



DEFENCE PRIMER

India at 75



Edited by
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Editors' Note

India's Defence Goals



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The threats India confronts today are much more diverse and complex than ever before. These threats range from nuclear-armed adversaries like China and Pakistan, to Maoists, and militancy and terrorism arising from within its borders and beyond. Effectively understanding these complex strategic and tactical environments to inform policy makers is the precursor to developing and maintaining a spectrum of capabilities in accordance with realistic threat perceptions.

The Modi government, since coming to power in May 2014, has generated great expectations of reforms in defence procurement and policy. The ambition to eventually transform India from the world's largest arms importer into a defence manufacturing hub under the 'Make in India' scheme is still in an incipient stage. The new Defence Procurement Procedure (DPP) was announced in January but is yet to be notified. Private industry's response to VK Aatre panel's recommendations on 'strategic partnerships in defence manufacturing' has been tepid. Lack of clarity on the new procurement procedures, including the offsets, and continued bureaucratic wrangling on existing contracts, has dampened the enthusiasm of the foreign defence suppliers.

India's military doctrines and force modernisation -- hampered by slow pace of defence acquisitions -- hinder its ambitions to shape its security environment as an emergent power. The three defence services continue to operate in silos, and thus show little sign of shifting from number-based calculations to effect-based warfare dependent on technology. The Army is already 13.5 lakh strong and adding more on to its rolls. The IAF has insisted that it needs the Rafales to shore up its depleting fleet. It has projected a need for 45 fighter aircraft squadrons to be ready to tackle a two-front threat. The Navy hopes to be a 200 vessel navy, with three aircraft carriers and nuclear submarines, in the near future.

It is time that Indian defence forces start planning for interoperable and integrated war fighting capabilities, which not only increases its war fighting ability but also improve affordability by reducing acquisition, operating, integration and training costs.

These ambitions drive the requirements of the three services for weapons, equipment and platform. The requirements are justified by a threat perception which stems from a rather sketchy operational Defence Ministry directive that talks of a collusive two-front threat. Unlike other major powers, no white papers or discussion papers are issued by the government or its affiliated think-tanks to discuss future scenarios and threat perceptions. The defence services will have to start deliberating over developing and maintaining a spectrum of capabilities in accordance with realistic threat perceptions. Instead of a wish-list of individual services, the requirement of defence equipment will have to flow from that realistic design of India's national security plans.

The wish-list model of equipment procurement also suffers from a lack of recognition of government's financial constraints by India's military brass. The planning yardstick of a defence budget of 3 per cent of India's GDP, with an annual GDP growth rate of 9 per cent has created a huge mismatch between aspirations and realities. The government barely allots 1.7 per cent of its GDP to defence and India is growing in the range of 7 per cent which means that the defence services need to cut the cloth according to size.

The current economic climate and given the government's spending capabilities, the armed forces need to comprehensively review the performance of the systems it wants to acquire and its potential trade-offs, rather than accessing each technical requirement or performance need in isolation. It is time that Indian defence forces start planning for interoperable and integrated war fighting capabilities, which not only increases its war fighting ability but also improve affordability by reducing acquisition, operating, integration and training costs.

This will necessitate a change in mindset at the level of our political and military leadership. The fundamental problem in defence reforms lies in our military thinking and the solution provided by our military leadership in meeting our national security goals. Whatever the threat perception, the solution has almost always been to seek an increase in manpower and equipment. The focus instead needs to shift to mechanisation and informationalisation of forces, as well the recruitment of more qualified personnel capable of operating technology-intensive equipment.

The political approval to create the Mountain Strike Corps with 90,274 soldiers, a few years ago, is a prime example of seeking solutions in greater numbers. The lack of infrastructure on the border with China precludes lateral or forward movement of the troops along the borders. Our forces need to be pre-positioned to meet any threat perception along the borders, which results in a manpower intensive effort that has debilitating cost implications on our defence budget. All this happens in an isolated environment where India's naval strength or the strategic

weapons and their delivery systems are not considered by the army while formulating its plans.

India needs a real integration of the three defence services, and they need to be in sync with the defence ministry and the political leadership. Various expert committees have suggested plans to create the post of a Chief of Defence Staff or a Permanent Chairman of Chiefs of Staff Committee but to little avail. Even if this position were to materialise, it would still need integrated theatre commands for the three services to be interoperable in a functional manner. Critical assets like intelligence and special forces will then be available for optimal utilisation by the three services. A real integration of the three services would also provide greater impetus to the various defence diplomacy initiatives being undertaken by the government, and facilitate India's ambitions for Out of Area operations in the neighbourhood.

While each of India's challenges has diplomatic, political, socio-economic and informational dimensions, their security aspect remains the most crucial one. The aim of this Defence Primer is to establish India's defence goals and the strategies needed to achieve them as India moves towards the 75th year of its independence in 2022. Where does India stand today? What should India's national security goals be in 2022? If we map out the trajectory of India's current path of defence modernisation, where will we be in 2022? How do we bridge this gap between the desired state and the actual condition?

This Primer has thirteen essays, ranging from a broad overview of India's strategic environment and overview, military diplomacy and the future of structures that the three services need to focus on. The tone for the primer is set by Shashank Joshi who explains the divergent demands on Indian defence posture, at a time when India's leaders are increasingly embracing the prospect of new security responsibilities farther from Indian soil. Arka Biswas argues the Government's decision to not introduce any changes in India's nuclear doctrine makes it important to go back to basics and identify the purpose which India's nuclear doctrine was designed to serve. Dhruva Jaishankar emphasises that India's military diplomacy represents something of an opportunity for India to present itself as a responsible stakeholder, net security provider, and benign military power.

Amit Cowshish makes a case for the need to reform existing structures and procedures to ensure that the defence plans comprehensively encompass the armed forces as well as other organizations and departments and are based on realistic financial assumptions. Anit Mukherjee explains India's reluctance for appointing a joint Chief of Defence Staff and suggests the need to adopt geographically delineated joint commands for integrated joint operations. Ajai Shukla, Abhijit Singh, & Abhijit Iyer-Mitra & Angad Singh respectively

Our forces need to be pre-positioned to meet any threat perception along the borders, which results in a manpower intensive effort that has debilitating cost implications on our defence budget.

write about the need to transform a relatively low-tech, manpower-intensive army, navy and air force into *technology intensive services capable of* effective inter-services and multilateral networked operations.

Vidisha Mishra covers India's formerly impenetrable combat exclusion policy for women followed by Dinakar Peri on infrastructure development and its importance in military preparedness. Arun Sukumar & Col. RK Sharma make recommendations on India's proposed National Cyber Security Agency and cyber security architecture. Ritika Passi discusses India's contribution to United Nations peacekeeping missions in the years leading up to 2022 given a status quo environment and the possibilities that exist for India to inject fresh momentum in its participation that take into account national security interests.

The concluding chapter by Arzan Tarapore outlines India's preference for force-centric ways of fighting, and the entrenched reasons for that preference. He argues that India's military institutional structures and culture make other ways of fighting both less likely and less effective. India will not realise its ambitions as a great power while it has so few viable and effective options for the use of force.

As the Indian republic turns 75 and as India's engagement with the world expands, we hope this Defence Primer will help shape New Delhi's roadmap for the future.

India's Strategic Environment & Adversaries



SHASHANK JOSHI

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The Backdrop

India's strategic environment is turbulent. China's rise has supported a decade of sustained growth in Asia, but has also placed unprecedented stress on the security order. China's One Belt One Road (OBOR) initiative for westward connectivity is potentially transformative, but likely to worsen those pressures. The American pivot to Asia is in its nascent stages, but Asia's hub-and-spokes alliance system is evolving as middle powers question Washington's commitment, grow more active, and forge deeper ties with one another. India fits this trend of internal and external balancing against China, moving steadily closer to the United States and Japan and so deeper into the security system of maritime Asia. In contrast to these slow-moving processes, an emerging power vacuum in Afghanistan could threaten Indian power and security much sooner. The space from the Mediterranean to the Arabian Sea is undergoing even more rapid state breakdown, with Saudi Arabia and Iran competing in the interstices.

India, then, is uniquely situated between state-centric great power competition to the east and state-fragmentation to the west. Each places divergent demands on Indian defence posture, at a time when India's leaders are increasingly embracing the prospect of new security responsibilities farther from Indian soil. Yet India faces these challenges with more partners and suitors than ever before, with its domestic security environment the calmest in decades, and from a position of economic strength.

Pakistan

Pakistan remains a familiar adversary. Cross-border violence in Jammu and Kashmir has declined substantially since 2003. However, Pakistan continues to shelter, sponsor, and in some cases direct a range of armed non-state groups who seek to conduct terrorist attacks on Indian soil and against Indian interests abroad. The largest and most threatening of these groups is Lashkar-e-Taiba, but others include Al Qaida-allied Jaish-e-Mohammed, which re-emerged in January 2016 after a period of dormancy, and the Taliban-allied Haqqani Network. Pakistan has tactically restrained these groups, typically in line with Western pressure, but they remain entrenched. Separately, the Pakistan-based Al Qaida in the Indian Subcontinent (AQIS) may draw support from these groups and presents a threat to India and other South Asian states.

Jihadist violence in has steadily declined since its peak in 2009, reaching its lowest level in almost a decade. If sustained, this could allow a larger concentration of forces on Pakistan's eastern border. Pakistan's army has consolidated its power over the civilian government, buoyed by the relative success of Operation Zarb-e-Azbin the northwest. Pakistan's diplomatic position is also strong. It has preserved a balanced posture between its patron Saudi Arabia and neighbour Iran, stands to benefit greatly from the \$46 billion China-Pakistan Economic Corridor which passes through Pakistan-controlled Kashmir, has played a central role in talks over the future of Afghanistan, and plans to hold its first-ever drills with Russia – a traditional defence partner of India – in 2016.

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Pakistan's conventional armed forces represent one of two conventional military threats to India. Despite a renewal of hostile rhetoric on Kashmir by Pakistan Army chief Raheel Sharif, a Kargil-like surprise attack is unlikely. War is likeliest to arise as a result of a terrorist attack. But recent research has emphasised that India has little conventional advantage over Pakistan in short land wars, owing to a combination of defense-dominant terrain, a lack of strategic surprise, and slower mobilisation times. The ratio of Indian to Pakistan fourth-generation combat aircraft has nearly halved since the turn of the millennium.¹ Finally, Pakistan's nuclear weapons place fundamental limits on the scope of Indian military gains with (built not yet deployed) tactical nuclear weapons potentially complicating India's nuclear doctrine of massive retaliation.

Afghanistan and Central Asia

Over a decade of US-led war in Afghanistan has failed to defeat the Taliban, eliminate Al Qaida, or create an effective state. As foreign troops have drawn down the Taliban have made large territorial gains, Afghan security forces have suffered unsustainable losses, political divisions have widened, and Islamic State are establishing a presence. The Afghan government's outreach to Pakistan over 2014-15 has been divisive and yielded nothing, but the US and China both continue to encourage Pakistan to deliver the Taliban to the negotiating table.

While all regional powers have expressed rhetorical support for the Afghan government, their responses and interests differ in important ways. Russia has been paid by third countries including India to provide arms to Kabul, but its priority is on preventing contagion into Central Asia and would likely adopt a pragmatic approach to any settlement that reduced violence. Iran has maintained good ties with Kabul, but hedged its bets by simultaneously arming, training, and supporting particular Taliban factions.² This suggests its attitude to peace talks is likelier to be shaped by the specific participants rather than blanket opposition to the Taliban's empowerment.

In this context, India is somewhat isolated. It has viewed peace talks with greater concern than any of these powers, in part because any settlement that empowered Pakistan-backed Taliban factions could disproportionately hit Indian interests. This could include the closure of Indian consulates, an end to India's training of Afghan military officers, and curtailment of valuable

intelligence cooperation between Indian and Afghan intelligence agencies – not to mention more threatening possibilities still, similar to the hijacking of IC-814 in 1999. However, India would also face serious problems if the conflict continued unabated, especially if Western financial support to Kabul were to dwindle and India's anti-Taliban partners from the 1990s, Iran and Russia, were to align with China and Pakistan in favour of an imperfect settlement. India has only a limited ability to launch a sustained, effective, and independent challenge to such an outcome.

These changes in Afghanistan should also be seen in the wider context of Central Asia. The space from the Caspian Sea to Xinjiang is where China's expanding sphere of influence runs into that of Russia. India may depend on Central Asia – specifically, Tajikistan – to project power into Afghanistan in the future, but its own access to the region depends on good relations with Iran and Russia, and stability in Afghanistan. Yet Tehran and Moscow are experiencing warmer ties with Islamabad, while Afghan security is deteriorating.

China

China presents a large, long-term, and multifaceted challenge to India: on the disputed border in the east and west, on India's land and maritime periphery, to the survivability of India's nuclear weapons, and throughout the Indo-Pacific. In the past decade, China has grown from being three times the size of India to over five times as large. President Xi Jinping has consolidated political and military power since 2013. However in 2015 China faced its lowest growth rate in a quarter-century (6.9%) and other long-term challenges, such as dysfunctional capital markets, an ageing population, and a lack of close partners to its east (North Korea being more a liability than asset).

China's presence and influence in India's traditional spheres of influence has grown at the expense of India, although this process is uneven and reversible. It is most durable in Pakistan: China is crucial to Islamabad's military modernisation, notably combat aircraft, and fissile material production. China's OBOR initiative – a vast network of Chinese-funded land and maritime infrastructure stretching from Asia to Europe, intended to stimulate China's western and southern provinces – could stimulate growth and benefit India. But parts of the infrastructure (such as Gwadar port) might have future military utility, while the lure of Chinese capital is likely to increase Beijing's regional influence. India's Act East policy in some ways mirrors China's effort on India's periphery. But India has greater constraints. India's partners in East and Southeast Asia are richer and less politically pliable than China's in South Asia, while India's resources are fewer. Between 2011 and 2015, China's arms exports grew by 88 percent, with over two-thirds going to Pakistan, Bangladesh, and Myanmar.

The military imbalance on the Sino-Indian border has eased over the past decade with India's concerted effort to improve transport links, reactivate airstrips, and raise new mountain infantry units. China intends to unify the two military regions responsible for India (Chengdu and Lanzhou) into a new 'West' zone that will stretch from Central Asia to the Korean Peninsula and contain a third of land forces, but it is unclear how this affects India.

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India will also be affected by Chinese efforts to extend the reach of its naval forces. These include the construction of a second aircraft carrier, submarine modernisation, and increasing naval activity in the Indian Ocean (including the planned construction of a proto-base in Djibouti).³ The geographic position of India's Andaman and Nicobar Islands is both a vulnerability and an opportunity. Finally, Chinese nuclear forces are modest in size and defensive in configuration. But advances in American missile defence and long-range precision-strike conventional missiles could stimulate a change in Chinese warheads numbers and postures that would affect the survivability of India's own arsenal.⁴ Over the longer-term, changes in India's nuclear posture or doctrine might in turn affect Chinese behaviour.

The United States

Despite military setbacks and the perception of retrenchment, the United States exerts a profound influence on India's strategic environment. It can empower or constrain Pakistan, reinforce or abandon the Afghan government, confront or accommodate Chinese power, and transfer or withhold advanced military technology to India. Despite a lull during UPA-II, the US-India relationship has continued to deepen, notably evident during 2014-15 in the two sides' shared language around Chinese behaviour in the South China Sea. The US-India relationship also reinforces India's independent relationships with US allies and "middle powers" like Japan and Australia, as evidenced by Japan's permanent accession to the previously bilateral Malabar naval exercises. This synergy is reflected in the truly far-reaching US-India Joint Strategic Vision for the Asia-Pacific and Indian Ocean Region of January 2015.

The US continues to engage Pakistan in ways that adversely impinge on India. This includes the sale of F-16 fighter jets, suggestions (disavowed) of a civil nuclear deal, and encouragement of Chinese efforts to broker Afghanistan-Pakistan and Afghanistan-Taliban talks in Pakistan. The US budgeted \$860 million in financial assistance to Islamabad for 2016-17, merely a 0.2 per cent decrease from 2013-14, noting that Pakistan "lies at the heart of the US counter-terrorism strategy, the peace process in Afghanistan, nuclear non-proliferation efforts, and economic integration in South and Central Asia".

However, the broad trend points to a continued US tilt towards India and away from Pakistan. US arms sales to India have exceeded those to Pakistan since 2013. In 2014-15, Pakistan-sponsored terrorist groups like LeT and JeM were included in the US-India joint statement for the first time. And in 2015, Washington withheld a third of payments to Islamabad on the grounds that Pakistan had not taken action against the Haqqani Network. Although the US and India remain divided on a number of regional and global issues, ranging from the Syrian civil war to global trade talks, the bipartisan US political consensus on supporting and accelerating India's rise is likely to hold.

South Asia's Smaller Powers

As a large power surrounded by smaller ones, India has long faced the traditional dilemma of losing influence, worsening threats, and provoking third-country involvement through an excess of either strength or weakness.

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India's controversial effort to coerce Nepali elites in 2015 through diplomatic pressure and economic blockade, and Kathmandu's ensuing efforts to court Beijing, was the latest illustration of this process. Successive Indian governments have sought to strike the right balance, most recently by stressing regional economic integration, presently abysmally low, and opting for lower-profile, often intelligence-driven interventions as in Sri Lanka in early 2014. The region remains characterised by low state capacity, porous borders, and zero-sum politics that can result in countries veering between alignment with and estrangement from India as different factions assume power.

The steady growth of Chinese influence, though not without reversals and setbacks, has a number of consequences. China's presence close to Indian borders, whether naval port calls or listening posts, is one concern; but it is not the only one. India is also exposed to illicit cross-border flows, including weaponry, narcotics, and radical non-state groups. India benefits from and sometimes relies on cooperation with neighbours to tackle these threats, as a June 2015 special forces raid into Myanmar demonstrated. Other threats, such as a surge in radical Islamist activity in the Maldives in recent years, require access for intelligence. Many factors – including Indian behaviour, local elites' attitudes, and the Sino-Indian balance of influence – impinges on New Delhi's ability to manage these challenges. India increasingly sees itself as a net security provider for smaller Indian Ocean island states; this enhanced role presumably secures greater Indian influence, as reflected in an unfolding series of coastal surveillance radars in the Seychelles, Maldives, Mauritius and Sri Lanka.

West Asia

The risk factors manifest within South Asia – weak states, permeable borders, powerful non-state actors – occur in extreme form in large parts of the Arab world, exacerbated by the invasion of Iraq in 2003 and uprisings in Arab states from 2011 onwards. Great powers and their allies – the US, Russia, Saudi Arabia, Turkey, and Iran – compete for influence in new power vacuums, as the US-led security architecture forged in the 1980s buckles under these new conditions. Russia has returned to the Middle East in force, transforming the military balance in Syria and deepening ties with Iraq, Jordan, and Egypt.

The Joint Comprehensive Plan of Action (JCPOA), a nuclear deal agreed between Iran and six other powers, has greatly lowered the risk of Iran acquiring nuclear weapons. It has also made it easier for India to deepen its ties with Iran, albeit when Iran's economic attention is directed to Europe and security attention to Iraq and Syria. But in strengthening Iran's finances and enabling US-Iran dialogue, JCPOA has also sharpened Arab fears and fuelled Saudi-Iran competition. Saudi Arabia continues to spend several times more than Iran on defence, but Iran's military expenditure rose by 29 per cent in 2015 and several Iran-Russia deals – for air defence systems and combat aircraft – are likely to further narrow the gap.

In this environment, the threats to India are diffuse, but growing. Some are direct. Consider the hurried evacuation of Indian nationals from Libya in 2011, the loss of Syrian oil fields in 2013, and the mass abduction of Indian

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workers by Islamic State in Mosul in 2011. Others are indirect, such as Islamic State recruitment and propaganda within India (which remains limited), or the broader economic impact of oil price volatility. West Asia is also connected to South Asia in important ways, with Iran as a bridge. Iran's Chabahar and Pakistan's Gwadar ports, developed by India and China respectively, are less than 200km apart in the Arabian Sea. India has successfully balanced its relationships with the antagonistic trio of Israel, Iran, and the Arab states – but deepening Indian involvement in West Asia would strain this balanced posture.

