonic-cruise-missile-nirbhay-successfully-test-fired/article26842044.ece>.

¹² The Soviet Navy was arguably the only major navy in this period to prioritize submarines as the primary arm of the fleet. This likely reflected the Soviet Union's continentalist view of naval power as primarily defensive in nature.

commissioned its second *Kalvari/Scorpene*-class SSK on September 28th, at which point India will possess about 14 SSKs, although only 9 of these—the *Kalvaris* and the updated cruise-missile capable *Sindughosh/Kilos*—should be considered capable against China.¹³ Given projected budgets, continuing the build-out of the SSK fleet to 24 will likely require capping India's procurement of carriers at one or two. With a fleet of fewer than three carriers, the Indian Navy would be hard-pressed to ensure that more than one carrier would be operational at all times, and the combat power of one, short-takeoff, but arrested recovery (STOVAR) aircraft carrier would be severely limited in a conflict with China. The Indian Navy may therefore see greater strategic benefits from placing scarce assets in land-based aircraft, missiles, and submarines.

- **Shift the Indian Army away from massed territorial defense toward multi-domain operations comprising long-range fires, electronic warfare, cyberwarfare, anti-maritime, anti-air, engineering, and information operations.** India's armed forces could benefit from shifting some resources from the Army toward the Air Force and the Navy. Given that this is unlikely, India's Army should shift its overall strategic concept from massed, ground-based territorial defense toward multi-domain operations, which in this context is defined as conducting maneuver or fires across the land, air, sea, undersea, space, cyberspace, electromagnetic, and information domains. The idea behind this concept is to exploit the offensive dominance of certain domains to create strategic effects on an adversary or to deny or enable maneuver at the operational level. In an era of space-based sensors, sophisticated computer networks, and aggressive combat in the electromagnetic spectrum, fire and maneuver is no longer just a kinetic, physical affair that occurs on land. For example, multi-domain operations could use cyberattacks to disrupt mobilization for strategic effects, or to disable sensors and targeting networks to allow ground forces to maneuver at the operational level. To the greatest extent possible, these capabilities should be available and integrated at the lowest feasible echelon of command. The broader idea is to dissociate ground forces from the mission of ground maneuver and fires and to reorient them toward being forces that operate primarily from the land to impact every other domain.

This is a massive shift for any army, let alone the conservative Indian Army with its proud history and regimental tendencies. The Indian Army may therefore need to identify units to experiment with these concepts and serve as the task force spearheading their implementation in much the same way that the U.S. 4th Infantry Division helped introduce digital information technology to the U.S. Army in the 1990s and early 2000s.

- **Improve military transportation infrastructure, particularly from the Indo-Pakistan border to the northeastern border with China, and from the internal lowlands to the mountainous border region.** India has a numerical advantage over China in its border regions, but China can concentrate forces where and when it needs them much more quickly than India can, given China's superior transportation networks and logistics capabilities. For many years after 1962, India eschewed investments in transportation infrastructure in and around its border regions based on

¹³ See Rajat Pandit, "Second Deadly Scorpene Submarine to be Commissioned this Month After Some Delay," *The Times of India*, September 9, 2019, <https://timesofindia.indiatimes.com/india/second-deadly-scorpene-submarine-to-be-commissioned-this-month-after-some-delay/articleshow/71052612.cms>. On the subsurface dimension of Sino-Indian competition, see Iskander Rehman, "The Subsurface Dimension of Sino-Indian Maritime Rivalry," in *India and China at Sea: Competition for Naval Dominance in the Indian Ocean*, ed. David Brewster (New Delhi: Oxford University Press, 2018), Chapter 8.

the very real concern that these roads and railways could just as easily transport Chinese troops into India as they could shift Indian troops to the border.¹⁴ India has only recently abandoned this strategy, but the shift hasn't fully taken effect. An effective border-defense strategy will demand means of rapidly transporting forces to key locations at the border. To prevent Chinese forces from exploiting these roads and railways as invasion routes, India can pre-rig them for detonation and ensure that fires are pre-sighted to destroy chokepoints. Fully implementing a strategy of rapidly reinforcing to meet border incursions will also require methods, including training and technologies, to rapidly acclimate Indian troops to operating at high altitudes.

In addition to improving transportation links from the interior lowlands to the mountainous border, India should also improve its ability to swing forces between its eastern and western regions. The Indian Army could tolerate reductions in size if it were able to shift forces more quickly to meet threats from China or Pakistan. Such dual-use infrastructure investments would have positive impacts for India's economy as well.

- **Cultivate relationships with disaffected groups in Tibet and provide them with sanctuary, training, and, potentially, weapons.** Given the current military balance, Indian attempts to conduct conventional combined-arms maneuver into China will likely fail. And yet India cannot wholly cede offensive initiative—it must have means to threaten Chinese interest in ways that could cause China to back down or negotiate. Unconventional warfare in Tibet could be a relatively affordable method of achieving this coercive effect. The Chinese regime is paranoid about stability and population control in these regions in ways that may cause it to ascribe a disproportionate threat to Indian efforts in these areas. While this tendency carries the risk of escalation, it could also be a powerful means to impose costs on China. The obvious Chinese response would be to support similar disaffected minority groups and insurgencies in India. This is, however, an area where the resilience of India's democracy gives it an advantage. India has experienced insurgencies and separatist movements more or less continually since its independence. Today, these movements are local threats and national nuisances, but the Indian government and people by and large do not perceive them as threats to the viability of the Indian state and its government. China could therefore pursue a tit-for-tat strategy, but it would be unlikely to succeed.
- **Consolidate procurement—particularly in combat aircraft—to create greater economies of scale and efficiencies in operation.** Greater consolidation in procurement would benefit India's armed forces in myriad ways. First, it would increase India's buying power through economies of scale. Second, it would simplify sustainment and maintenance by limiting the number of spare parts and streamlining supply chains. Third, it would improve readiness at lower cost by simplifying and consolidating training.