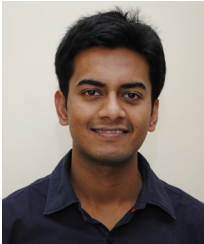
The Broader Strategic Environment

This survey should not be taken to mean that Africa, Europe, or Latin America are unimportant to India. But in the context of defence preparedness, India's strategic environment is most powerfully shaped by South Asia, Asia-Pacific, and West Asia. These regions present radically different challenges, with fragmentation to the west and great power competition to the east, but common to both is that older US-led security architectures are under strain from a changing balance of power and changing threats. Seapower will be crucial in both directions, but much more so to the east, indicating greater long-term resource allocations to the Indian Navy. India's ability to shape outcomes in these places will depend on how deeply it wishes to become involved. For now, particularly in maritime Asia, it has secured influence without intervention largely as an expanding force-in-being. The extent of India's future influence will be shaped by continued economic growth, economic and military reforms, Indian signalling around foreign and security policy, and potentially social and political stability at home.

More broadly, India also faces an environment in which the "global commons" – air, sea, space, and other domains like cyberspace – are perceived to be under stress, weakening the liberal international order on which India depends for stability and trade. Pessimists point to, inter alia, China's militarisation of reclaimed islands in the crucial sea-lanes of the South China Sea, the development of anti-satellite weaponry and problem of space debris, competition in resource-rich Arctic waters as the Northwest Passage opens up, and the intensification of cyber-espionage from India's partners and adversaries. As the world becomes more networked, these domains are as much part of India's strategic environment – and therefore considerations for defence policy – as traditional geographic zones.

- 1 Walter C. Ladwig, "Indian Military Modernization and Conventional Deterrence in South Asia," *Journal of Strategic Studies* 38, no. 4 (May 11, 2015): 26, 38–39.
- 2 Margherita Stancati, "Iran Backs Taliban With Cash and Arms," *Wall Street Journal*, June 11, 2015, sec. World, <http://www.wsj.com/articles/iran-backs-taliban-with-cash-and-arms-1434065528>.
- 3 Ronald O'Rourke, "China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress" (Washington, D.C.: Congressional Research Service, December 21, 2015), <https://www.fas.org/srgp/crs/row/RL33153.pdf>.
- 4 Fiona S. Cunningham and M. Taylor Fravel, "Assuring Assured Retaliation: China's Nuclear Posture and U.S.-China Strategic Stability," *International Security* 40, no. 2 (October 1, 2015): 7–50.

Indian Nuclear Doctrines in Peace and War



ARKA BISWAS

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Debate on revision of Indian nuclear doctrine has been going on for some years now, both at the political level as well as within the strategic community. The strategic community has been particularly active in this front with critical questions being raised over various elements of the current Indian nuclear doctrine, including the no-first-use (NFU) policy and the strategy of massive retaliation. The NFU policy has been argued by critics to be a normative policy which fails to serve the national interest of India.¹ While it may make sense to adopt such a policy when one is conventionally superior to its adversary, the policy limits the defensive utility of the nuclear arsenal against a conventionally stronger enemy. Perhaps in 1999 and 2003 when the Draft Report of National Security Advisory Board on Indian Nuclear Doctrine² and the press release by the Cabinet Committee on security reviews progress in operationalizing India's nuclear doctrine³ were respectively made public, India did not feel conventionally inferior to China, if not superior. Much, however, has changed over the decade thereafter and China has amassed a military might that has significantly widened the gap in conventional military strength vis-à-vis India. The question on the utility of NFU in the Indian nuclear doctrine is therefore of great importance and must be addressed.

Similarly, the strategy of massive retaliation against any scale of nuclear first use has received severe criticism as it has been argued to not be a credible deterrent posture, especially against the backdrop of Pakistan introducing tactical nuclear weapons (TNWs).⁴ This is essentially because a massive nuclear retaliation from India against a tactical use of nuclear weapon by Pakistan in a conventional battle would not only be inhumane, but also irrational considering that it would invite a similar retaliation from Pakistan.

While the strategic community has been engaging on these intense debates, nothing much has happened at the political level – without which, it is unlikely that there will be any changes introduced in the Indian nuclear doctrine. The Bhartiya Janata Party's manifesto for the 2014 Lok Sabha elections captured much attention when it spoke of the revision of the India's nuclear doctrine. However, the Government has decided to not introduce any changes in the doctrine so far. Important to note here is that a revision of nuclear doctrine need not necessarily result in changes and thus the current Government cannot be blamed for going back from its promise made in its election manifesto. Revision is an exercise where basics such as the purpose of nuclear doctrine and evolution of the threats that the doctrine is required to address is assessed. The Government's decision to not introduce any changes in India's nuclear doctrine makes it important to go back to basics and identify the purpose which India's nuclear doctrine was designed to serve.

The Government's decision to not introduce any changes in India's nuclear doctrine makes it important to go back to basics and identify the purpose which India's nuclear doctrine was designed to serve.

Assessing the evolution of India's nuclear doctrine, Ashley Tellis notes that the sole purpose that policy-makers in New Delhi associate nuclear weapons with is deterrence and not defence.⁵ Critics, as mentioned earlier, however, point to the situation when deterrence fails and thus suggest ways to look at nuclear weapons as tools for defence. Glenn Snyder captures this problem in his book *Deterrence and Defense*, where he notes that "one reason why the periodic "great debates" about national security policy have been so inconclusive is that the participants often argue from different premises – one side from the point of view of deterrence and the other side from the point of view of defense."⁶ Arguing that deterrence and defence are two different objectives which require different types of military forces in differing proportions, Snyder goes on to assess how different nuclear postures and deployments are required to meet the two mentioned objectives.

This essay uses Snyder's assessment on the difference between the objectives of deterrence and defence as the framework to assess India's nuclear doctrine. The essay identifies India's declared nuclear doctrine as a peacetime doctrine by assessing two of its prominent elements - the strategy of massive retaliation and the NFU policy. It then goes on to test the validity of aforementioned elements of the currently declared nuclear doctrine of India in wartime, especially against the backdrop of introduction of tactical nuclear weapons by Pakistan and China's rapid military modernisation, and argues that there is a need to have separate doctrine laying out nuclear redlines, postures and deployments during war.

The Purpose: Deterrence or Defence?

Glenn Snyder, while assessing the US national security policy, argues that the concepts of deterrence and defence are different and thus different combinations of military forces are required to meet these objectives. He defines deterrence as the concept of "discouraging the enemy from taking military action by posing for him a prospect of cost and risk outweighing his prospective gain," and defence as the concept of "reducing [one's] own prospective costs and risks in the event that deterrence fails. Snyder leads to the conclusion that deterrence is essentially a peacetime objective, while defence is a wartime necessity. Considering solely the nuclear assets of a country, the purpose of nuclear weapons in peacetime can be argued to be deterrence and that in wartime, when deterrence has failed, to be defence. Nuclear doctrine that encapsulates a country's, and its political or military leadership's, view on the purpose of nuclear weapons must therefore have two versions – one that caters to the requirements of deterrence in peacetime and that of defence in wartime.

This theoretical framework is useful in assessing India's nuclear doctrine. The two documents declared by the Indian government - Draft Report of National Security Advisory Board on Indian Nuclear Doctrine of 1999 and the subsequent press release by the Cabinet Committee on security reviews progress in operationalizing India's nuclear doctrine of 2003, essentially reflect a peacetime nuclear doctrine with the sole emphasis on the deterrence value of nuclear weapons.

There are underlying reasons behind India's emphasis on nuclear weapons as tools of deterrence and not defence and Ashley Tellis identifies three of them. First reason is rooted in the "strands of idealist and liberal thought that defined the country's political culture in its formative years." As Tellis argues, India for over half a century has consistently "refused to invest nuclear weapons with any axiological legitimacy." Even right before it crossed the nuclear rubicon, "India argued that the threat of inflicting mass destruction to control state behaviour was invariably an abhorrent doctrine." It is probably also the reason why India's declared doctrine, uniquely, refers to its commitment to nuclear disarmament. The second reason which Tellis notes is the organisation of political-military relation in India that gives the political leadership complete authority in determining the purpose of nuclear weapons. Given the political leaderships view of nuclear weapons as political tools for deterrence, the possibility of these weapons being seen as tools of war remains significantly low. The third reason is that by reducing the purpose of nuclear weapons to just deterrence, India avoids getting engulfed in the task of building a vast nuclear inventory and simultaneously establishing an elaborate and complicated command and control system.

These reasons may explain why New Delhi sees nuclear weapons just as political tools for deterrence. It is, however, the presence of concepts such as the strategy of massive retaliation and the NFU policy that render the current Indian nuclear doctrine solely a peacetime doctrine that focuses on deterrence and not a wartime doctrine that addresses the defensive requirements in war. For instance, the assurance of massive nuclear retaliation against any scale of nuclear attack on India or its military by its adversary is arguably an attempt of imposing great costs on the adversary that outweighs the latter's prospective gains. Similarly, the NFU policy is arguably a peacetime assurance that reflects the responsible nature of the country in ensuring peace and stability. In wartime, however, different circumstances may challenge the validity of concepts of massive retaliation and NFU, simultaneously questioning the efficacy of the current Indian nuclear doctrine. The following section tests the validity of the strategy of massive retaliation and the NFU policy during wartime circumstances, against the backdrop of introduction of TNW by Pakistan and rapid military expansion and modernisation by China.

Efficacy of Indian Peacetime Doctrine in Wartime

While discussing the "massive retaliation" debate of 1954 in the US, Snyder noted that "the late Secretary of State Dulles and his supporters argued mainly that a capacity for massive retaliation would deter potential Communist mischief, but they tended to ignore the consequences should deterrence fail." In the Indian context, introduction of TNWs by Pakistan strongly challenges the efficacy of the strategy of massive retaliation during wartime.

Though India did not implement the Cold Start, New Delhi would have preferred to retain the option of conducting a low-scale conventional attack below Pakistan's strategic nuclear redlines on the table, especially in order to punish the latter for its sub-conventional war against the former. By introducing TNWs, Pakistan has lowered its nuclear threshold in a way that restricts the room for India to explore options of a low-scale conventional attack.

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Tests of short-range missile systems, such as Nasr and Abdali,⁷ rapid increase in the number of nuclear warheads, with estimates of 200 warheads by 2020,⁸ and a transition of nuclear policy from credible minimum deterrence to full spectrum deterrence,⁹ all indicate that Pakistan has already developed TNWs. While details of deployment remain publicly unavailable, considering the purpose with which TNWs are introduced and the requirement of pre-delegation of launch authority, the possibility of TNWs getting used in the event of a low-scale conventional war is real.

In the event of a conventional war, if nuclear deterrence was to fail and Pakistan was to use a TNW on, say, an Indian battalion in its territory, massive retaliation will not be the strategy that New Delhi is likely to put into use. This is firstly because massive retaliation from India, which in Indian context refers to targeting population and industrial centres in the form of city busting, would be highly inhumane. Secondly and importantly, it would also invite a nuclear retaliation from Pakistan of similar scale and nature which would be against India's interest. On the other hand, if India were not to respond with its nuclear weapons at all, then the credibility of India's peacetime nuclear doctrine in deterring an adversary would be severely damaged. Therefore, in wartime, should nuclear deterrence fail, India must have a nuclear retaliatory strategy that increases the cost for Pakistan to continue nuclear exchange and in effect cater to the objective of defence.¹⁰ As Snyder also argues, "we indirectly profit from defense capabilities in advance of war through our knowledge that if the enemy attack occurs we have the means of mitigating its consequences." Thus, reference, even if limited, to a nuclear retaliatory strategy that is viable for implementation in the event of a first use of nuclear weapon by Pakistan, simultaneously, increases the deterrence value of India's peacetime nuclear doctrine.

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With regard to the NFU policy is a peacetime assurance, whose validity would be questioned during wartime. Ashley Tellis, while examining India's emerging nuclear doctrine in 2001, noted that "unlike the United States during the Cold War, India does not suffer any conventional inferiority vis-à-vis either Pakistan or China." Tellis subsequently argued that "since [India] is therefore unlikely to be at the receiving end in a conventional conflict with either of these two states [China or Pakistan], it is spared the imperatives of thinking about nuclear weapons as usable instruments of warfighting which may have to be employed in extremis to stave off potential defeat on the battlefield." Thus, in 2003, when the Cabinet Committee issued the press release on security reviews progress in operationalizing India's nuclear doctrine, India *could perhaps afford* to have remained committed to the NFU policy both against Pakistan and China in wartime, given that it did not feel conventionally inferior to either of them.

However, over the past decade, China's rapid military advancements and modernisation has significantly increased the gap in the conventional military strength vis-a-vis India.¹¹ While China's defence spending is difficult to monitor with accuracy, the overall trend capture a double-digit percentage annual increase in defence spending in the last one decade. This has simultaneously resulted in tremendous increase China's warfighting capabilities. To further enhance its ability to operate near its border with India, Beijing has amassed

heavy military infrastructure, including roads and railway links near the three sectors of its unsettled border with India.¹² Simultaneously, the People's Liberation Army (PLA) Navy has been undergoing expansion with 86.67 percent and 85 percent increase in the numbers of submarines and destroyers, respectively from 1995 to 2014.¹³

Noting the trends, *ceteris paribus*, this gap is likely to increase by 2022. Given this gap, if China were to engage in a conventional war, say, over territorial dispute, Beijing would not be required to introduce nuclear weapons. In such circumstances, India is unlikely to remain committed to the NFU policy, while incurring heavy losses and even losing territory and New Delhi would inevitably have to bring in its nuclear weapons into the picture.

Therefore, in wartime, while against Pakistan, India may still remain committed to the NFU policy given its relative conventional superiority, against China, it is unlikely going to be the case. New Delhi therefore must consider a wartime scenario vis-a-vis China and define its nuclear red lines, which once crossed by Beijing, would result in renunciation of the NFU policy and a probable nuclear retaliation by the former.

Conclusion

To conclude, there appears to be a need for two separate nuclear doctrines for peacetime and wartime. What, however, remains unclear is the extent to which the publicly asserted understanding of nuclear weapons as only political tools for deterrence affects India's wartime nuclear postures and deployment.

Interestingly, in 1999, to a question on whether India will follow different peacetime and wartime deployment/postures, the then Foreign Minister of India, Jaswant Singh noted that "this would be a correct assessment."¹⁴ Thus, it could well be the case that while the declared Indian nuclear doctrine defines its nuclear redlines, posture and deployment for peacetime, New Delhi already has in place a doctrine that would define its nuclear redlines, posture and deployment in wartime. Recent developments, such as introduction of tactical nuclear weapons by Pakistan and rapid military modernisation and expansion by China render a different nuclear doctrine for wartime all the more important.

A wartime nuclear doctrine need not be declared and New Delhi is right in emphasising on its peacetime doctrine publicly. Reference to normative policy such as NFU and stressing the sole purpose of the nuclear weapons to be deterrence in its peacetime nuclear doctrine have played significant roles in strengthening India's image as a responsible nuclear power. As India continues to successfully pursue its integration with the global nuclear order, it would not make sense to renounce NFU or explicitly refer to the options of nuclear war fighting for defence in its peacetime doctrine.

Strategic experts debating India's nuclear doctrine must differentiate between the objectives of deterrence and defence and acknowledge that while the declared Indian nuclear doctrine is a peacetime document, New Delhi must

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have assessed its options for wartime and has prepared a document that defines nuclear redlines, postures and deployment once nuclear deterrence has failed.

At the same time, given that the disassociation of nuclear weapons with the objective of defence diminishes the deterrence value of its peacetime nuclear doctrine, as examined in this essay, limited reference to some of the nuclear options, which New Delhi would keep itself open to in wartime, in its declared peacetime nuclear doctrine, could be useful in increasing the deterrence value of its peacetime doctrine. This would simultaneously assure its people that New Delhi is open to the idea of using its nuclear assets for defence during wartime, once deterrence has failed. Critical, however, would be to identify the elements of wartime doctrine which could find mention in the peacetime doctrine without hurting India's image as a responsible nuclear weapon state.

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India's Military Diplomacy



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It is undeniable that the nature of military force in international affairs has changed in the seven decades since India's Independence. It has been almost 45 years since India fought a major conventional war, and events since – including the experience of India's counter-insurgency in Sri Lanka, its development of nuclear weapons, and changing commercial, political, and social relations between India and its neighbours – have further decreased the prospect of large-scale conflict. However, the structure and preparedness of the Indian armed forces has not fully adapted to these changing circumstances.

One development that has gone relatively unnoticed is the greater frequency and visibility – and consequently greater importance – of activities that can be considered military diplomacy. This is natural in peacetime, and in an international environment in which India has few true adversaries and many partners. Although there is no universal definition of what constitutes military diplomacy or defence diplomacy, it can be thought of as any military activity with an expressly diplomatic purpose; in other words, activities where the primary objective is to promote goodwill towards India in other countries.

India has leveraged military diplomacy in its external relations almost since Independence, by virtue of its inheriting a large, professional military force from the British Raj, by its size, and by its projection of itself as a leader of the post-colonial world. But the increasing demand and appeal of military diplomacy in recent years will require devoting considerably greater resources, manpower, and equipment towards several kinds of activities. These include foreign officer training and education, high-visibility military visits abroad, and humanitarian assistance and disaster relief (HADR) efforts outside India. More than resources, improved military diplomacy will require much closer cooperation between the services, between India's military and civilian leadership, and between the Ministry of Defence and Ministry of External Affairs.

What is Military Diplomacy?

There is no universally accepted definition of what constitutes military diplomacy or defence diplomacy. By its broadest definition, almost every externally-oriented military activity can be considered military diplomacy, as it would constitute an extension of international policy. Military force is, as the Prussian military theorist Carl von Clausewitz famously noted, “a true political instrument, a continuation of political intercourse, carried on with other means.”¹

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However, many military activities have more specific, or supplementary, functions, and are therefore not simply diplomatic. Most military operations that have ultimately diplomatic purposes – including coercive force, peace keeping operations, and evacuation and rescue operations – are meant to achieve specific tactical and operational objectives.² During official contacts between two or more countries' militaries, such as staff talks and military exercises, the purpose is often to improve interoperability and coordination, and not simply increase goodwill.³ And military assistance – including sales and technology transfers – contributes not just to interoperability and diplomacy, but can serve expressly commercial objectives.⁴

A narrower definition – military activities whose sole purpose is diplomatic – leaves a much more specific set of actions as items that constitute military diplomacy. These include (i) the education and training of foreign officers and cadets, (ii) military visits with significant public exposure (such as port calls by naval vessels or the military's participation in parades), and (iii) humanitarian assistance and disaster relief operations in foreign countries. The historical record shows that while India's efforts have been admirable, certain steps can still be taken to purposefully improve India's abilities in each of these domains.

Officer Training and Education

Having inherited the armed forces from the British Raj, India had at Independence among the most advanced professional military training and education centres in the developing world. The Army Staff College was in Quetta at Independence, and so transferred to Pakistan. Indian facilities shifted after 1947 to Wellington Cantonment in what is now Tamil Nadu. In 1958, a National Defence College was approved by the Cabinet Defence Committee and it opened its doors in 1960. In the 1970s, the College of Combat (later renamed the Army War College) was established at Mhow in Madhya Pradesh, and the Institute of Defence Management (which became the College of Defence Management) was set up in Secunderabad. In addition to training Indian officers, India's military academies and staff colleges took students from other armed forces, advancing diplomatic efforts by fostering cooperation and goodwill with military officers from other countries.

At Wellington, the intake of foreign students began in 1950, with seven students from Britain, Burma, the United States, Australia, and Canada. These expanded in the 1950s to a large number of students from other Non-Aligned and newly independent countries, such as Indonesia, Egypt, Ethiopia, and Nigeria (including future Presidents Olusegun Obasanjo and Muhammadu Buhari). Despite India's close relationship with the Soviet Union during the Cold War, it was not until 1988 that a Russian officer attended the course at Wellington.⁵ Meanwhile, the NDC produced future chiefs of the army, air force, or navy of Sri Lanka, Malaysia, Australia, and Kenya, as well as future heads of state or government of Bhutan, Bangladesh, and Ghana, among many other distinguished foreign alumni.