Nowhere would this effect be more profound than in combat aircraft. India's aircraft fleet is a hodgepodge of older Soviet-era systems, more recent Russian and French systems, indigenous Indian aircraft, a handful of U.S. systems like the P-8I and the C-17, the joint Russian-Israeli Phalcon airborne warning and control system, and some Israeli UAVs for good measure. Given their particularly high cost of procurement, maintenance, and training, as well as historical failures,

¹⁴ See Iskander Rehman, "A Himalayan Challenge," 112.

India should begin its rationalization of procurement in tactical combat aircraft—namely multi-role fighters.

India's recent history of combat-aircraft development and procurement is worthy of its own discussion, but the short version is that India has failed to procure sufficient advanced (fourth-generation-plus) aircraft to meet the near-term requirements of its Air Force, let alone to compete with China. Consolidating near- to medium-term procurement on just two aircraft types would allow India to get more for its money. These two types should be a light multi-role fighter and an advanced fourth-generation-plus multi-role fighter. Should India retain its aircraft carriers, this more advanced fighter would ideally be capable of operating from India's extant STOBAR aircraft carriers.

Given India's limited budget and long procurement timelines, as well as the potential for massive improvements in unmanned systems and artificial intelligence over the next 10 to 20 years, India should consider skipping fifth-generation aircraft and waiting to see what technologies emerge in the next generation. Given the time it has taken India to procure fourth-generation aircraft, any decision today by India to procure fifth-generation aircraft is likely to be overcome by events before the aircraft are delivered. Moreover, in a predominantly defensive role, fourth-generation aircraft armed with advanced weapons and sensors are cost-effective solutions.

- **Shift the “Make in India” program away from large systems integration and toward developing centers of excellence and innovation in key areas of technology.** India's weapons procurement is complex and slow in no small part because of India's desire to indigenize production, as epitomized by the “Make in India” policy. This is a well-intentioned policy designed to develop India's ability to make products, including defense systems, indigenously while also creating jobs in India. Unfortunately, the requirement to shift production to India when possible has added additional complexity to India's already Byzantine procurement process. At the same time, India isn't gaining access to sufficient levels of advanced equipment, as states are reluctant to share their cutting-edge hardware.

While India aims to produce a wide range of systems, and particularly major platforms like fighter aircraft, it would likely be better off focusing its development in a handful of key areas with high payoffs and export markets, while exploiting others' investments to procure extant systems at low cost. Israel should serve as a possible example. Israel procures combat aircraft almost exclusively from the United States, but it has invested heavily in creating domestic sectors of excellence in unmanned aircraft, cyber warfare, short-range air and missile defenses, and vehicle protection systems among others.¹⁵ Israel also has a vibrant military technology startup sector that rapidly cross-pollinates tactical and operational demand signals with technology supply signals to create innovative solutions to difficult problems. Adopting this mindset instead of a bureaucratic, broad-

¹⁵ The India-Israel security relationship has become much closer over the past decade or so, and Israel is now considered to be one of India's closest defense partners. Indian strategists admire, and often seek to emulate Israeli counterterrorism, urban warfare, and counter-insurgency methods. There may be more lessons to be learned, however, in Israel's strategy for defense-industrial base (DIB) development. On the India-Israel security relationship, see Nicolas Blarel, “India-Israel at 25: Defense Ties,” (Middle East Institute, April 2017), <https://www.mei.edu/publications/india-israel-25-defense-ties>; and Shashank Joshi, “Is India's Israel Envy Misplaced?” *Livemint*, September 26, 2016, <https://www.livemint.com/Opinion/uyJOfREeXcteX07QEyp2ZM/Is-Indias-Israel-envy-misplaced.html>.

based technology transfer program would likely make India more competitive with China militarily and more competitive on the global defense market at the same time.

CONCLUSION

China's military rise and more aggressive foreign policy have threatened extant structures and challenged longstanding assumptions about military strategy and operations, both in the United States and India. The beauty of this challenge is in its clarity and strategic simplicity: it can be either a cause for anxiety and withdrawal or an opportunity to grapple with new problems and discard outdated ideas and hardware. Both India and the United States have too much at stake to see this as anything other than a chance to embrace long-needed, but oft-deferred, change. For India (and the United States in some areas), China's rise should be a clarion call for fundamental reform in how their armed forces are trained, organized, equipped, and commanded.

Even without fundamental reform, however, India's armed forces can still compete more effectively with China and pose Beijing with difficult strategic and operational dilemmas. The key for India is in embracing its asymmetric advantages and avoiding the temptation to develop advanced capabilities for which China already possesses effective countermeasures. While many defense thinkers have commented on how India can best advance U.S. interests in the Indo-Pacific by pushing China toward this or that investment path, this paper takes a different tack. It assumes that both India and the United States generally want the same thing: a free and open political and economic order in the Indo-Pacific and globally. The best thing India can do for the United States is to remain capable of countering Chinese coercion and, in the event of a crisis, deterring or defeating Chinese aggression on the LAC and in the Indian Ocean region.

This strategic end is within India's grasp. While fundamental defense reforms and larger budgets would help, this goal is feasible without them. The key is that India, much like the United States did with its recent *National Security Strategy* and *National Defense Strategy*, must admit that it has a China problem and take steps toward solving that problem.