High Visibility Military Visits

While officer education and training targets individuals in other countries' militaries, some of whom rise to prominent positions in their armed forces, other forms of military diplomacy have the ability to have a broader impact, reaching public audiences. These include military activities, such as exercises, on foreign soil. Although both bilateral and multilateral military exercises are seen as a key element of military diplomacy, they serve a number of purposes, including enhancing interoperability and are a means of training.⁶ By contrast, high visibility efforts such as the Indian armed forces' participation in military parades and port visits by Indian naval vessels serve expressly diplomatic functions, as do activities such as the International Fleet Review.⁷ A recent example of India's contribution to a high-visibility diplomatic effort abroad was an Army contingent's participation in the Victory Day parade in Moscow in May 2015, which marked an effort at showing solidarity with the host country and was a public demonstration of India's military capabilities.⁸

Port visits serve a similar function, and they have now become a prominent feature of the Indian Navy's activities and international profile. In 2015, an Indian naval flotilla from the Western Fleet visited Oman, the United Arab Emirates, and Qatar. The same year, Indian vessels also docked in ports across Southeast Asia and the Western Pacific, including in the Philippines, Singapore, and Australia, leading to favourable media coverage and recognition of deepening goodwill among the host countries.⁹ These efforts constitute a continuation of a trend that began in the early 2000s, when the Indian Navy began to make regular visits to both the Asia Pacific and to West Asia and the Gulf, and marks a significant departure from an earlier period when Indian naval vessels rarely ventured outside the Indian Ocean.¹⁰

Humanitarian Assistance and Disaster Relief

Another area of military diplomacy at which India has demonstrated greater capabilities in recent years is in humanitarian assistance and disaster relief in other countries. The focus to date has been on evacuating members of the Indian diaspora, as in Lebanon (Operation Sukoon), Libya (Operation Safe Homecoming), or Yemen (Operation Raahat).¹¹ These operations have also occasionally extended to securing the citizens of other countries (primarily India's neighbours), which has contributed to diplomatic goodwill and has been a means of showcasing Indian leadership.¹²

But while the Indian armed forces have a solid track record of disaster relief operations on Indian soil, and of evacuating Indian nationals, it has also contributed to disaster relief efforts independent of these considerations: military diplomacy in its purest form. Recent examples include India's role in the 2004 Indian Ocean tsunami, including to Indonesia and Sri Lanka, and assistance following Cyclone Nargis in Myanmar and Cyclone Sidr in Bangladesh, as well as more recent efforts in Nepal following the devastating earthquake there. By the standards of regional militaries, the Indian armed forces do have a sizeable number of transport aircraft, helicopters, and support vessels, and this has enabled them to carry out the quick provision of food, water, and medical supplies. The acquisition of the INS Jalashwa in 2007 and

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the addition of larger Shardul-class variants to Magar-class tank landing ships in the mid-2000s have bolstered the Indian Navy's disaster relief capabilities in the maritime sphere.¹³ Similarly, India has benefited significantly from the recent acquisition of C-17 aircraft, the largest transport aircraft in the Indian Air Force, and more will be delivered in the coming years.

Navigating Resource Constraints

In all three areas of evident military diplomacy – officer training and education, high visibility military visits, and humanitarian assistance and disaster relief – India's abilities have improved, a clear by-product of better diplomatic relations, wider international interests, greater budgetary resources, and the acquisition of key pieces of equipment. Unlike many other aspects of military preparedness, which are based to a certain degree on strategic foresight, military diplomacy tends to be more demand-driven and commensurate with Indian interests and extant capabilities.

Military diplomacy is also, by its very nature, low-cost and high-impact. While resource and capacity shortages should not be exaggerated, they do provide real constraints and certain limitations. Training and education, for example, constitute a marginal item in India's budget, a rounding error in the overall defence allocation.¹⁴ If India is to upgrade the quality – and not just the quantity – of its defence forces, greater spending on developing military doctrine, training, and education is needed.¹⁵ This would have the added benefit of allowing a larger number of foreign students to attend India's defence academies and staff colleges, and may even attract a higher calibre of international students.

Similarly, while the Indian Navy has seen its share of the defence budget increase in recent years, it is still small at less than 20 percent.¹⁶ Given the particular importance and value of port visits as an aspect of high visibility military diplomacy, a larger naval allocation will increase India's ability to fly the flag more regularly and in more places. Budgetary and resource constraints are perhaps most applicable to humanitarian assistance and disaster relief efforts. While India's airlift and expeditionary capabilities have improved since the early 2000s, they are still wanting in many respects.¹⁷

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Bridging Divides and Facilitating Coordination

Beyond the deliberate allocation of resources that could strengthen India's military diplomacy, coordination between the services, between the military and civilian arms of government, and specifically between the Ministries of Defence and External Affairs would be beneficial. Inter-service cooperation would help minimize duplicating efforts between the various military academies and staff colleges (including the tri-service institutions). It could also advance humanitarian assistance efforts, particularly in contingencies that would involve resources or personnel from multiple services (or the paramilitary forces).

The civil-military disconnect is, possibly, a more important consideration, not least because it creates a drag on operational effectiveness and because

overcoming that divide is ultimately crucial to ensuring that military means can achieve the desired political and diplomatic outcomes.¹⁸ A two-way dialogue is needed to ensure that the political objectives are clearly articulated by the civilian leadership (whether political or bureaucratic) and that the military has the capability and willingness to achieve those objectives, particularly as they relate to training and education or to humanitarian operations.

Finally, by its very nature, military diplomacy falls at the intersecting purviews of the Ministries of External Affairs and of Defence, and as such requires close cooperation between the two entities. This has not always been seamless. As defence analyst Nitin Gokhale writes in the context of training foreign forces, “The military confines itself to purely professional exchanges and exercises and leaves the political dimension to be handled by the Ministry of External Affairs.”¹⁹ A certain amount of cooperation does take place already at the most senior Cabinet and secretary levels. Defence attachés posted in embassies abroad also play a critical function in harmonizing defence policy with diplomacy. Efforts have also been made in recent years to bridge the divide in New Delhi, including through the posting of an Indian Foreign Service officer in the Ministry of Defence’s Planning and International Cooperation division and the deputation of a serving military officer as a Director for Military Affairs at the Ministry of External Affairs.²⁰ But such efforts can still be built upon and broadened.

A few specific steps can be taken to help bridge all of these divides. One would involve creating a designated political-military affairs division within the Ministry of External Affairs. The current Disarmament and International Security Affairs (D&ISA) division bears considerable responsibility for non-proliferation issues, leaving little time for defence coordination and planning. At the same time, an increase in the number of personnel at the Ministry of Defence dealing with various aspects of international policy is necessary. Calls for a designated defence track within the Indian Administrative Service (IAS), possibly by the creation of “a special cadre of defence specialists,” may or may not be immediately feasible, and would certainly face resistance. But the creation of specialized defence expertise within the civilian bureaucracy would help considerably in improving coordination with the services and with the diplomatic corps.²¹

Secondly, given their unique positions as a public face for defence policy, India’s defence think tanks – the Institute for Defence Studies and Analyses (IDSA), Centre for Land Warfare Studies (CLAWS), Centre for Air Power Studies (CAPS), National Maritime Foundation (NMF), and the United Services Institute of India (USI) – can play a particularly useful role in military diplomacy. This can be through scenario planning on behalf of the armed forces, based on open source intelligence, and through coordination activities and interactions with external partners, including foreign governments. Staffing these think tanks with more serving officers would give them greater currency and take advantage of their being both intellectual resources and conduits.

Finally, humanitarian assistance and disaster relief operations could certainly benefit from greater coordination with other countries and between

ministries. They require better standard operating procedures, designated channels for communication in the event of an emergency, pre-arranged diplomatic protocols, and a certain amount of advance preparedness to secure the appropriate naval and air assets. Most importantly, HADR operations could benefit from contingency planning, another area in which the services and Ministries of Defence and External Affairs can consult India's defence think tanks.

Conclusion: Modest Enhancements

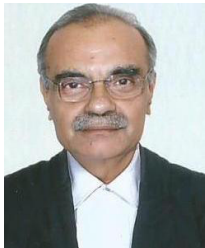
Among the many diverse challenges facing India's national security, military diplomacy represents something of an opportunity. India has historically taken an active role and interest in military diplomacy, and its government and military has seen it as important for India to present itself as a responsible stakeholder, net security provider, and benign military power. Military diplomacy has also benefited from a conducive international environment and India's growing profile and interests. It also remains, by necessity, opportunistic. The broader trends suggest that India's capabilities will increase organically.

But a few relatively modest steps could have a meaningful impact on India's military diplomacy profile. These include designating resources to increase the quantity and quality of foreign students at India's military academies and staff colleges; improving India's expeditionary capabilities, particularly in the maritime domain; and generally increasing the navy's share of the defence budget. More importantly, efforts must be made to improve coordination between the services, between the military and civilian branches of government, and between the Ministry of External Affairs and Defence. This can be accomplished through relatively small steps, including through creating specialized divisions in both ministries, by making better use of India's defence think tanks as conveners and for planning purposes, and through better preparation for humanitarian disasters. In a peacetime international environment filled with global uncertainty and regional instability, a few such modest steps would help ensure that India gets the maximum diplomatic bang for its military buck.

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Reinvigorating Defence Procurement and Production in India



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More than five decades after becoming an independent nation and despite fighting at least four wars with its hostile neighbours, India was still not militarily well prepared when it was forced into a virtual war by Pakistan in 1999 in Kargil and other areas along the Line of Control (LoC). According to the Kargil Review Committee, the military operations were impacted, among other things, by critical gaps in the inventory of the armed forces.

In the wake of the war and during the past fifteen year since then, several steps have been taken by the government to fix the problem besetting defence procurements. These range from creation of an exclusive procurement organization, promulgation of a Defence Procurement Procedure (DPP) and allowing the private sector in defence production to raising of the Foreign Direct Investment (FDI) cap in defence through the automatic route and beyond that with the approval of the Foreign Investment Promotion Board (FIPB). However, the voids persist.

The Indian Ministry of Defence (MoD) continues to struggle in procure artillery guns, air defence systems, fighter aircraft, submarines, night vision capabilities, just to mention a few pressing items from the long shopping list. To add to the woes, a large proportion of the requirement continues to be met through imports. In fact, last year India emerged as the largest importer of defence equipment, accounting for 15 per cent of the volume of global arms imports over the previous five year.

Defence preparedness is critically dependent on an efficient system of defence procurement and indigenous production capability to sustain modernization of the armed forces. Realising that India faces a challenge on both these counts, the government set up a committee of experts in May 2015 to recommend the contours of a policy framework to facilitate 'Make in India' in defence and suggest concomitant changes in the existing procedures. The committee submitted its report in July 2015 which has since been under the consideration of the Ministry of Defence.

It is somewhat disconcerting that six months down the line, neither the policy nor the revised procurement procedure is in place. Some decisions were taken by the Defence Acquisition Council (DAC), the apex decision-making body in MoD in its meeting of January 11, but these decisions – widely reported in the media – do not add up to a comprehensive policy framework or a composite array of procedures to steer defence procurements

in future in a way that is more efficient than has been the case so far.

Having already lost a lot of time in trying to fix the problem, it would be pragmatic to make the committee's report the basis for evolving a dynamic policy to promote indigenous production and bringing about procedural changes which expedite the process of finalising defence contracts. This report is a good reference point because the wide-ranging recommendations made by the committee reflect the collective wisdom of a cross-section of the armed forces, defence industry, domain experts and think tanks. It cannot get any better than that.

This is not to suggest that all recommendations made by the committee must be implemented or there is no need to go beyond the committee's vision. In fact, it may not even be possible to implement every recommendation immediately since the committee has left it to the government to work out the details, as in the case of the 'strategic partnership model'. What is needed is to evolve a short to medium strategy to galvanise indigenous defence production and streamline defence procurements. The observations and recommendations of the committee would be of a great help in doing so.

Any such strategy will have to take into account three factors that have a direct bearing on defence procurements and production: pragmatic defence planning, efficient procurement procedures and an eco-system that promotes indigenous production.

Pragmatic Planning – Key to Sustainable Strategy for Revamping Procurement System

Alan Lakein famously said, 'failing to plan is planning to fail'. There are many who would argue that defence planning suffers on account such macro factors as the absence of a National Security Strategy and the Chief of Defence Staff. There may be some merit in this view but, going by the past experience and the present trend, it is going to take a while before these issues get addressed either way. What is needed is to come up with a good plan within the existing limitations for, to quote George Patton, 'A good plan implemented today is better than a perfect plan implemented tomorrow'.

The fact is that the existing defence plans are centered on the Defence Minister's Operational Directives which, in turn, are based on the government's threat perceptions, which are not going to change irrespective of whether or not there is a National Security Strategy or the Chief of Defence Staff. That being the case, the government needs to focus on the process of defence planning.

At present, the 15-year Long Term Integrated Perspective Plan (LTIPP) forms the basis of the downstream 5-year Services Capital Acquisition Plan (SCAP) and the Annual Acquisition Plans. However, LTIPP is not a composite plan as it does not cover the Coast Guard, Border Roads, DRDO and the Ordnance Factories. All of them have their separate plans. Such disjointed planning goes against the grain of cost-effective, efficient and coordinated planning. To begin with, there is a pressing need for an overarching entity to

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coordinate and steer the planning process across the armed forces and other organizations/departments.

Secondly, while the Operational Directives provide the framework for defence planning, the actual process of planning suffers from the absence of planning guidelines and institutional wherewithal required to prepare the defence plans. A good workable plan should not only be synergetic but it must necessarily be financially viable. Appraisal of alternatives to ensure optimal utilization of the existing resources through outsourcing, performance based logistics and other means presupposes involvement of the defence establishment right from the commencement of the planning process. The last-minute examination and approval of plans by the DAC is, at best, symbolic.

There is no mechanism to ensure such synergetic planning. The Headquarters Integrated Defence Staff (IDS) does collate the individual plans of the three services into a joint document but, as observed earlier, these plans exclude other organizations and departments which are supposed to play a crucial role in execution of the plans put together by the IDS. The problem is further aggravated by the lack of systematic reviews based on outcomes and mid-course corrections. The plans lack an outcome orientation.

Thirdly, the existing defence plans are predicated on unrealistic assumptions about availability of budgetary support. The current LTIPP (2012-27) is believed to be based on the assumption that the allocation for defence would equal three per cent of the Gross Domestic Product (GDP) during the entire plan period. This was unrealistic as there was no such assurance from the Ministry of Finance (MoF) and, in any case, the assumption was neither based on any empirical India-specific study of what would constitute a realistic level of funding nor on the past trend of budgetary allocation. As a matter of fact, the allocation for defence has gone down from 1.80 per cent of the GDP in 2012-13 to 1.73 per cent in 2015-16.

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Contrary to the general perception, the extent to which funds are likely to be available for five-year plans is generally known when these plans are formulated but at least the current (2012-17) and the previous (2007-12) five-year plans did not conform to the level of budgetary support indicated to the Services Headquarters and other departments by the MoD. This is one of the reasons why there is a substantial mismatch between the annual budgetary support sought by MoD (which is the aggregate of the requirements projected by the armed forces and other departments) and the actual budgetary allocation. The gap increased from INR 12,450 crore in 2009-10 to INR 79,363 crore in 2014-15 before coming down to INR 40,660 during the current year.

Planning has to be pragmatic for it to produce results. The choice is between making a perfect plan, even if it has to be based on unrealistic financial assumptions or a good plan based on likely availability of funds. The defence planners need to bear in mind that there is little possibility of the government revenues going up in any substantial measure in near future, making it possible to allocate substantially higher funds for defence.

What is immediately needed is an overarching permanent planning cell in

MoD comprising members from the ministry itself, armed forces, and all other departments/organizations, with full authority to interact with non-official experts and industry representatives. It should report directly to the DAC throughout the process of planning. The first task to be assigned to the cell should be to review the current 5-year plan and start the ground work for the next 5-year plan, assuming that the government does not intend to do away with the present system of planning. This should set the ball rolling immediately. The effort will not go waste as this core group could easily become a part of any other structure that the government may finally decide to create for defence planning.

Procurement Policies and Procedures

The existing policies and procedures are almost universally viewed as archaic, notwithstanding the fact that between 2002-03 and 2014-15, MoD managed to spend close to INR 5 lakh crore on capital acquisitions following these very policies and procedures. The track record of the Indian Navy, Air Force and even the Coast Guard in utilizing the budgetary allocation is better than that of the Army, though they all follow the same procedure.

However, it is also true that during the same period approximately INR 50,000 crore remained unspent. While this may be a valid ground for questioning the efficacy of the existing procedures, underutilization of funds seems to be more on account of tardy decision-making than procedural complexities. Be that as it may, the experts' committee has already gone into this issue threadbare and made several useful recommendations based on the feedback it received from a cross-section of experts from the bureaucracy, armed forces, industry and the think tanks.

Since these recommendations reflect the collective wisdom of the entire spectrum of stakeholders, their implementation should fix the problems related to procurement policy and procedures. However, it is not going to be easy to implement all the recommendations in one go, assuming that all of them are acceptable to the government. Therefore, MoD needs to consider phased implementation of the recommendations, deferring implementation of extraordinary recommendations, such as setting up of a defence procurement executive outside the staff-oriented environment of the government of India, to a later date.

All those recommendations which have a direct bearing on ease-of-doing business and improving the industrial eco-system, such as those related to taxation, incentives, innovative mechanism for channelling the FDI received by way of offsets, need to be accorded priority. The coming budget provides an opportunity to bring about some of these changes.

It was announced by MoD last month that the new DPP would be issued within two months. The revised procedure should incorporate minor changes in various provisions of the DPP as recommended by the committee of experts and ensure that its text is not polysemic. This will go a long way in mitigating the rigours of the existing procedure and speeding up procurements. It will be a huge set back to the government's image and its commitment to walk the

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talk on Make in India if this deadline is missed.

Promoting Make in India in Defence through indigenization

It is disconcerting that India meets less than 40 per cent of the requirement of defence equipment through indigenous sources. Efforts made in the past have had little impact. Not a single project has taken off under the ‘Make’ procedure which was introduced in 2006 to promote indigenous design and development of prototypes of high technology complex systems. One of the decisions taken by the DAC last month is to fine tune the ‘Make’ procedure but the details given out by MoD are sketchy.

As a matter of fact, another decision taken last month to introduce a new ‘Buy Indian designed, developed and manufactured (IDDM)’ equipment with 40 per cent indigenous content is quite mystifying. In the absence of details, it is difficult to understand how this will help the cause of speeding up procurements or indigenization. Going by what has been made public, there is a real danger of this ostensible effort to promote indigenization getting mired in procedural tangles.

This is also true of the recommendation made by the committee that MoD should adopt ‘strategic partnership’ model to forge long-term relationship with the private industry to ‘support sustainability and incremental improvements in the capability of platforms through technology insertions over their lifetime’. A follow-up committee set up by MoD to recommend the method for selection of these partners seems to have submitted its report. The idea of long term partnerships is good and it will certainly promote self-reliance in defence but the model suggested by the committee seems somewhat shaky as the choice of the strategic partner for a particular project by MoD may not always go unchallenged by other competitors.

Considering that the strategic partnership model is meant for Buy and Make cases in which the foreign vendors are required to transfer technology to MoD-nominated Indian production agencies as per the terms of the contract, it would have been easier to adopt a model in which the choice of the Indian partner is left to the foreign vendors. This is only to suggest that there may be alternatives to the recommendations made by the committee. MoD needs to consider all such alternatives before promulgating the new DPP.

Evolving a strategy

The ultimate objective of reforming the existing systems and procedures is to ensure expeditious procurement of the approved requirements of the armed forces in terms of capability sought by them and maximise indigenous production. At the systemic level, the existing structures and procedures need to be reformed to ensure that the defence plans (a) comprehensively encompass the armed forces as well as other organizations and departments, (b) are based on realistic financial assumptions, and (c) get formulated by an overarching planning cell within the MoD, under the direct and continuous supervision of the DAC.

The planning process must lead to clarity about what the MoD is likely to procure in the near future and the category under which each procurement is likely to be made. The Indian industry and the foreign vendors will be better prepared for responding to MoD's Requests for Proposal if the requirement is known well in advance.

The armed forces cannot wait forever for their requirements to be met through indigenous sources. Wherever it is considered unavoidable to buy equipment from abroad, the government-to-government procurement model would be ideal.

As a matter of policy, life cycle support, maintenance, life extensions and upgrades should be reserved for Indian entities. The role of the public sector and the private sector should be clearly defined.

It is imperative to promote indigenisation of defence production by creating the right eco-system for the Indian industry. The recommendations made by the committee of experts provide a good basis for improving the eco-system. While disjointed attempts at reforms are not very helpful, considering the enormity of the task, MoD needs to plan for phased implementation of the reforms, giving priority to procedural and eco-system related measures.

None of this, however, will be of much help unless something is done about the speed and quality of decision-making. This may be by far the most intractable challenge before the MoD.

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In Need of a Crisis? India's Higher Defence Organisation at 75



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As most policy analysts know, forecasting is a risky venture. There is a certainty that aspects of the forecast, if not in its entirety, would be mocked sometime in the said future. It is with utmost caution therefore that this piece analyses what *should be* India's Higher Defence Organisation in 2022. Necessarily however it begins by briefly describing the evolution in India's higher defence organisation. Thereafter, it discusses the state of the current debates on defence reforms and describes, in an ideal world, what should the higher defence organisation in 2022. It concludes with analysing some potential drivers for change.

India's higher defence organization was set up on the advice of British officers, Lord Mountbatten and General Ismay. They envisaged a system of committees which envisaged an active dialogue on a variety of issues between politicians, civilian bureaucrats and the military. More importantly, as revealed by the Mountbatten papers, they were keen to create a joint staff under a Permanent Chairman of the Chiefs of Staff Committee at a later date. Indeed, from 1960 onwards Mountbatten approached almost all Indian Prime Ministers and, after pointing out weaknesses in the system, argued for appointing a Chief of Defence Staff (CDS). However India's political leaders, spooked by military coups by neighbouring countries, were hesitant to appoint a 'Super-General.' As discussed later, these apprehensions continue to this day. An unfortunate legacy for higher defence organisation was the bitter relationship between the first Indian Chief of Army Staff, Field Marshal Cariappa, and H.M. Patel, the Defence Secretary from 1947 to 1953. Another peculiar characteristic of this time was that the Army Chief outranked the other two service chiefs and was, moreover, older in age than his counterparts (the first Indian Naval Chief was only appointed in 1958). This made it inevitable that the Chief of Army Staff dominated over the other service chiefs, which also created some resentment. All these factors meant that the 'active dialogue' envisaged by Mountbatten and Ismay did not work in practice.

India's higher defence management before and during the 1962 war is beyond the scope of this brief however it is worth noting that the current model of civil-military relations emerged as a consequence of this war. This model eschews any role for civilians in the 'operational domain'—loosely defined, of the military. This is primarily because of a narrative that civilian meddling led to defeat in the 1962 war. This established the norm in Indian civil-military relations wherein civilians give broad direction and enjoy unchallenged civilian control and the military has considerable operational autonomy. This arrangement can be imagined as one of different domains—with civilians exercising tight control over some matters, like nuclear weapons, and the military enjoying autonomy in others, like training, doctrine, operations, planning, etc.

The next major development in higher defence management occurred in the 1980s and was driven by Arun Singh, who held the post of Minister of State for Defence. It was his effort that led to the creation of the Defence Planning Staff (D.P.S.)—which was aimed at ushering in jointness in defence planning. However this organisation was opposed by the services and, after the departure of Arun Singh from the Defence Ministry, lost its relevance. Arun Singh's ideas informed the next effort at defence reforms, through the Committee on Defence Expenditure, created in 1989. Its recommendations were ahead of its time and as it was unacceptable to the stakeholders—both civilian and military bureaucracies, the report was quietly buried (a job done so well that, while responding to an RTI query the Defence Ministry claimed—in an obvious case of perjury, that it could 'not locate' this report!). Despite this, during the 1990s, India's strategic community engaged in a wide-ranging debate to restructure higher defence organisation and address weaknesses in national security.

Unfortunately, perhaps as in the way of a democracy, reforms in higher defence management only occurred as a consequence of the 1999 Kargil war. This was initiated by the report of the Kargil Review Committee and its follow up—the Group of Ministers' Report on National Security. Ironically, the Task Force on Defence was led by Arun Singh. The Report of Group of Ministers emphasised jointness and envisaged a Chief of Defence Staff operating with an Integrated Defence Staff (IDS) and with Joint Commands—the Strategic Forces Command and the Andaman and Nicobar Command. The Government at that time, under Prime Minister Vajpayee, agreed to all these recommendations but refused to appoint a C.D.S. The opposition for the C.D.S post came from three quarters—the Indian Air Force, civilian bureaucrats and the Congress Party. The fear within the political leadership then—as also now, is that appointing a C.D.S will somehow upset the civil-military 'balance.' It was therefore decided that such a post would be created after obtaining a consensus of all the political parties. Tellingly, even after 15 years such a consensus is still awaited. To be sure the post-Kargil defence reforms have led to some incremental progress in jointness. However, by all accounts, there has only been an 'incomplete transition' to jointness.

Around a decade after the Kargil war, many analysts were calling for another round of defence reforms. Their argument was that there were still weaknesses in higher defence management epitomised by the lack of jointness and civil-military friction. Responding to this argument the government set up the Naresh Chandra Committee to re-visit the defence reforms process. After a year of deliberations this committee submitted its report. While the report is still classified sections of it were leaked to the press. According to media reports, to bypass the C.D.S. imbroglio the committee recommended creating a Permanent Chairman of the Chiefs of Staff Committee. For the first time all three service chiefs publicly backed this initiative. However, even after a couple of years of deliberation the United Progressive Alliance (UPA) government did not act on its recommendations. The reasons for its hesitation are not exactly clear however some speculate that while Prime Minister Manmohan Singh was keen on defence reforms, his Defence Minister, A.K. Anthony, was reluctant.

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Currently, there is renewed attention on defence reforms and restructuring of higher defence management due to supportive statements from both Prime Minister Narendra Modi and Defence Minister Manohar Parrikar. The Prime Minister, while addressing the Combined Commanders Conference in December 2015, laid out an ambitious vision for defence reforms and higher defence management. Unambiguously stating that “reforms in senior defence management” was an “area of priority” for him—he challenged his national security advisers—both civilian and military to implement the next phase of defence reforms. Such calls have been echoed by Defence Minister Parrikar who had publicly declared that to enable integration between the services the “Chief of Defence Staff is a must.” There is an air of expectation therefore that this current government will soon unveil a transformative roadmap for reforming higher defence management and implementing defence reforms.

What are the issues under debate and what should India's higher defence organisation look like in 2022? The issue that most are fixated on is the creation of a Chief of Defence Staff (C.D.S) or a Permanent Chairman, Chiefs of Staff Committee. This has a historical resonance as Mountbatten—the architect of India's higher defence organisation, was keen on it. However, generations of political leaders have baulked at creating such a post out of a fear that this will empower the military. Civilian bureaucrats in the Ministry of Defence have also expressed their opposition to this as they believe that this would diminish their powers. In time, the services have also been content with the existing system as a C.D.S would diminish its autonomy. Therefore the status quo suits the major stakeholders except it does not help integrate the forces. India therefore is among the least joint major military power—those with considerable air, land and naval assets. India's existing structure of higher defence organisation therefore leads to weaknesses in military effectiveness. Perhaps acknowledging this the current political dispensation is publicly supporting creating such a post. However it is not certain whether they are supportive of an *institutionally powerful* C.D.S.—one who can overrule the service chiefs if necessary. Creating a nominal C.D.S. can not only be misleading but could be dangerous as it would give the appearance that reforms have been enacted. This issue therefore requires to be carefully monitored.

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Another issue under debate is that of Joint Commands. India still continues with the system of single service commands and as noted by Admiral Arun Prakash, there are “nineteen commands between the three services and the Integrated Headquarters but not one of them is co-located with the other.” After the Kargil war, an experiment was undertaken to facilitate joint commands by establishing one—the Andaman and Nicobar Joint Command. However, as most would admit, this experiment was a failure as the services undermined the Joint Command by refusing to share assets and extend other forms of cooperation. Opposition from the services is understandable (though not excusable)—more joint commands would mean loss of senior officer billets. Therefore while other major militaries—including that of Russia and China, create more joint commands the Indian military continues to rely on single service commands.

A final issue that is being deliberated upon is that of greater civil-military

integration in higher defence management. India's Ministry of Defence is almost exclusively civilian and its interaction with the almost exclusive military headquarters has been problematic. As a result there has been considerable tension between the Ministry of Defence and the Service Headquarters leading to an 'us and them' sentiment. This has been exacerbated by a lack of expertise in the civilian bureaucracy—a by-product of the generalist I.A.S. system of administration. For some within the military the solution to this is to 'integrate' the two—preferably with the civilian bureaucracy serving under the military. However this would be antithetical to civilian control and moreover would remove an important source of 'checks and balances.' Instead, a better alternative would be to cross-post officers, develop and reward expertise within civilian bureaucrats and create conditions for a more harmonious interaction between the two bureaucracies. Such an approach would study the 'best practices in defence management' in different democracies and recommend one suited to India.

Following from this discussion the outlines of India's desired higher defence organisation in 2022 should be clear—there should be a C.D.S.-type post with a mandate to enforce jointness. As a result the service chiefs would lose their commander-in-chief function and would be chiefs of staff advising the Defence Minister. There should be geographically delineated joint commands perhaps under a 4 star rank to be assisted by a joint staff. This would enable operational integration among the three services in the field and push jointness to lower formations. The boundaries of the joint commands and its composition can be debated but the emphasis must be on military effectiveness and not on parochial service interests. In addition, there would be a permanent cadre of civilian bureaucrats to man positions related to national security. This would fill the expertise gap in the Defence Ministry. Finally, there should be an emphasis on a civil-military partnership including by cross-posting officers and finding other ways to diminish, if not demolish, the 'us and them' narrative.

With all this wishful thinking, sceptics have a right to question of how do we get here and how do we achieve this ideal desired state? There are three possible drivers for such changes. The first, perhaps most desired driver, is forceful political intervention. For years generations of defence reformers have been decrying the 'lack of political will.' The assumption is that resistance to change is natural and to be expected from the military and civilian bureaucracies but forceful, well-intentioned and well-informed political intervention would overcome this resistance. Indeed, this has been the experience in other democracies that have transitioned from a single service approach to a more joint approach. Many therefore pin their hopes on the current government. However, if no significant reforms are enacted within the next couple of years, then one would have to admit that 'talking' and 'doing' are two entirely different activities.

Another possible driver is for the system to change from within. This would place hope in India's senior military and civilian leaders overruling their parochial, institutional interests to accept a roadmap towards organisational change which emphasizes military effectiveness over other considerations. While this is possible in theory but, based on the available evidence, it is

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highly unlikely. Officials in service—whether civilian or military, have not shown any enthusiasm for restructuring higher defence organisations—the status quo suits them best. It is only towards the end of their career or, after retirement, that they voice complaints about the system and emerge as champions of reform. Their succeeding generation meanwhile ignores such efforts—and the cycle continues. In short, expecting the system to change from within might take an eternity.

The most likely driver for change therefore is that of a war or a crisis—one which ends badly for India. Unfortunately, this rather cynical assertion has an element of historical truth to it. More than a decade before the Kargil war, India's strategic community had engaged in a debate about jointness (or the lack of it) and weaknesses in higher defence organisation. It was only after the war that an effort was launched which led to the currently 'incomplete transition' to jointness. More recently, before the 2008 Mumbai attacks there was much commentary about the need to enhance coastal security and create a federal organisation to fight terrorism. It took more than 3 days of a collective national trauma for both these measures to get implemented—and critics would argue that it has not gone far enough. It seems therefore that India's polity responds only when it has to and then also only to assuage public anger. If this assessment is true then before 2022—for the sake of defence reforms, India's 'needs' a good crisis. However even with this line of thinking it would be unfair to put the onus of blame entirely on India's political class. It is instead a failure of Indian society to not demand changes *before* the crisis. The failures in Kargil and Mumbai (and maybe even Pathankot) therefore are our own.

Early in 2016, the Chinese government announced large scale defence reforms including the formation of new joint commands. If nothing else such a development should give pause to India's national security community—if the world's largest militaries are embracing jointness then why should the Indian military be an exception? India's higher defence organisations are undoubtedly in need of a change, the question is how and when do we get there? It is hoped that by 2022, when India celebrates 75 years of freedom, there will be no regret about the manner of change.

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Indian Air Power



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Challenges and Opportunities

The Indian Air Force today stands at a crossroads. In an age of increasingly costly weaponry and an almost static defence budget the IAF faces the numbers crunch and feel it is underequipped to defend India's current borders. If this pressure weren't enough, additional stress comes from a strong power projection lobby in favour of the Navy and long range blue water capabilities. In the midst of these contradictory impulses, the IAF clings to an adamant position that it cannot function with reduced numbers, and runs the risk of appearing fiscally reckless. At the same time it has also failed spectacularly in convincing the leadership, either by argument or by demonstration, of the pressing need to move towards air-centrism – something that separates India from every other major power.

This paper will examine the main obstacles hindering India's movement towards an air-centric paradigm. It will navigate the various issues of army centrism, opposing forces, fleet size and finances. More than any numbers game, these will be the critical issues that will shape the discourse over the next decade and decide if India does indeed move towards a versatile air centric approach

The Political Problems of Army Centrism

Almost every major power has in the last few decades moved towards comprehensive air centrism. This started becoming apparent during the 1991 Iraq War and since 1991 campaigns such as those in the Balkans, Iraq, Libya indicate a consolidation of the trend. Russia too seems to have now moved towards this direction albeit more grudgingly. As opposed to the massive Operation Storm 333¹ that involved assassinating then Afghan President Hafizullah Amin, the killing of Chechen leader Dzhokhar Dudayev was a relatively surgical affair carried out by precision bombing². Similarly the main thrust of Russia's ongoing campaign in Syria seems overwhelmingly air centric³ and at the time of writing seems to have turned the tide⁴ against ISIS and other terrorist organisations. Whether China moves towards air centrism remains to be seen. However President Xi Jinping has set in motion deep cuts in the People's Liberation Army and augmenting of Air and Naval forces⁵.

This brings about two unique features of Indian thinking on air power – first that air power is considered synonymous with high collateral damage and second that the sheer physical presence of airpower is considered a disproportionate response. The flexibility and scalability of the final effect is not calculated for proportionality but rather the method of delivery.

India remains the only power that seems to be bucking this trend. As of 2016 the planned mountain strike corps was declared operational adding anywhere between 30 and 60 thousand troops to an already bloated army standing at around 1.2 million and a further 960 thousand reserve⁶. Contrast this with the US Army which had by 1975 – despite its many international commitments and formidable foes reduced its size to 780,000 and in the 21st century this number has hovered around the 500,000 mark⁷. In parallel there seems to be almost no visibility of air power in recent Indian retaliatory attacks or planning. The attack on Myanmar despite its suitability for air power was carried out as a cross border infantry raid, albeit in helicopters. Reporting of the raid seemed to suggest that airpower was not chosen due to its “escalatory effects”⁸. Similarly plans to eliminate a noted terrorist Dawood Ibrahim in Karachi also seemed to have been planned as a long, painful, extremely high risk, low deniability, commando operation inserting troops on the ground in Pakistan⁹. Operation Neptune Spear That killed Osama Bin Laden in May 2011 where the need to visually identify the resident necessitated an airborne infantry assault. Dawood Ibrahim’s presence at his residence on the other hand had been confirmed by multiple sources and was plump for an air attack. Despite this only land based operations were contemplated. In the few cases where air attacks have been discussed such as striking terror targets in Pakistan Occupied Kashmir, satellite imagery in fact shows that the nature of these facilities is dispersed and sub-optimal for targeted assassinations.

This brings about two unique features of Indian thinking on air power – first that air power is considered synonymous with high collateral damage and second that the sheer physical presence of airpower is considered a disproportionate response. The flexibility and scalability of the final effect is not calculated for proportionality but rather the method of delivery. Consequently western protestations about “the flexibility and precision” of airpower mean nothing in a country that does not consider effects based operations. On the other hand, in the West and surprisingly even among India’s neighbours – Pakistan and Sri Lanka for example – ground forces are considered far more threatening than air and naval forces¹⁰.

This presents the first and possibly the great challenge of the next decade – the mindset of the political and executive leadership of India. How do you get an omnipotent civilian executive (both elected and unelected) that is deeply disinterested in defence to change their army centrism and convince them that air power can do everything they seek with greater precision and flexibility than any army?

Air centrism also addresses another major concern that has driven the deliberate dysfunctionality inflicted on the Indian military – that of ‘coup-proofing’ India. As Steven Wilkinson has pointed out in his book¹¹, the fact that coups did not happen in India was not a mere fluke, but rather the result of a systematic effort put in place by our founding fathers as far back as the late 1920s. Anticipating Independence, the structure and functionality of the military were carefully studied and a series of decisions were taken to break up the coherence of the army. Post independence many of these trends continued – very deliberately. Srinath Raghavan points out¹² the reluctance of India’s first

Prime Minister to securitise issues or use force, even in situations that were visibly already securitised. In effect one could reach the conclusion that the formative years of India saw the striking of a careful balance: keep the army functional enough to ward off external threats but not internally coherent enough or structurally powerful enough to inject itself into policy or oust governments. Managing this dilemma has meant that India's handicapped military has never been able to optimally protect national interests – leave alone projecting power abroad.

Air and Naval centrism brings a completely different dynamic to India's need to assert civilian supremacy in that it facilitates a significant reduction in the size of the Army and its ability to influence the system. An army whose focus is on defending territory – leaving the offense to Air and Naval forces, is fundamentally a small army. A small army designed not to occupy hostile territory but merely to defend and control friendly sovereign territory is also an army that is incapable of carrying out a coup or exercising disproportionate influence on government. Simultaneously it would increase India's military capabilities by several orders of magnitude while reducing the overall size of the forces to quite possibly a quarter of their current size with careful planning.

In effect a shift to aero-naval centrism would mean structural coup-proofing. The closest (albeit imperfect) comparison one can draw is the course of the British and French militaries through the 18th and 19th centuries. Britain that prized its navy above all other services ensured political stability at home. India for example was controlled by no more than 100,000 ethnically British troops – the bulk of the externally deployed armies being natives of those lands. This maintained a balance (though not intentionally) between having a large force abroad, but not big enough at home to be politically decisive. France on the other hand – being a continental power maintained a large ethnically French army on its home soil and paid the price for this as can be seen in the coups of Napoleon and others through much of the 19th century and well after.

The Numbers Game – Quantity & Finances

India has a heterogeneous fleet of combat aircraft and support assets of varying origin and ages. IAF fighters are side-lined by poor reliability, exacerbating the quantity problem versus India's neighbours, or by poor combat efficacy, with aircraft systems and munitions often failing to produce desired results. The support fleet, particularly transport aircraft and utility helicopters, fares somewhat better. The IAF is the premier Humanitarian Assistance and Disaster Relief (HADR) force in the region, and its transport assets have been highly visible – and have proven invaluable – time and again over the past decade or so, in operations ranging from flood relief to earthquake response to fire fighting. Laudable though these undertakings are, they are not part of the IAF's core responsibilities, and are another reflection of the unusual Indian mindset regarding air power. Indeed, the remainder of the IAF's support assets – tankers, AEW&C, C3/ISR platforms – remain woefully deficient, both in number and in capability.

It is clear that even in the best circumstances, the IAF will only be close to a 40-plus-squadron force a decade from now, and even then with two

The IAF will only be close to a 40-plus-squadron force a decade from now, and even then with two major caveats – first, nearly half the force will by then be either obsolete or obsolescent, and second, the entire projection hinges on a number of programmes that are at various stages of development today, and will need to go off smoothly over the next ten or so year.

India's fighter squadrons, present-2025:

Type \ Year	2016	2020	2025
MiG-21 (all)	9	6	4-6 ¹
MiG-27 (all)	3	0	0
Jaguar	6	6	4-6 ²
Mirage 2000	3	3	3
MiG-29UPG	3	3	3
Su-30MKI	11	14 ³	14
LCA	0	2	4 ⁴
MMRCA	0	2	2 ⁵
FGFA	0	0	2-4 ⁶
AMCA	0	0	2 ⁷
Total	35	36	38-44

¹MiG-21 Bisons will be the last to retire, but they will be obsolete long before their airframe hours run out

²The oldest Jaguars will have to be retired between 2020 and 2025, unless a comprehensive upgrade, overhaul and life-extension programme is executed soon

³With a production licence already in place, additional Su-30MKIs may yet be ordered

⁴LCA projections contingent upon the type attaining full operational capability and series production in meaningful volumes

⁵Although it is unlikely that a deal for 36 Rafale will prove affordable, this projection remains in place based on public pronouncements by various government figures

⁶Based on the co-development or co-production of the aircraft being agreed to within a reasonable time frame

⁷Assuming a trouble-free development programme and entry into service for the AMCA

major caveats – first, nearly half the force will by then be either obsolete or obsolescent, and second, the entire projection hinges on a number of programmes that are at various stages of development today, and will need to go off smoothly over the next ten or so year.

By comparison, the Pakistan Air Force operates 20-odd fighter squadrons, but with a running production line for the JF-17 Thunder, as well as access to the latest in Chinese developments. With or without further access to F-16s, the PAF is already recapitalising its force, and although ambitions to expand may be limited by fiscal realities, the PAF is a frequent beneficiary of both American and Chinese largesse, so cannot be disregarded as a serious adversary. The PLA Air Force (PLAAF) on the other hand already massively outnumbers the IAF, with over 80 operational combat squadrons, including a number of bomber squadrons (essentially standoff strike cruise missile carriers) – the only Air Arm in the world that has maintained this capability alongside the Russians and Americans. In addition to a range of indigenous fourth-generation types under production, the fifth-generation Chengdu J-20 fighter has entered low-rate production, and is expected to

enter frontline service before 2020. A second fifth-generation fighter, the J-31 is also under development, and will probably become operational two to five years after its larger sibling.

Clearly facing combined hostile force of nearly 100 squadrons, the Air Force cannot rely on quantity but has to shift decisively to quality solutions. However the current air force plan seems to be great quality in great quantities. The quality comes at a very heavy price. The Air Force, as the most technology centric wing of the armed forces, is disproportionately affected by the skyrocketing costs of weapons systems in the information age. At the same time, India can hardly afford to downsize its air force beyond a certain point. Indeed, being forced to play 'catch up' and rapidly replace or modernise large portions of its inventory have only served to amplify these effects.

This financial tension has led to several clashes with the Finance ministry over procurement decisions. The clearest example of this was the Finance Ministry's recent rejection of the procurement of Airbus A330 MRTT aerial refuelling aircraft, which procurement is now on hold. It would seem the Rafale multirole fighter procurement is also heading in the same direction, given the cost blowouts.

While the need for maintaining current combat numbers is debateable - there are several ways in the which the air force can shed excess flab.

The first of these would be to focus entirely on an air combat role and get rid of the rotary wing (helicopter) fleet. Today's fixed wing aircraft both manned and unmanned with precision strike and sophisticated surveillance capabilities are able to carry out much of the helicopters attack role with significantly less vulnerability. Munitions like the CBU-105 enable aircraft to decimate concentrated armour on the ground – one bomb being capable of destroying 40 tanks – from greater standoff ranges, and hence greater impunity, than a helicopter. Similarly Israel's attack drones were designed for persistent surveillance and for strike on armoured formations. It is a tribute to their capabilities and versatility that they were diverted for low intensity warfare during the 2006 invasion of Lebanon and the 2008 'Operation Cast Lead' in Gaza. The more specialised roles of helicopters such as last line close air support, troop movement, logistics and supply are entirely aimed at augmenting the army while adding absolutely nothing to the core mission of undisputed air dominance or power projection. What they do add however is an unnecessary financial and bureaucratic burden – of additional procurements, additional fleets and training, bureaucracies to manage them etc. Unfortunately, in an army-centric system such as India, where sheer numbers add up to a greater say on policy issues, the only function of the IAF's helicopter fleet is a bureaucratic and structural powerplay. In fact one could equally argue that the extensive air transport fleet comprising the An-32, C-130, Il-76 and C-17 are overwhelmingly used to support ground forces rather than the Air Force itself and are hence superfluous.

Unlike the helicopter and transport fleets, pilot training and refuelling are critical to the air forces role of air dominance and power projection. Here too innovative new public-private-partnership (PPP) arrangements being

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implemented by the Royal Air Force hold much promise for India. The first of these is ‘outsourcing’ pilot training. Instead of the Air Force getting involved in a huge complex acquisition procedure, with a large capital outlay and then training up the maintenance crews for these fleets and maintaining a logistics train for them, the air force simply outsources the training to private companies. This means the training costs incurred come under the operational (revenue) portion of the budget, while saving capital for other priorities, with the Air force simply specifying the extent and specific capabilities required of the training. This has the added benefit of utilisation of idle aviation capacity in the country, the expansion of the almost non-existent pilot training infrastructure (which results in a significant expenditure of foreign exchange abroad annually) and creates a larger pool of commonly trained pilots to draw from.

Another interesting template on similar lines is the United Kingdom’s aerial tanker fleet. This involves the leasing of Airbus A330-based tankers for core missions, while the AirTanker Consortium, which owns the aircraft, is required to maintain another set of aircraft that may be operated commercially but remain available to be used by the RAF at short notice during emergency surges. The RAF is responsible for all military missions, while the AirTanker Consortium manages and maintains the aircraft, provides training facilities and provides the non-military personnel required to operate the fleet. The AirTanker Consortium earns extra revenue by using aircraft for commercial operations – mostly providing transport and tanker services to other European countries, but this capacity is diverted to the UK on a priority basis during wartime.

Obviously these are not cut-and-paste templates for the Indian Air Force, but they do hold significant promise. Cumulatively, they would do much to convince the rest of the government that the IAF is a fiscally responsible force that understands operating within budgets and justifies the large capital outlay it requires. However any Air Force is only as good as the men and women in the loop and this will be the major challenge of the next decade.

Human Resources

Perhaps the single most problematic issue in the way of air-centrism in India is the Human Factor. Routine analyses of the annual defence budgets in national dailies tend to see the salary headings as a drain on the budget rather than as an investment. In a sense this is true. If India’s force-on-force approach that prioritises ground forces and requires huge badly trained armies continues, then expenditures on salaries cannot translate into genuine value additions, such as improved training. Worryingly, the caps imposed on human investment impose salaries which are divorced from reality and tend to significantly disadvantage arms of the military that are heavily technology dependent, such as the Air Force.

A simple comparison in this regard would be the difference in salaries between a Bajaj auto rickshaw mechanic, a Suzuki car mechanic, an Audi car mechanic and a Boeing aircraft mechanic. The auto mechanic due to the rudimentary nature of the machine at his disposal does not require much training due

to the rudimentary nature of the machine. A Suzuki car mechanic would require greater training but given the limited electronic functionality and visual diagnostics his or her training would still be rudimentary and unable to command a premium rate. Audi mechanics have to deal with an extremely complex, heavily digitised car. While the car may have an entirely computer driven diagnostics systems, the level of skills the mechanics are required to have span a much broader range of knowledge and require far more in depth studies. Additionally such a mechanic would be required to have critical thinking skills in order to solve malfunctions. All of this requires an Audi mechanic to attend anywhere between 2 to 4 expensive courses every year. The investment in the mechanic, therefore, is high, and the output, skill and technical dexterity expected of him is high and consequently he is able to demand a significantly higher wage. All of this pales in comparison to an aircraft mechanic. The skill sets required are of an altogether greater complexity and the consequences of failure too high to contemplate. Salaries for airline mechanics, therefore tend to be significantly higher than those who service luxury cars.

India suffers from several handicaps on this score. Base salaries are already abysmally low and an accretion of expertise is almost impossible to fund at such levels. Complicating issues is the pay structure within the military, where a tank mechanic with a far less challenging job, would get paid the same as an equivalent ranked fighter plane mechanic. This leads to either of two issues: first where adequately qualified people do not find an Air Force job to worth their while or alternately those available for the job simply do not have the skill sets required for the job with funding for intensive capacity building unavailable.

This situation can be seen to apply almost across the board in the Air Force. It is therefore impossible to think of a true air power evolution in this country, leading to performance levels of first world air forces without matching salaries and a focus on value addition. This is an economic reality, that is impossible to bypass and one that will have to be dealt with. Clearly a graded pay structure for different wings of the military will be deeply demoralising for those left out, and yet not insulating proven war winning capabilities and incentivising them will severely retard any significant progress.

Conclusion

In the current environment and within its limited operational role as a largely constabulary and disaster relief force, the Indian Air Force appears reasonably well-equipped to meet the demands placed on it. However, if one accepts that a revolution in thinking is required with regard to air power, to bring it out of its present slump and to the forefront of Indian warfighting capabilities, the path ahead is arduous. Budgets have been a concern for decades now, and there is no reason a professional force cannot adapt to fiscal realities, instead of constantly and unsuccessfully pushing back against them.

Virtually every prevailing convention will have to be upended or outright discarded, and a comprehensive review of the roles and objectives of the air force, its tactical and strategic doctrines, and its force structure (*in that order*)

will have to take place. 'Business as usual' has brought Indian Air Power to its knees, and is no longer an option.

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The Indian Navy and Future Maritime Operations



ABHIJIT SINGH

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The rise of India as a premier maritime power in the Indian Ocean has been a defining development of the past decade. From ‘reluctant power-player’ to ‘credible security provider’, the transformation of the Indian navy’s (IN) strategic posture in the Indian Ocean Region has been notable. Since the late 1990s, when India first seriously began developing its combat muscle, the navy has invested considerable resource in acquiring top-line maritime assets and capabilities. As its capacity to project power and influence in the regional commons has grown, so has its regional involvement in maritime security – an enterprise that now consist of a wide-array of military, diplomatic, constabulary and benign missions. Consequently, its operational ambit has also widened from India’s near-seas to the distant Indian Ocean littorals.

The surge in maritime capability has come at a time when the Asian commons have been witness to a veritable explosion of non-traditional threats and a growing demand for littoral security. As the most capable maritime agency in the region, the Indian navy has been a natural partner of choice. With a willingness to undertake tasks as diverse as sea-lanes security, fighting pirates, providing humanitarian assistance and even provisioning of essential supplies, the navy has played the role of an effective regional facilitator. Its contribution to local security capacity-building, maritime infrastructure creation and the enhancement of surveillance capability among smaller Indian Ocean states has even served to burnish India’s credentials as a responsible security actor and a force for regional good.

Notwithstanding the IN’s substantive contributions, however, Asia’s maritime environment has continued to remain fickle. With threats constantly morphing to take on more complex forms, regional security efforts have not always produced desired results and collaboration has remained rudimentary. Despite the presence of a large set of irregular challenges and the imperative for regional forces to coordinate their individual efforts, only some states have volunteered forces for a sustained security effort. The problem is accentuated by worsening climate conditions over the Asian seas. Increasingly unpredictable weather patterns have increased the risk of severe climate events, raising fears of a humanitarian crisis. Not many security agencies have been willing to contribute.

Meanwhile, traditional anxieties the region has been on the rise. A drastic increase in foreign warships visiting the Indian Ocean’s littorals has led to an operational overlap between regional and extra-regional navies. In particular, the growing presence of Western and PLA Navy deployments in the IOR, have led to fears of greater

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competition for naval supremacy in the Indian Ocean. Over the past decade, the IOR has seen many Pacific navies getting involved in the anti-piracy effort off-Somalia. Their deployment of high-end naval platforms has only served to engender regional mistrust, leading to a greater rivalry among indigenous and external maritime forces.

The rising complexity of challenges in the maritime domain has led many to speculate that India's naval capabilities may be inadequate to deal with the emerging security dynamic. Notwithstanding its success at meeting many existing challenges, observers surmise, the navy may be unprepared to tackle long-term threats - many with serious implications for regional development. Its commendable achievements in tackling existing threats notwithstanding, there are questions about the changing nature of maritime challenges that the service may soon be forced to consider.

Current trends suggest that maritime-Asia is set for a round of fresh volatility. Rising pressure across Indian Ocean states for new resource avenues and a growing dependence on the Indian Ocean sea-lanes for trade and energy transfer point to the possibility of a renewed strategic struggle. With many extra-regional powers keen to play an active role in securing the oceanic sea-lanes, the region seems set to witness a fresh round of naval posturing and strategic gamesmanship.

Future Operations in the Indian Ocean Region

With security conditions worsening, Indian analysts and security experts are faced with two inquiries concerning future operations: *What are the prospective strategic scenarios that the Indian navy must prepare for? What strategic responses do the possible threats entail?* The Indian navy has performed credibly in its near-seas operations so far, but maritime managers must now reshape the operations template by creating more space for new emerging technologies, strategic platforms and collaborative missions. Indeed, India's maritime specialists are looking closely at five types of maritime undertakings that could represent the future of regional security operations:

(a) **Out-of-Area Contingencies / Humanitarian Operations** – The record of recent contingencies in the Indian Ocean suggests that Humanitarian aid and disaster relief (HADR) will constitute that vast bulk of non-traditional missions in the future. Over the past few years, India has been active in providing humanitarian aid across a vast region, spanning the Indian Ocean Region and even parts of the Pacific. The timely aid provided by Indian naval ships during the Indian Ocean Tsunami (2001), Cyclone Nargis (2008), and more recently cyclone Hudhud (2014), has been widely commended and its efforts to evacuate civilians for troubled hot-spots, such as Libya (2011) and Yemen (2015) have been universally acknowledged. Yet, the scale on which future assistance will be required in the region might overwhelm naval planners.

During typhoon Haiyan and the Japanese tsunami the full force of the Philippines navy and Japanese navy was mobilised to provide humanitarian assistance. Even so, it was only after the US Navy pitched in assistance by

delivering food, water, medicine, and shelter that the adversity was finally overcome. Future HADR missions will be carried out in an environment of uncertainty with lesser resources available to provide necessary aid. In such circumstances, maritime forces will need a coordinated plan for maximum effectiveness. Developing joint procedures and protocols for carrying out coordinated humanitarian operations constitutes the next big challenge for regional navies.

(b) **Littoral Operations.** The littoral is that portion of the Ocean that lies between coastal zones and open-seas. It is also the space where most power-projection activity seems to take place. The future operating environment for the naval service is likely to demand sustained presence and precision effects in a complex, congested and contested world. The focus of these activities will increasingly be in the densely populated littorals.

Littoral warfare has much in common with war conducted on the open ocean. But here are also significant differences, due to the extremely complex, dynamic, and challenging physical environment of the former. Littoral warfare requires the closest cooperation among the services and a blue-print for coordinated operations.¹ As opposed to war in the open ocean – where strategic action plays an important role – the most effective form of naval employment in the littorals is tactical presence. Naval missions in the littorals range from forward positioning of forces to naval expeditionary deployment for power projection ashore. This includes sustained amphibious operations and land-attack capability. The Indian navy presently lacks the ability to carry out an effective littoral campaign. Several deficiencies limit the scale and scope of its war-fighting effectiveness in the South-Asian littoral spaces. To correct these deficiencies, the Navy will need to introduce changes to its training and education program, acquire land-attack and precision strike weaponry, and improve support infrastructure where necessary.

(b) **Submarine Operations.** In the new era, submarine operations are likely to get increasingly sophisticated. While nuclear submarines SSN's will continue to pose a threat, use of quiet and stealthy diesel-electric subs will rise. The latter have been going high-tech with the inclusion of equipment such as lithium-ion batteries and fuel cells. These turn stored hydrogen and oxygen into power enabling designs that are quieter than nuclear submarines, and which require noise-emitting pumps to cool reactors. The new conventional subs can stay underwater far longer than older versions and are more effective combat platforms.

Significantly, the Asian maritime space is witnessing a resurgence in undersea capability, with an increasing militarisation of the Pacific with more submarines. In a bid to counter China's undersea activities in the Western Pacific, Taiwan, Japan, Vietnam and Australia have moved to acquire submarine forces. But the PLAN has also been active in the Indian Ocean with increased submarine deployments. It is Beijing's offer of the Yuan class submarine to Pakistan, however, that appears to have created the biggest imperative for India to strengthen its submarine arm. What makes undersea capability a critical area of attention is the fact that the IN is running critically short of submarines, with its Project 75 program interminably delayed.

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Meanwhile, improvements in sub technology are spurring advances in sub hunting. New detection technologies, such as low-frequency sonar and flashing LEDs are making submarines much easier to detect. India's recent deployment of the P8I anti-submarine aircraft at the Andaman Islands to search for Chinese submarines is indicative of the growing importance of ASW technologies. Since new non-nuclear subs are hard to detect, the future might see a large investments in anti-submarine surveillance capability.

(c) **Autonomous Vehicle Operations.** The future will witness the increased usage of autonomous operations in support of naval warfare. For some time navies around the world have been employing UAVs to augment the effectiveness of maritime operations. But many advanced nations are now exploring the possibility of a "UAV swarm attack".² Along with the proliferation of aerial drone technology in recent years, subsurface unmanned systems too are being increasingly used. Russia's revelation last year that it was planning to deploy an underwater unmanned drone capable of being used as a nuclear device, led to hectic speculation of the imminent deployment of such devices. The Moscow, Russia's latest submarine is a refurbished, 1980s ballistic-missile that plays supposedly plays the role of a science vessel, a spy ship, a commando transport platform, and a "mother-ship" for mini-subs and drones.³

Meanwhile, the US is said to be developing technology that can track quiet diesel-electric submarines. A future fleet of US underwater drones will supposedly have the capacity to monitor vast parts of the ocean. The US navy already possesses the most technologically advanced special-mission subs, including UUV's deployed from the Virginia Class attack submarines and the mysterious USS Jimmy Carter, a one-of-a-kind version of the Seawolf class of attack Virginia-class attack submarine with a floodable chamber that allows divers and undersea drones to exit and re-enter the sub while the ship is submerged. With China responding with its own plans to develop unmanned systems, India might have to ponder the strategic implications of such operations.⁴

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(c) **Expeditionary Missions.** Marine expeditionary operations are the future of naval warfare. In the Asia Pacific region a number of countries have moved to raise marine forces. These include Malaysia, Indonesia, Japan and Philippines.⁵ From India's perspective, however, none is more consequential than China. The PLA's recent structural reform includes efforts to modernize the PLA Marine Corps which has modelled itself on the US Navy. Apart from carrying out amphibious raids in the Western Pacific, the PLAMF will also providethe Chinese political leadership with another flexible tool for responding to contingencies in China's immediate and expended neighbourhood.

Indian analysts noted China first-ever joint amphibious landing exercise with Russia last year, in which armoured vehicles and troops landed directly into an overseas exercise area after a long-distance voyage.⁶ The exercise showcased the capability of the Type-071 landing platform dock *Changbaishan* – a ship increasingly deployed to the Indian Ocean for anti-piracy missions. For many, the exercise reflected the PLAN's desire for power projection in distant theatres.

The exercise was also significant because it highlighted the importance of integrated military operations. Many of China's new amphibious platforms are custom built for joint operations. This includes future LHA-type vessels with the capacity to carry army combat vehicles, and large helicopters. Apart from vertical take-off and landing (VTOL) fighters and helicopters, it will be able to launch air-cushion landing craft and amphibious assault vehicles.

Unfortunately, India has not been able to make the large investments in various facets of capacity-building to develop a serious expeditionary capability. A lack of sealift, mobility and firepower, precludes long-distance Indian expeditionary missions in the Indo-Pacific region. Even so, Indian maritime planners are aware of the importance of Amphibious Ready Groups (ARGs) and Expeditionary Strike Groups (ESGs) in projecting power across the Indian Ocean – a reason why the Indian navy has moved to acquire large amphibious platforms. These should expand the IN's deployment options, not least because they can also be used in benign and humanitarian contingencies.

(d) **Networked Operations (NCO).** Navies today operate in a network centric environment where all maritime operations are integrated. The development of drones, satellite surveillance, new precision weapons, launch platforms, and deployment concepts has been central to network-centricity and modern maritime operations. Modern maritime forces are factoring in these operations increasingly in their operational contingency plans. China's defence white paper highlights the importance of networked missions. Even Japan and the US have included long-distance communications and integrated operations in their maritime doctrines.

Since August 2013, when India launched the GSAT-7, its first dedicated military satellite, the Indian navy has had an exclusive safe and reliable communication channel.⁷ With its 2000 nautical miles footprint over the Indian Ocean Region (IOR), GSAT -7 has helped the IN network its warships, submarines and aircraft along with its ground based resources and assets. The new satellite has helped link long range missiles, radars and air defence systems on all sea-based assets. Despite serving as an effective "force multiplier", however, the GSAT-7 has yet to fully integrate inter-services communications. While much emphasis has been given to superior technology and investment, the IN has yet to develop an operational doctrine, technical standardisation and sustained logistical support that enable effective inter-services and multilateral networked operations.

A Template for Future Operations

The Indian navy has sought to address some of these concerns in its recent maritime strategic guidance document, released on October 2015.⁸ The new maritime strategy discusses various threat scenarios and offers a window into the leadership's vision for future maritime deployments. It also recognized the key drivers underpinning the navy's maritime posture, identifying conditions that characterize the navy's new operational environment. Its characterisation of future maritime challenges as being 'hybrid' in nature, with a blurring of lines separating traditional and non-traditional threats, suggests that the future is likely to witness a more holistic integration of maritime assets.

Despite serving as an effective "force multiplier", however, the GSAT-7 has yet to fully integrate inter-services communications. While much emphasis has been given to superior technology and investment, the IN has yet to develop an operational doctrine, technical standardisation and sustained logistical support that enable effective inter-services and multilateral networked operations.

While the new maritime strategy enjoins the Indian navy to maintain a pervasive presence in the Indian Ocean, the IN acknowledges the fact that it cannot perform the task alone and will need working relationships in the Asian littorals and an environment of mutual respect. In taking on the many challenges in India's maritime neighbourhood, it will need to take into consideration the evolving nature of maritime operations.

Notwithstanding the importance of benign and constabulary missions, however, traditional security is likely to constitute a key element of future maritime operations, drawing increasing resources and attention. Increasing geo-political mistrust and strategic anxiety in maritime-Asia might require the Indian navy to maintain a strong traditional posture. The challenge for India, therefore, will be to ensure that irregular challenges are not the sole focus-area in the future force planning process. The Indian navy will need to imbibe technology, know-how and tactics appropriate to the changing texture of security in maritime Asia, prioritising India's long-term permanent interests in the IOR.

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Indian Army: Force Structures and Capability Requirements



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Is the Indian Army a battle-ready force today, and is it on track to be a high-tech army in 2022, capable of applying enhanced military force by synergising battlefield transparency, automated decision-making, and precision weaponry? The answer to that would be determined by the way policy-makers in New Delhi handle a range of decisions on threat doctrine, force structuring, equipment acquisition, and the finance needed to transform a relatively low-tech, manpower-intensive army into a lean, light and lethal combat force.

Who is the Adversary?

India's military does its operational planning and structures its forces to cater for the eventuality of a "two-and-a-half-front war" – a campaign against China and Pakistan acting in concert, while also combating internal insurgencies, especially escalated activity by militant groups in Jammu & Kashmir (J&K). It is not clear why this is so. Through several wars that India has fought – the 1947-48 Kashmir war against Pakistan; the 1962 war with China; the 1965 and 1971 wars with Pakistan and the limited campaign to evict Pakistani intruders across the Line of Control (LoC) in Kargil in 1999 – New Delhi has never encountered meaningful operational coordination between Pakistan and China. Nor has such coordination been evident in a range of crises over the years – the 1967 border clash in Nathu La, Sikkim between Indian and Chinese troops; India's massive troop mobilization in Arunachal Pradesh in 1986 after Chinese troops occupied the disputed Sumdorong Chu/Thangdrong area; the 1987 face-off when India's military mobilization, evoked a matching Pakistani mobilization and weeks of eyeball-to-eyeball confrontation; the Indo-Pakistan crisis of 1990 that was defused after Robert Gates, then a senior US official, rushed to New Delhi and Islamabad; the near war in 2001-2002, when the Indian military took up battle stations after Pakistani-backed terrorists attacked India's parliament building in New Delhi; and even after the 26/11 Mumbai terror attacks in 2008.

Yet, a "two-and-a-half-front war" remains the ambitious basis of India's military planning. Until the middle of the last decade, India's military had viewed its role vis-à-vis Pakistan quite differently from that against China, aiming to establish "deterrence" against Pakistan, and "dissuasion" against China. To deter Pakistan from using radicalized Islamist extremists – "strategic assets" in the Pakistani strategic discourse – for terror attacks on Indian soil, the Indian military created the realistic possibility of a military riposte that could take multiple forms, including that of a full scale war. Simultaneously New Delhi aimed at dissuading Beijing from

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entering the fray on behalf of Pakistan by raising the cost of Chinese military intervention to the point where it would outweigh the benefits for Beijing.

However, the notion of an offensive strategy against Pakistan, and a defensive one against China, tended to equate India with Pakistan at a time when New Delhi was working diplomatically to dispel that historical “hyphenation”. More flattering to India’s vanity was a strategic construct that featured China as the main threat and Pakistan as its “bad guy” sidekick. The idea of India as a liberal, democratic, reliable frontline state that was tangibly threatened by an aggressive China also segued conveniently into New Delhi’s strategic positioning as a regional balancer to Beijing, reinforcing the attentions of the United States and its Pacific allies like Japan and Australia. Further, New Delhi new assertiveness with Beijing would also embolden smaller Asia-Pacific countries like Vietnam and the Philippines, which perceived a common threat from a hegemonistic China, but had always found India unwilling to confront China robustly.

Furthermore, the Indian military’s interest in increasing its own size was well served by talking up the need for a stronger and more aggressive posture vis-à-vis China. With nine army corps, consisting of 25 divisions (including three armoured divisions), already deployed on the Pakistan front, there was little scope for adding to that. In contrast, the border with China was defended until the mid-2000s by only three corps headquarters (and a fourth in Ladakh with responsibility divided between the Pakistan and the China fronts), which between them had just eight divisions – barely one-third the size of the forces arrayed against Pakistan. Thus, the military could more credibly argue that holding off China needed more resources, especially in the context of a major drive at the time – personally steered by then foreign secretary, Shyam Saran – to build a network of roads and tracks connecting the border areas with the hinterland. The army argued that this proposed network of “strategic roads” provided convenient invasion routes to Chinese forces, and that additional troops were needed to guard these approaches.

The Casus Belli

Starting from the early 2000s, the Indian military brass marshalled three scenarios in which China could initiate large-scale armed hostilities with India with an opportunistic Pakistan escalating this into a two-front war. The first contingency was an unintended flare-up, possibly stemming from a patrol confrontation on the Line of Actual Control (LAC) – as the de facto Sino-Indian border is called – of the kind that took place in April-May 2013 when Chinese border guards set up camp for almost three weeks at the disputed Dapsang area in Ladakh; or a subsequent incursion in September 2014 into the disputed Chumar sector, also in Ladakh. Both those incidents were peacefully resolved through diplomatic and military talks, but Indian generals say the growing depth of Chinese incursions, and the increased aggression of Chinese troops, are worrying. Adding to the likelihood of escalation is a growing border population in formerly uninhabited areas, which has led to greater media attention. This complicates the resolution of patrol confrontations and intrusions, which the media quickly colours with nationalist sentiment.

The military's second anticipated scenario for a Sino-Indian face-off stems from China's growing presence in Gilgit-Baltistan, in Pakistan Occupied Kashmir (POK). Since 1963, when Pakistan conditionally ceded 5,000 square kilometres of POK territory to China, the J&K question was "trilateralised", but only notionally. Now, the proposal to create a China-Pakistan Economic Corridor (CPEC), running from Xinjiang, through POK, to Pakistan's Gwadar port in Baluchistan, has brought a core Chinese strategic interest at loggerheads with a core Indian one. Indian planners also believe that Islamabad would actively engage in "intelligent orchestration" to trigger a confrontation between India and China over POK.

Thirdly, drawing on history, the generals have argued that a great power transition is underway, and that a resurgent China might be tempted to demonstrate its power by triggering a war to slap down India. Indian analysts have argued that, in 16 great power transitions over the preceding five centuries, only four have been peaceful. Says Lt Gen Vinod Bhatia, a former military operations chief who now heads the army's think tank, Centre for Land Warfare Studies (CLAWS): "Let us not read too much into this, but let us also not read too little. In the Victory Day Parade on 3rd September 2015, China showcased 500 military pieces, of which 84 per cent were being displayed for the first time. These, along with China's current military reforms, will lead to a formidable combat capability."

Current Military Profile

With this backdrop, a "two-and-a-half-front war" has become the basis of Indian planning over the preceding two decades, greatly complicating New Delhi's military calculus and adding to the need for more forces. The army is adding four new divisions, with some 80,000-100,000 soldiers, to reinforce the eight divisions that earlier defended the Sino-Indian border. Two armoured brigades, with more than 500 T-72 tanks and BMP-IIs (Infantry fighting vehicles) are being deployed close to the LAC, one in Ladakh and the other in the north-east.

In Assam, the Indian Air Force (IAF) has beefed up Tezpur and Chhabua air bases with Sukhoi-30MKI fighters and plans to base more in Hashimara. Upgrades are under way at five more air bases in the north-east, and a string of advanced landing grounds (called ALGs) that would allow big helicopters, light fixed wing aircraft and unmanned aerial vehicles (UAVs, or drones) to operate along the McMahon Line, which forms the LAC in the Eastern Himalayas. In Ladakh, the Nyoma and Kargil airfields are being upgraded.

This beefing up of the LAC, however, overlooks the reality that there are major differences – both qualitative and quantitative – between the Pakistan and China threats. Pakistan is an irredentist power that seeks to change the status quo in J&K. Indian public perceptions of that country are impregnated with an animus that far exceeds any bitterness that China evokes. Pakistan deploys a pro-active armed strategy around the year to needle India at the sub-conventional level, under the cover of a nuclear arsenal that deters an Indian conventional military response. The year-round infiltration of terrorists and militants from Pakistan into J&K seriously destabilises the 776-kilometre

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Line of Control (LoC), despite a cease-fire having nominally existed since 2003.

In comparison, the Sino-Indian border enjoys relative peace. “Patrol incursions” that take place periodically are resolved peaceably, under the rubric of “Five Principles, Five Agreements”. The Panchsheel doctrine of 1954 provides the five principles of mutual non-interference, while the five agreements refer to a series of confidence building measures (CBMs), refined and tested over two decades. These include the September 7th, 1993 *Agreement On The Maintenance Of Peace And Tranquillity Along The Line Of Actual Control*; the November 29th, 1996 agreement on *Confidence-Building Measures in The Military Field Along The Line Of Actual Control In The India-China Border Areas*; the April 11th, 2005 protocol on *Modalities for the Implementation of Confidence Building Measures in the Military Field Along the Line of Actual Control*; the January 17th, 2012 *Working Mechanism for Consultation and Coordination on India-China Border Affairs*; and the October 23rd, 2013 *Border Defence Cooperation Agreement*.

Manpower Projections

Even so, the doctrinal reference for India’s military preparedness is now a two-and-a-half-front threat. This has had, and will continue to have, enormous implications for India’s military planning, force structuring, equipment procurement and modernisation.

Most immediately, this has created for India the manpower burden of one-and-a-half million soldiers, sailors and airmen, for whom the payroll will exceed Rs 110,000 crore in 2016-17 when the government implements the 7th Central Pay Commission. Meanwhile the pension bill, which is inexplicably not reflected in the defence allocations, will exceed Rs 65,000 crore. The implementation of One Rank, One Pension will raise that each year, in tandem with pay rises that are linked with the inflation index. Given this growing manpower bill, urgently needed equipment modernisation will need a significant rise in the overall defence spending, which currently consists of 13.85 per cent government spending and 1.75 per cent of the Gross Domestic Product (GDP).

While this seems not to worry the military brass, it evidently concerns the political leadership. On December 15, 2015, Prime Minister Narendra Modi told the top commanders of the army, navy and air force in a high-level meeting on board the aircraft carrier, INS Vikramaditya: “At a time when major powers are reducing their forces and rely more on technology, we are still constantly seeking to expand the size of our forces. Modernisation and expansion of forces at the same time is a difficult and unnecessary goal.”

Driving home his point, Mr Modi said: “(W)e look to our Armed Forces to prepare for the future. And, it cannot be achieved by doing more of the same, or preparing perspective plans based on out-dated doctrines and disconnected from financial realities... (O)ur forces and our government need to do more to reform their beliefs, doctrines, objectives and strategies.”

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Even before the prime minister weighed in, strategists and commentators have urged the military to cut manpower. Bharat Karnad and this author have urged the government not to raise a proposed mountain strike corps (MSC) for the Himalayan border as a brand new formation, but instead convert one of the three mechanised strike corps to a mountain role. The Ajay Vikram Singh Committee report, echoing others before it, recommended that soldiers be enrolled for shorter service tenures, and then discharged without the liability of pension for a lifetime. However, little has been done on the crucial issue of manpower reform. Consequently, in a country where manpower is cheap and equipment costly (being mostly imported), the military spends significantly more on manpower than it does on equipment.

Capital Projections

What does this mean for equipment modernization in a military where the arsenal features numerous platforms that are nearing the end of their service lives; and, has resulted in equipment voids in many critical areas? The army's mountain infantry formations make do without dated, unreliable artillery, even though fire support determines defeat and victory in mountain warfare.

The army's mountain infantry formations make do without dated, unreliable artillery, even though fire support determines defeat and victory in mountain warfare.

	2014-15 (BE)	2014-15 (RE)	2015-16 (BE)	2016-17 (projected)
Revenue budget				
Salary payroll	83581	86574	93216	111860*
Other revenue expenditure	50831	53831	58923	67761 **
Total Revenue allocation	134412	140405	152139	179621
Capital budget				
Army	20630	16868	21574	39713
Navy	22312	17471	23911	53591
IAF	31818	31818	31481	48741
Defence R&D Org	9298	7148	7788	11682
Other heads	10530	8660	9834	9834
Total Capital allocation	94588	81965	94588	163561
Total budget allocation	229000	222370	246727	343182
Total government spending	1794892	1681158	1777477	1884125@
Gross domestic production	12876653	12653762	14108945	15167116 #
% of total spending	12.75%	13.25%	13.85%	18.25%
% of GDP	1.78%	1.76%	1.75%	2.25%

* Estimating salary increase of 20 per cent across the board

** Non-salary expenditure increase of 15 per cent

@ Estimated govt spending rise 6 per cent, against 5.5 per cent in 2015-16

Estimated GDP rise by 7.5 per cent, against 11.5 per cent in 2015-16

The navy is well short of its stated requirement of 160 capital warships, and vessels being commissioned lack helicopters, torpedoes, sonar equipment and air defence systems, making them vulnerable to enemy submarines, aircraft and anti-ship missiles. The air force urgently needs force multipliers like aerial refuelling tankers and airborne early warning and control systems; and its MiG-21 and MiG-27 fleets are retiring without any fighter to replace them. With revenue costs like the payroll consuming more than half the defence budget, and much of the capital allocation going towards annual instalments on equipment bought earlier, there is little left for new purchases.

The army must expedite the already sanctioned acquisition of artillery gun systems, air defence systems, new-generation personal weapons and battlefield communication systems. As enumerated in the chart, this adds up to the immediate acquisition of ground forces equipment worth Rs 1,81,450 crore (\$26.9 billion). Assuming (again conservatively) that each of these acquisitions are paid for in ten equal annual instalments, the capital allocation for 2016-17 would need to budget for Rs 18,145 crore – over and above the Rs 21,574 crore committed last year, which would barely cover the “committed liabilities”, or instalments already due. That would take up the army’s capital allocation to Rs 39,713 crore (\$5.9 billion).

Calculating similarly for the navy, there are urgent procurements in the pipeline for submarines, stealth frigates, logistic support vessels, anti-submarine and counter-mine vessels and, crucially, ship-borne helicopters. This adds up to Rs 2,96,800 crore (\$44 billion), of which one-tenth must be provisioned

Urgent new acquisitions (in Rs crore)

Weapon/system	Cost
Navy acquisitions	
Six conventional submarines (Project 75 I)	60000
Lease of second nuclear sub from Russia	5400
Seven stealth frigates (Project 17A)	45400
Six fleet support ships	24000
150 naval utility helicopters	15000
139 naval multi-role helicopters	60000
4 Boeing P8-I maritime aircraft	7000
4-6 landing platform docks	16000
24 mine counter measure vessels	36000
2 midget submarines for special operations	2000
Refit of 10 submarines	10000
16 anti-sub shallow water craft	16000
Total new Navy acquisitions	2,96,800

Air Force acquisitions	Cost
36 Rafale medium fighter	63000
125 Jaguar re-engining and upgrade	20000
Indo-Russian fifth generation fighter	25000
56 Avro aircraft replacement aircraft	15000
20 Hawk advanced jet trainers	2000
22 Apache AH-64E attack helicopters	8500
15 Chinook CH-47F heavy lift helicopters	6600
384 Light Utility Helicopters (LuH)	13500
Surface-to-air missiles	30000
Total new Air Force acquisitions	1,72,600

Army acquisitions	Cost
Artillery gun procurements (sanctioned)	28450
2 regiments Pinaka rocket launchers	5000
Short and medium range surface-to-air missiles	30000
Short range surface-to-air missiles	30000
Tactical Communications System (Make project)	20000
Battlefield Management System (Make project)	50000
Rifles, carbines, machine guns and sights	12000
Unmanned Aerial Vehicles	6000
Total new army acquisitions	1,81,450
New acquisitions (all three services)	6,50,850

for in this budget. After catering for committed liabilities, the navy's capital allocation needs to rise this year to Rs 53,591 crore (\$8 billion).

The air force, meanwhile, seeks to conclude contracts for the exorbitantly priced Rafale fighter, to extend the Jaguar fighter's service life, to start co-developing a fifth-generation fighter with Russia, and to procure a range of helicopters. Contracts worth Rs 1,72,600 crore (\$25.5 billion) require immediately conclusion, needing the allocation of Rs 17,260 crore in 2016-17, over and above what was committed last year. That takes the air force's capital allocation to Rs 48,741 crore (\$7.2 billion).

This necessarily incomplete calculation would raise the 2016-17 capital allocation to Rs 1,63,561 crore (\$24.2 billion), still somewhat less than the revenue allocation. This would require the defence budget to be boosted by almost 40 per cent – from Rs 2,46,727 crore (\$36.5 billion) in the current year, to Rs 3,43,182 crore (\$50.8 billion) in 2016-17. This would raise the

defence allocation to 18.25 per cent of the government's spending in 2016-17, from 13.85 per cent in the current year. As a percentage of the gross national product (GDP), this would raise India's defence spending from 1.75 to 2.25 per cent of GDP.

Prognosis

Building a battle-ready military by 2022 would require not just a dramatically higher defence outlay, but also several other equities that have been in short supply. They include political will; strategic vision; administrative acumen, especially in the realm of equipment procurement, and industrial mobilisation. Without these, the Indian military, especially the army, remains on track in being a mid-20th century manpower-intensive, low-technology force that is useful mainly for policing the border and in counter-insurgency operations in J&K and the north-east. But the military would take cruel casualties in modern warfare against an adversary that understands the advantages of battlefield transparency, rapid inter-theatre mobility and precision firepower. The military needs to go back to the drawing board and rethink its manpower and equipment policies afresh.

Women in the Indian Armed Forces



VIDISHA MISHRA

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Although women officers continue to make up for a miniscule proportion of the Indian armed forces, the last decade has witnessed gradual yet irreversible progress. As of now, women comprise of just over 2.5% of India's million plus armed personnel.¹ But last year, the Indian air force approved the induction of women into their combat stream – aiming for India to have its first female fighter pilots by 2017. This change in India's formerly impenetrable combat exclusion policy has intensified the debate over greater inclusion of women in the army and the navy.

Moreover, women officers are attempting to dent the “brass ceiling” at another, more basic level - by fighting for Permanent Commission. The last few years have proved to be momentous on this front.

Women officers were first inducted by the Parliament in 1992 as Short Service Commission (SSC) - where the terms of engagement evolved from the initial 5 years, to 10 years with the option to extend the period for another 4 years (10+4). According to statistics from the Ministry of Defence², there are 1412 women officers in the Army, 1128 officers in the Air Force, and 418 officers in the Navy on short service commission. It was only in 2008 that they were granted Permanent Commission in a limited number of non-combat roles such as the Army Education Corps (AEC) and Judge Advocate General (JAG), the corresponding education and law branches in the navy and the air force as well as the accounts branch of the air force, and the air traffic controller roles in the navy.³

However, due to the very marginal increase in vacancies, women officers moved the Delhi High Court in 2010 which ruled in their favour granting them the right to permanent commission which would translate into full service tenure of 20 years leading to greater opportunities of leadership, and eligibility for pension and other benefits.

While the air force accepted the ruling, the army and the navy appealed to the Supreme Court which admitted the appeal but did not put a stay on the order. Consequently, since then, 64 women in the army, and 351 women in the air force, have received permanent commission.⁴

The navy on the other hand, continues to resist the inevitable change. In 2015 the Delhi High Court again ruled in favour of the women naval officers. The navy, which still bans women on ships, challenged the ruling

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in the Supreme Court. In a decisive move, the Supreme Court stayed the Delhi High Court order allowing women, serving as short service commission officers, to get permanent commission.⁵

As India moves towards the 75th year of its independence in 2022, it is essential to assess the current debates and move forward with a comprehensive and sustainable strategy that does not neglect the aspirations, and under-utilise the potential, of half of the country's population. First, according to the Ministry of Defence, the Indian armed forces are short of over 52,000 personnel and 11,000 officers.⁶ Various measures are being taken to rectify this, including improvements in the pay scale. Indian armed forces recruit women only in the officer rank – it is worth assessing why concerted efforts should not be made to induct more women Personnel below Officer Rank (PBOR).

Second, culturally, defence is still considered to be a male bastion in India. The fact that permanent commission is a struggle for our equally brave, well-trained and efficient women officers - demonstrates why most women cannot think of a career in defence as a viable choice. Debates about women in armed forces tend to draw on the demerits of women in combat; it must be acknowledged that female officers continue to face barriers in non-combat roles too.

For instance, women are still not permitted to be helicopter pilots in the Indian army whereas they have been flying for years now in the air force. The argument that is often made is that if a woman gets captured during war, it would demoralise the troops. It must be realised that this argument is simply rooted in the outdated notion of women being the bearers of "honour." A male officer as a POW is not necessarily more comforting than a female officer as a POW. Further, in a country where civilian women brave sexual violence in every-day life, this is a flimsy argument to keep them out of service.

Moreover, arguments against women combatants in the army may hold some validity, but battles are becoming more technologically advanced with sophisticated non-contact standoff operations. In this context, there is no reason why women cannot perform as well as their male counterparts.

Third, in the next few years, the experience of India's first women fighter pilots will shape the discourse significantly. As things stand at the moment, these combat pilots – will still only be allowed to serve as SSC officers. In the long-term, it may not be sustainable for the IAF to invest in training women fighter pilots only to let them go in 14 years.⁷

While all relevant debates must prioritise what is best for the efficiency of the armed forces, arguments for restricting the entry of women must not be based on the fact that it is unprecedented and/or may be uncomfortable. Signalling changes for the better on this front, President Pranab Mukherjee recently stated in the Parliament that Indian armed forces will soon recruit women for all combat roles in the forces.⁸

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Building India's Way to a "Leading Power"



DINAKAR PERI

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Speaking at the International Fleet Review 2016 in the gateway city of Visakhapatnam on February 7, 2016 Prime Minister Narendra Modi observed that oceans are critical for global energy security and thus he emphasised, "The Indian Ocean Region (IOR) is one of my foremost policy priorities." In that one statement Mr. Modi enunciated India's geopolitical priorities and outlined India's zone of concern on the global canvas.

Now how does the country translate this into reality? There are several pieces in the jigsaw and one of the most critical is military preparedness. Among that defence procurements and big ticket purchases usually grab headlines and there is ample scrutiny while infrastructure, upon which the entire force structure is based, generally takes a side seat. An India aspiring to be a "leading power" has to create the necessary infrastructure both within and outside the country to project its power and protect its interests in its sphere of influence. The sphere is one in which India would like to exert its influence to further its national interests but at the same time events in the sphere can influence India if something inimical were to happen. So having the capability to influence and also intervene if need be is a prerequisite.

There are two aspects to infrastructure development – within and outside the country. Within our borders the need is to augment the critical infrastructure especially roads, air bases and Advanced Landing Grounds (ALG). The litmus test for India's policy and ensuring energy security will depend how quickly we can secure assets in the region.

Infrastructure bottlenecks continue to be India's Achilles heel on the Eastern borders and unless proactive measures are taken that is going to extend across the Indian Ocean region (IOR). On the other hand India's nearest competitor China has already built elaborate infrastructure in Tibet and is now aggressively creating facilities in the region through its One Belt One Road initiative and the maritime silk route and in the process drastically reducing its dependency on shipping lanes of the IOR.

The government under Prime Minister Modi has initiated a series of moves in both directions -- developing border roads and deepening military cooperation of which military diplomacy has become a major tool. But India has a poor track record of successfully converting the opportunities in hand. This needs a major course correction at all levels as the opportunity cost of not acting will be too high. Plans have now have been

chalked out for quick execution of various critical projects. If they materialise as planned, they should be in place by the time India celebrates 75 years of independence giving a major fillip to infrastructure which can act as a springboard for further expansion.

The next 5-10 years will be critical in overcoming the short comings and creating partnerships across the region to counter China's "string of pearls" – a term coined by the US based Think Tank, Booz Allen Hamilton, in 2005.¹ Failure to do so will be an opportunity loss as the space will be quickly filled by China leaving no room for India. One should bear in mind that both countries are largely vying for the same set of limited spaces for foothold in the region. India probably has some leverage in terms of its soft power and greater acceptance among the Indian Ocean littoral states than China, which is viewed with some degree of suspicion. But speed is of the essence in converting the goodwill into strategic footholds.

Infrastructure Within

Within the country aside the critical need for border roads there are issues to be addressed like air fields, army infrastructure, upgrading repair depots and so on.

In this segment the biggest concern remains border roads which have been neglected for decades. The government has sanctioned a new strike corps comprising of 35,000 men at a cost of over Rs. 60,000 crore to be based in Panagarh and dedicated for the Eastern sector to halt any Chinese advances.

Army Chief General Dalbir Singh recently said that the process under way to realise it by 2021. "A target was kept of nine years and we are on target to raise it by 2021," he said recently.

The Cabinet Committee on Security approved the raising in September 2013 and the process began in January 2014 by drawing personnel from existing units. Along with recruiting more, new procurements this will also need building additional infrastructure to house the corps. As on date the process seems on course but it raises another questions. While there are more men, how are they expected to reach the border when the roads are not there or nearly non-existent?

Border Roads

The Border Roads Organisation (BRO) tasked with building and maintaining border roads has itself traditionally been the biggest stumbling block in building those roads plagued by inefficiency and lack of accountability and transparency. This seems to be changing though still not at a desired pace.

In a belated but welcome move Defence Minister ManoharParrikar decided to bring the Border Roads Organisation (BRO) under the direct control of the defence ministry. Earlier it was under the joint control of defence and surface transport ministries due to which "they answered to neither".

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In a written reply in the Parliament on December 18, 2015, Defence Minister Manohar Parrikar said that the government had taken note of China's infrastructures along the border and with that in mind has "prepared a holistic and comprehensive plan to develop and upgrade infrastructure along the Indo-China border to meet the operational requirement of defence forces".

Seventy three roads have been identified as strategic Indo-China Border Roads (ICBR), out of which 61 roads have been entrusted to BRO with a length of 3417 kms. Out of 61 ICBRs with BRO, 21 roads of length 661.6 km have been completed, he said.

Meanwhile the Ministry of Home Affairs has approved construction and up-gradation of strategic roads on the Indo-Nepal border after consulting the respective state governments. This consists of 1377 km of strategic roads in the States of Uttarakhand (173 km), Uttar Pradesh (640 km) and Bihar (564 km). To accelerate the process the land required for construction of the roads will be acquired by the state governments.

Further, three roads of total length 202.65 km namely Pithoragarh-Tawaghat, Tawaghat-Ghatibagarh, and Ghatibagarh-Lipulekh are entrusted to BRO for development in the State of Uttarakhand nearer to Indo-Nepal border, the government informed Parliament late last year. In this case 282 hectares of land, both public and private, has already been acquired and transferred to BRO considerably speeding up the process.

On the time frame for the project, Minister of State for Defence Rao Inderjit Singh said that road projects along China border would be completed by 2018 which is an ambitious target.²

Advanced Landing Grounds (ALG)

The Indian Air Force has taken up a major program to active ALGs along the Eastern sector and similar plans are in the works for the Western border as well. These will be crucial in rapidly inducting troops in forward areas in the event of a standoff while larger formations mobilise at a slower pace. They also provide a base for fighter aircraft flying from the hinterland to refuel and strike deep inside Tibet or Pakistan Occupied Kashmir (POK).

In August 2013 the IAF landed a C-130J Super Hercules on the freshly activated air strip at Daulet Beg Oldie and since then things have moved forward after some delays. Work on other ALGs too got a push after massive construction work on the Chinese side. So far seven ALGs have been operationalized in Arunachal Pradesh under a Rs. 720 crore project significantly reducing the response time to transgressions in light of the non-existent road network.

Senior IAF officials had said that except Tawang all other seven ALGs were ready. The latest one to be activated was Walong in addition to Mechuka, Vijaynagar, Tuting, Passighat, Ziro and Aalo. The added feature is that can handle operations at night and are also expected to be permitted for civilian use boosting connectivity.

Seventy three roads have been identified as strategic Indo-China Border Roads (ICBR), out of which 61 roads have been entrusted to BRO with a length of 3417 kms.

In Ladakh while there is one ALG at Daulat Beg Oldie preparations are underway for one at Nyoma. The airfield in Kargil is also to be extended to enable fighter operations. These projects should materialise in the few years and will defiantly reduce reaction time of the forces.

Securing Military Installations

In the aftermath of the terror attack on Pathankot Air Force station, which is the latest in a series of attacks on military installations, there is a new challenge in the form of terrorists to the security of military installations across the country. While building new ones is important, protecting existing assets is paramount.

While investigation is underway to determine how terrorists managed to breach a highly secured air base, measures need to be undertaken to prevent a repeat of Pathankot.

Following the reports of the security audit ordered after the incident to identify loopholes in military bases, the IAF has fast tracked the programs underway to augment perimeter security. Earlier these were being undertaken in phases due to “financial constraints” but after Pathankot, a senior official said, “We are now fast tracking the process in one go.”

As part of the process perimeter security is being beefed up on a priority basis and procurement of equipment will be fast tracked. These include smart fences, perimeter installation detection systems, video motion detection systems, thermal cameras and quad copter drones at an estimated cost of Rs. 100-150 crore per base. All 54 major bases are to be taken up in one go in the first phase. The government has in principle approved the purchases and the process should be completed in about five years’ time.

The IAF already has the Modernisation of Air Field Infrastructure (MAFI) underway under which all air bases across the country are to be upgraded to handle all kinds of aircraft in the inventory in all weather conditions. This is significant as the Air Force operates a diverse range of aircraft of domestic, Russian, Western and Israeli origin and it is likely to grow with the deals currently underway for helicopter and fighter aircraft.

Further implication of this is that it will reduce forward deployment of strategic assets reducing threat to them. For instance in the event of an emergency a Su-30 MKI can take off from its home base in Pune land at a forward base refuel, arm and proceed for missions across the Northern or Eastern borders.

The first project under Phase I of this project was commissioned at Bhatinda air base in 2014 and now work is on at Hindon air force station near the national capital. The Rs. 1220 crore project will cover 30 major bases and will gain speed in light of the recent attack.

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External Infrastructure

In addition to augmenting our domestic infrastructure a detailed strategy is required on gaining access to or building infra across the IOR and the Navy is the flag bearer in this effort. India has been traditionally reluctant in gaining access to foreign ports and bases partly due to its Nonalignment policy and partly for the fear of antagonising China.

The government under Mr.Modi had been pushing military diplomacy as a tool for deepening strategic partnerships in the Indian Ocean region. These include capacity building for friendly nations, joint exercise, hydro graphic surveys, equipment transfer, joint training, access to military academies in India among others.

Speaking at the inaugural ceremony of IFR 2016 Navy Chief Admiral RK Dhowan underscored that "the security, stability and safety of the global commons is a collective responsibility of the navies of the world."

In line with that he added: "The Indian Navy, accordingly, has re-aligned its maritime strategy, to reflect the changes in the evolving global environment, and has established a credible record of cooperative initiatives to promote stability of the oceans, and played a central role in ensuring safety of the vital sea lines of communication, across the Indian Ocean."³

The updated maritime security strategy 2015 says that with growing economic and military strength of the country, the national security imperatives and political interests stretched gradually "beyond the Indian Ocean Region".

Admiral Dhowan wrote in the document: "There seems little doubt today that the 21st century will be the 'Century of the Seas' for India and that the seas will remain a key enabler in her global resurgence."

These are yet the clearest indicator of India's desire to play a more proactive role in the neighbourhood. To achieve this creating requisite infrastructure is a must and it doesn't necessarily mean setting up foreign military bases. They do not in fact make economic and political sense beyond a point. What is needed are logistics bases for support when required.

China released its biennial Defence white paper in 2015 which clearly outlined its ambitions for sustenance of its assets forward deployed in "open waters" through "strategic positioning." It is now setting up its first military base outside abroad in Djibouti in addition to a series of facilities elsewhere.⁴

During his visit to Seychelles in March last year, Mr.Modi inaugurated the first of eight Coastal Surveillance Radar Systems (CSRS) being set up by India. India is helping Indian Ocean littorals as part of capacity and capability enhancement in strengthening their maritime domain awareness capabilities.

Seychelles President James Michel defined the Maritime Radar Project as a

“major development for Seychelles’ and India’s mutual desire for security in the field of maritime security.”⁵

These stations will eventually be integrated into the Information Management and Analysis Centre (IMAC), the Navy’s nerve centre for coastal surveillance based in Gurgaon. The system currently comprises about 50 radars and in all 76 radars are planned to fill all the gaps in coastline security.

These stations will enable real time tracking of shipping traffic from the Horn of Africa to Malacca Straits.

Similarly Mr. Modi had also firmed several island and port development projects during his visits in the region namely, Maldives, Mauritius, Sri Lanka and Seychelles.

India has just begun work on developing infrastructure for the Seychelles Coast Guard on the Assumption Island which can be a halting point in the long run for Indian ships on anti-piracy missions. In Mauritius, India inked plans to build strategic assets on the Agalega Island.

While China is rapidly reclaiming coral reefs in the South China Sea which can act as floating air bases or immovable aircraft carriers, the island facilities in the IOR can be India’s version of them.

The other priority for India in the next years is the Afghanistan-Iran triangle. Completing the development of Chabahar port in Iran should be a national priority. Chabahar not only offsets China’s advantage in Gwadar but gives India strategic depth in dealing with Pakistan. In addition Chabahar will be give freedom in dealing with Afghanistan and also be India’s gateway to Central Asia.

India and Iran agreed in 2003 to develop a port at Chabahar on the Gulf of Oman but the project never took off. Finally a memorandum of understanding was signed during Minister of Road Transport and Highways Nitin Gadkari’s visit to Iran in May last year. “We will complete the port in about one- and-a-half years... The distance between Chahbahar to Gujarat is less than Delhi to Mumbai,” Mr. Gadkari had said at that time.

A senior US Navy officer had recently welcomed India’s capacity building initiatives in the region. US Chief of Naval Operations Admiral John Richardson who was in India in February said, “The encouraging development is that India building capacity around the world, a global nation enhancing security across the world.”

He noted that overall the security of the maritime region will increase as everybody contributes with their limited capabilities with India providing help, assistance and way forward for all those nations to help themselves. “It is in India’s best interests to become an exporter of security “not only in this region but worldwide,” he added.

The various infrastructure projects are already underway or are in the process

India has just begun work on developing infrastructure for the Seychelles Coast Guard on the Assumption Island which can be a halting point in the long run for Indian ships on anti-piracy missions. In Mauritius, India inked plans to build strategic assets on the Agalega Island.

of being finalised and will take firm shape in the next five years. With the hectic diplomatic calendar of Mr. Modi and his government's emphasis on deepening security cooperation the run to the 75th year of India's Independence promises to be exciting.

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The Making of India's Cyber Security Architecture



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India is increasingly vulnerable to cyber attacks, ranging from intrusions that affect the integrity of data to large-scale attacks aimed at bringing down critical infrastructure. This vulnerability is largely a function of India's digital economy, which is a "net information exporter" that relies heavily on devices manufactured outside the country. Another complicating factor is the density of India's cyberspace, which does not permit a uniform legal or technical threshold for data protection laws. This paper proposes a security architecture that can improve inter-agency coordination, and help prevent and respond to cyber attacks. The primary goals of the National Cyber Security Agency – a "Cyber Command" that brings together the Armed Forces and civilian agencies – are twofold: improve the country's resilience and defence systems against serious electronic attacks, while enhancing its own intrusive, interceptive and exploitative capabilities.

Introduction

Cyberspace is now as relevant a strategic domain as are the other four naturally occurring domains of land, air, sea and space. As the Union Minister for Defence Manohar Parikkar recently highlighted, India's defence capabilities must be strengthened against disruptive and highly sophisticated cyber-attacks.¹ Moreover, the country's Armed Forces must be geared to fight future wars in cyberspace, whether standalone skirmishes or in conjunction with kinetic battles.² Unlike conventional arenas of warfare, cyberspace has seen, and will continue to witness the proliferation of non-state actors, widely ranging in profile and capabilities. Instances of 'weaponising' the internet are on the rise – using its technologies for activities like recruitment of terrorists, radicalisation on the basis of specific narratives, disruption of crucial public services like electricity grids and the financial sectors, and the theft of commercial secrets. It is no exaggeration to claim that the integrity of India's digital networks can affect the strategic trajectory of a nation: cyberspace can be used to mould, even determine political outcomes; spur or stunt the growth of its economy; and strengthen or destabilise its critical information infrastructure.

India's burgeoning digital economy hosts the world's second largest user base on the internet.³ The Union government's flagship initiatives like 'Digital India', as well as the emphasis on governance premised on connectivity, are raising the stakes for the country's information infrastructure. It is conceivable that the integrity of India's cyber platforms will increasingly be subjected to threats and suffer vulnerabilities in the immediate future. Vice Admiral Girish Luthra, former Deputy Chief (operations) in Headquarters Integrated

While a National Cyber Security Agency or a Cyber Command would offer institutional, inter-agency architecture to cooperate, defend and respond to attacks on Indian infrastructure, a broader strategic framework is required to protect Indian assets overseas, both civilian and strategic.

Defence Staff (HQ IDS), recently suggested that a “cyber-race” is currently underway: with incidents of commercial espionage, IPR theft, denials of service, and other kinds of attacks being perpetrated on a daily basis.⁴ Safeguarding India's cyberspace – defined by this paper as infrastructure physically located within the nation's borders, as well data hosted by Indian individuals, corporations and government anywhere in the world – requires not only a coherent conceptualisation of India's strategic interests, but a clear outlining of methods to secure them and time-bound plans of action. As the country's cyber security apparatus is slowly being put in place, there is a need for policy and operational coherence.

Strategic Challenge

India's strategic challenge in cyberspace stems not just from external threats but the design and density of its digital ecosystem. While technology is moving from the West to the East, information is flowing in the reverse direction, offering law enforcement agencies few options to protect and, where warranted, extract the data of Indian citizens. The overseas custody of data also exposes the sensitive information of citizens vulnerable to foreign attacks: for example, where a foreign database – located in foreign soil but hosting the information of Indian citizens – is to be attacked by a third party, Indian authorities have limited jurisdiction to investigate and prosecute the perpetrators. While a National Cyber Security Agency or a Cyber Command would offer institutional, inter-agency architecture to cooperate, defend and respond to attacks on Indian infrastructure, a broader strategic framework is required to protect Indian assets overseas, both civilian and strategic. This paper makes an assessment of India's strategic interests in cyberspace, and proposes an agile architecture that will be responsible for formulating cyber security policy and operationalizing its key objectives. Such an architecture must take the form of a National Cyber Security Agency, an apex command organisation at the national level.

Threats and Vulnerabilities

Cyber threats fall into four broad categories: espionage; warfare; terrorism; and crime. Remarkably, few international rules or norms currently exist to regulate the first three, while cyber crime is largely a concern of state law enforcement agencies, with limited legislative guidance on investigative processes. In 2015, 72 percent of Indian firms faced at least one cyber attack.⁵ Critical information infrastructure in India has also been subject to espionage campaigns like the Ghost net hacking of Defence Research and Development Organisation computers in 2012.⁶ By one estimate, India was among the countries most targeted by cyber criminals through social media in 2014.⁷ According to data from the Computer Emergency Response Team (CERT), some 8,311 security breach incidents were reported in the country in January 2015, as against 5,987 in November 2014.⁸ Meanwhile, the number of websites ‘defaced’ during the same period increased from 1,256 to 2,224.⁹ The CERT report ranked India as the third most vulnerable country in Asia for ‘ransomware’ attacks (malware that curtails access to the infected device in return for a ransom). As the Indian internet landscape becomes populated by first-time users of the internet, cyber threats are likely to become not only more frequent,

but also increasingly sophisticated.

Mapping India's Cyber Landscape

Policy landscape

The broad contours of cyber security in India have been set by the National Cyber Security Policy, as promulgated by the Ministry of Communications and Information Technology in 2013. The policy aims to facilitate the creation of a secure cyberspace eco-system and strengthen the existing regulatory framework.¹⁰ The policy, nevertheless, leaves room for improvement.

The National Security Council Secretariat, the nodal agency for cyber security and internet governance in India, should articulate an updated policy that builds on the 2013 document. The current policy does not offer high-level guidelines to protect strategic digital assets and critical information infrastructure. The realm of cyber security lies at the broad intersection of both military and commercial networks. The relevance of cyberspace both as a site and instrument of warfare should be addressed in subsequent iterations of the policy. The 2013 policy approaches cyber security from a transactional perspective, with a view to protect the data of individuals and corporations. This is a laudable goal, as is the policy's emphasis on streamlining cooperation between ministries and other sectoral agencies involved in cyber security. Nevertheless, new strategies must build on a grand narrative that evaluates how India's military, civil and commercial infrastructure can be leveraged to enhance the country's capabilities as a cyber power.

The 2013 cyber security policy was largely the output of deliberations within a single ministry. Given that the responsibilities of securing India's civil and military infrastructure have been distributed among several ministries, agencies and departments, it is important that the next version must involve inter-ministerial consultations. Where appropriate, multi-stakeholder input should be considered in the articulation of national cyber security policies.

Organisational landscape

The following agencies have been entrusted with Cyber Security management at various levels:-

- National Information Board
- National Security Council Secretariat (NSCS)
- National Crisis Management Committee
- National Cyber Response Centre
- National Technical Research Organisation (NTRO) (includes the National Critical Information Infrastructure Protection Centre)
- National Disaster Management Authority (NDMA)
- National Cyber Security and Coordination Centre
- National Intelligence Grid (NATGRID)

While this is a comprehensive set of institutions designed to tackle specific cyber concerns, a second layer of governance functions is also carried out by the

The realm of cyber security lies at the broad intersection of both military and commercial networks. The relevance of cyberspace both as a site and instrument of warfare should be addressed in subsequent iterations of the policy.

Ministries of Home Affairs, External Affairs, Defence, and Communications & Information Technology. A Joint Working Group has been created among these ministries to coordinate internet governance policies, but this multi-ministerial agency is still in its infancy, and its ambit remains unclear.

The overlapping of organisational charters, the duplication of efforts, and hurdles to coordinating cyber operations among various stakeholder entities are all concerns that must be addressed urgently.

Recommendations

India's rise as a cyberpower will likely be driven by the following key factors:

- i) The articulation of a comprehensive national cyber space strategy;
- ii) The technological development of cyber security capabilities;
- iii) The development of human resources and human capital at operational levels;
- iv) A synchronised governance/organisational structure;
- v) Training and assimilating a cyber force for offensive and defensive operations.

National Cyber Strategy

The government relies on digital infrastructure for a wide range of critical services. This reliance is going to increase manifold when projects associated with the Digital India initiative begin to fructify. A high-level document outlining India's strategy to protect its cyberspace and harness its economic potential could serve as a base document for various ministries, PSUs, and other government agencies to draw out their own Standard Operating Procedures. Such a strategy document should outline two goals: *first*, send the signal to state and central government functionaries that cybersecurity is a subject seriously considered at the highest levels in New Delhi, and *second*, the need to develop "cyber-hygiene" – safe practices to protect individual user data and systems – cuts across all sections of the economy and government, irrespective of position or rank.

Need for a National Cyber Set Up

As the US Department of Defence cyber strategy identifies, the trend of "using cyberattacks as a political instrument reflects a dangerous trend in international relations."¹¹ For this reason, the scale and scope of attacks may vary from wanting to infiltrate networks without causing damage, to shutting down critical operational systems. Thwarting all forms of cyberattacks – especially ones that are intended to go undetected – is difficult and unrealistic. However, the more serious attacks can be deterred and effectively responded to, if there is an organisational set up that can assess the imminence of such threats and is technically capable of defending and responding to them. This paper proposes the creation of a National Cyber Security Agency – a Cyber Command – that would be responsible for a wide range of tasks, from policy formulation to implementation at the national level.

The organogram of the proposed agency is enclosed in Appendix A.

The NCSA would report to the Prime Minister's Office and will preferably be headed by Chief of Defence Staff (as and when approved by government). In the interim, the Chairman of the Chiefs of Staff Committee could lead the organisation. The NCSA may comprise the following wings:-

- Policy Wing
- Operations Wing
- Advanced Research Centre

The **Policy Wing**, headed by a bureaucrat (Additional Secretary-level) would be responsible for:

- Strategic and long-term assessment of cyber threats and vulnerabilities.
- Articulating the strategic use of cyberspace to further India's political and military objectives.
- Vetting MoUs with other governments.
- Laying out a roadmap for national cyber capacity building.
- Facilitating coordination among various government agencies.
- Proposing changes to India's legal and regulatory framework as it relates to information security.

The membership could comprise the following:

- a) Chairperson—Additional Secretary-level (chosen on rotation from the National Security Council Secretariat and constituent ministries)
- b) Representatives of following ministries/agencies:-
 - Ministry of Defence
 - Ministry of Home Affairs
 - Ministry of External Affairs
 - National Security Council Secretariat
 - Ministry of Communications and Information Technology
 - Defence Research and Development Organisation
 - National Technical Research Organisation
 - Ministry of Law and Justice
 - Private sector (where required)
 - Academia and representatives from think-tanks

Operations Wing: Implementing decisions taken by the Policy Wing will be the responsibility of an operations wing. It may be headed by a Lt. Gen. or equivalent from the Armed Forces and will comprise both Assurance and Exploitation Groups.

- a) The Assurance Group under takes cyber defence measures to protect military and civilian critical infrastructure. Its mandate would also include capacity building and investment to build resilience. The group would further comprise two sub-teams:
 - i) The Protection Section would involve CERT-In and sectoral CERTs from state governments and PSUs. The CERT, which is presently

under the Ministry of Communications and Information Technology would join the Assurance group under NCSA.

- ii) The Resilience Section would be responsible for disaster management and data recovery. Among other goals, it will be the primary task of this section to retrieve or salvage data from affected systems and render them operational within the shortest timeframe.

The Assurance Group should be under a Joint Secretary or equivalent. This section should be populated by civilians (CERT employees), with defence systems to be manned by defence personnel. Private industry and representatives from Research & Development organizations may also form part of Assurance section.

- b) **Exploitation Group:** This is the arm of the agency focusing on intrusive, interceptive and exploitative operations, with an aim being to infiltrate social media and other information networks of target organisations, agencies and countries. The section is proposed to be headed by Major General or equivalent. Two sub-teams, relating to social media and network exploitation, would populate this group.

- i) The Network Exploitation section would include internal (to handle and subject domestic networks to penetration testing ala “red teams”) and external (to deal with overseas networks) sub-teams. Its main functions would include:
 - Undertaking reconnaissance of networks during peacetime to prepare for conflict.
 - Scoping vulnerabilities of identified infrastructure/ networks, both internal and external.
 - Maintaining a database of critical infrastructures/networks of targets.
 - Exploiting target networks with speed and precision.

The network exploitation group would be manned by technically qualified individuals from the armed forces, DRDO, the NTRO and other R&D organisations, where appropriate.

- i) The Social Media section, too, would consist of sub-teams responsible for internal and external networks.
 - The Internal Team would monitor domestic social media, share data with organisations as deemed appropriate for remedial action.
 - External Teams: To exploit social media of target networks, and where necessary, engage in counter-narrative building and information gathering.

The social media sections could be populated by individuals on deputation from the MoD, MHA, and state police. Specialists can also be hired on contract or recruited for this purpose.

Assessing Organisational Effectiveness: Merits v. Demerits

Responsibilities clearly demarcated, as specific agencies are in charge of research, defence and exploitation of networks.	Consolidation of resources under one organisation may lead to an all pervasive “super” cyber agency.
The structure lends operational synergy, with policy and ARC wings lending support to cyber operations.	Leadership style of individual heading the organization will likely influence its overall functioning.
Faster response times, as an integrated organisation is likely to cut through bureaucratic hurdles.	
Cost-effective with minimal duplication of efforts, as is the case currently.	
Will generate a highly trained and qualified cyber force that will be a valuable asset in all circumstances/ crises.	
The proposed organisation will permit flexibility and adaptability to changing circumstances, regarding its own structure and constituencies/departments involved.	

Advanced Research Centre (ARC)

The ARC is proposed to be a resource for research and analysis of gathered intelligence and data that has been farmed. The composition of the ARC will not be very different from that of the policy wing, and will prominently feature India’s intelligence agencies.

Conclusion

The next five years are expected to be crucial to the conception, evolution, and maturation of international cyber norms. The UN Group of Governmental Experts, which has been convening since 2012, in its last report outlined the basic principles of engagement during peacetime. Initiatives like the Tallinn Manual – issued by a group of non-governmental experts under the aegis of the NATO Cooperative Cyber Defence Centre of Excellence – have attempted to outline rules of engagement during war. It remains to be seen whether these processes will converge into a comprehensive, codified set of norms, but international efforts seem to be working on the assumption that it is impossible to prevent all manners of cyber attacks. Indeed, the sophistication and rapid advancement of exploitative technologies suggest that norms of behavior in cyberspace are aimed at fostering restraint. This is a political exercise, which assumes that engagement in cyberspace between state and non-state actors can be conditioned by international relations.

There are lessons to be learned from such an approach: the proposed National Cyber Security Agency (NCSA) is premised on the principle that while cyber attacks may not always be fully thwarted, they can at least be more accurately predicted through sustained intelligence gathering. The Policy Wing and Advanced Research Centre of the NCSA are its critical limbs: they fulfill

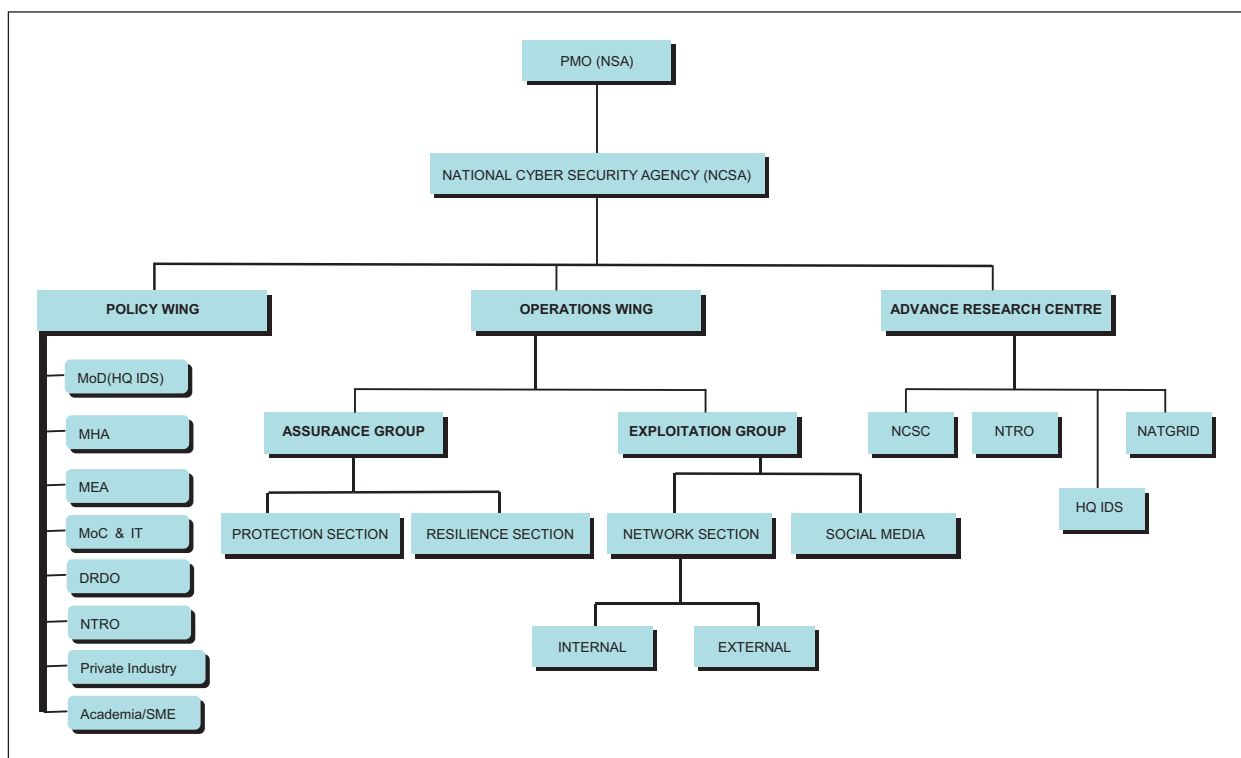
The proposed National Cyber Security Agency (NCSA) is premised on the principle that while cyber attacks may not always be fully thwarted, they can at least be more accurately predicted through sustained intelligence gathering.

the functions of inter-agency coordination and information-sharing which is absent in India's current cyber security apparatus. Keeping a close tab on trends in cyber warfare is crucial to preventing attacks, and so is understanding the political context in which they occur, and the nature and capabilities of global non-state actors. The Operations Wing responds to attacks, but also serves the important function of "cyber deterrence" through its exploitative capabilities. Deterrence, unlike in the context of nuclear weapons, cannot be based on a quantitative threshold given the varying nature of cyber attacks. India's efforts should therefore be to enhance its intrusive and exploitative capabilities that restrain other actors from carrying out large-scale attacks.

While China has sought what it calls the "informationisation" of warfare – broadly acknowledging the role of information as weapons in battle – India should first seek to harvest data to enhance its capabilities. The strengthening of India's digital forensics capabilities, signature detection sensors and attributive capacity is just as important as building an arsenal of cyber weapons.

This paper offers a structure along which the country's cyber security apparatus may be aligned. Irrespective of the final shape that this organisation takes, what remains unchanged is the role and relevance of key stakeholders and government agencies. The convergence of key departments or wings of the armed forces should create an architecture that is more than the sum of its parts. The NCSA, with its constituents articulating and implementing cyber security policies, is a first step in this regard.

Appendix A



(An expanded version of this article was published as an ORF Special Report titled “The Cyber Command: Upgrading India’s National Security Architecture”)

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India's Participation in UN Peacekeeping Missions: More Status Quo Than Game Changer



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Setting the Stage

From keeping and enforcing peace to engineering, medical and humanitarian assistance, as military observers and peacebuilders, India's record in the United Nations-sanctioned collective security mechanism of peacekeeping is well known. It has contributed the most troops—numbering over 180,000—to this practice since its inception, and is currently the third-largest troop contributing country (TCC) after Bangladesh and Ethiopia,¹ as well as a critical contributor of air and other advanced military assets. As needs and contexts in which blue helmets operate have evolved, India has also fielded the first all-female contingent in the history of UN peacekeeping, which has recently ended its mission in Liberia, and has doubled its contribution of police units to missions.

India's participation has won it much deserved praise—locals gave the Indian contingent the moniker 'Friends of Somalia' (in stark contrast to how other TCCs were perceived); former UN Secretary-General Butros Butros-Ghali once commended the Indian troops for their "superior training and high sense of responsibility" in Mozambique in a BBC interview; and more recently, Indian peacekeepers in South Sudan (forming one-third of the UN contingent there) were praised for having prevented a carnage. Individuals, too, have been recognised. For instance Lt. General Prem Chand, who served as Force Commander in missions in Democratic Republic of Congo, Cyprus, Namibia and Zimbabwe, was awarded the UN Peace Medal.

Yet, this "declared" recognition—verbal or written applause—of India's experience, merit and dedication to UN peacekeeping is not commensurate with actual acknowledgment in terms of representation at high-level posts and inclusion in decision making and mission planning. To date, India has provided two military, two deputy military and two police advisors, as well as 15 force commanders (the latest deputation of Major General Jai Shankar Menon as head of the UNDOF occurring in February of this year) in its almost 70 years of service to the collective security mechanism.

Large TCCs, such as India, are also, still, not adequately consulted before mission mandates are formally announced. These latter are typically too broad and all encompassing, or too robust, and without commensurate resources, consequently posing practical difficulties for the troops and policemen on the ground as well as concerns regarding safety and security. (India has thus far lost 163 individuals in these missions.) Since they

are on the fringes of the decision-making processes, peacekeepers face the risk of fighting a full-fledged war, as occurred in Congo and Somalia. The lacuna is particularly striking given the evolving conflict environments in which peacekeepers are expected to follow instructions. In fact, Lt. General V.K. Jetley, Force Commander in the mission in Sierra Leone, surmises that the earlier days of blue helmets seen as having greater clout are gone; instead, they are today seen as targets.² India, along with several other countries, has been actively championing a process of joint consultation between the UN Security Council, TCCs and UN Secretariat since at least the turn of the century (from when India's statements at the UN are available online).

The other significant hurdle facing UN peacekeeping are accusations and instances of corruption and sexual exploitation and abuse. Indian peacekeepers, too, have faced complaints of misconduct, and currently face three "substantial allegations" that occurred between 2010 and 2013 as per the UN Office of Internal Oversight Services.

Peacekeeping at 75

Marching along the Beaten Path

Some see India's participation in UN peacekeeping missions as an important engagement that serves India's international identity and builds its character as a responsible nation, thus giving weight to its global leadership ambitions—including that of a chair in the UN Security Council. Others credit it as an arm of India's military diplomacy endeavours. Yet others consider India's contribution to helmet operations to be a relic from the Nehruvian era, which saw merit in voicing Indian support for initial missions—1960 Congo conflict; missions in Hungary, West Irian and Yemen—that strengthened India's positions on decolonisation and self-determination, and presented another front to voice nonalignment amidst Great Power rivalry. In contrast, it is claimed, India's involvement post-Cold War is rudderless, especially given the persisting divide between respective roles and contributions of developed and developing nations in these missions. Has the "rich world...hired Pakistani, Bangladeshi, Indian, Egyptian, Nigerian and Nepalese troops to grapple with some of the world's most intractable conflicts"³ in places where no one else will go—or in places where the US and other Western nations have 'drawn down' their engagements? And, as Major General Mahinder Pratap Bhagat, commander of the Indian brigade to Somalia and former Deputy Military Advisor to the UN Security-General clarifies, "India won't get a Security Council seat because of peacekeeping"⁴: Good global citizenry on the part of India through this medium has not yet and will not in the future negate obstacles impeding India's acceptance (such as China's opposition).

Whatever view(s) prescribed to among analysts and citizens, India will continue to participate in the maintenance of international peace and security through UN peacekeeping missions in the coming years. At the world leaders' summit on peacekeeping at the sidelines of the UN General Assembly in September last year, Prime Minister Narendra Modi reiterated India's commitment (which is "strong and will continue to grow") and pledged an additional battalion of 850 troops in existing or new operations; three police

The earlier days of blue helmets seen as having greater clout are gone; instead, they are today seen as targets.

units, with higher representation of female peacekeepers; and the deployment of technical personnel. He also committed to providing “critical enablers” and additional training facilities in India and in the field.⁵ At least one more all-female unit along the lines of the all-female Formed Police Unit can be expected, given the success in Liberia.

Concurrent to its contribution on the ground, India will continue mobilisation at the UN General Assembly and peacekeeping-specific panels for more involvement of TCCs in the preparation and assessment of mandates, and for greater resources from the developed countries. It will also strive to simultaneously promote the formulation of political processes that buttress security operations undertaken by peacekeeping forces in a bid to address the systemic loopholes in the methodology of peacekeeping, peace enforcement and peacebuilding. The High-level Independent Panel on Peace Operations report in 2015—the latest endeavour dedicated toward peacekeeping reform—recognises these shortfalls; it remains to be seen to what extent and how soon its recommendations are implemented.

Qualitatively, one ‘upgradation’ in India’s peacekeeping contribution in the coming years could be in terms of equipment that is tailored to more hostile security environments. For instance, as aerial visualisation becomes more popular in field ranging from agriculture to journalism, unmanned aerial vehicles could very well begin to be used for surveillance and intelligence-gathering purposes in UN peacekeeping missions. The first ones have already been deployed in 2013 in Congo, but their viability and whether they will change the status quo on the ground continue to be debated. Consensus on such “hybrid” operations from India, however, is contingent upon TCCs involvement in decision making on such operations.⁶

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Charting a Fresh Course

While India will most likely continue treading on its current path with regard to peacekeeping in the near future as described above, it is possible for India to inject much-needed fresh momentum in its contributions. This proposition is only probable in the event that the Indian political and military establishments comprehensively review the country’s engagement in peacekeeping—a bare-bones assessment of whether it should maintain, increase, decrease, or stop contributing entirely (as some voices opine). First and foremost, such an analysis will bring this not-so-trivial ‘legacy’ of contributing to UN peacekeeping missions to the forefront of conversation in the corridors of powers. This will help resolve the apparent gap between the habit of sending troops to far-away places and national interest and security. Indeed, as one former peacekeeper has commented, “There is no connection between the peacekeeping operations and so called strategic thinkers of our country.”⁷

Peacekeeping efforts must be conscious, and not the humdrum exercise of ritual. There is much goodwill in the nations and societies Indian blue helmets engage with; can it be translated into mutual benefit? How can peacekeeping become a manifestation of the coupling of national security/interests and the country’s foreign policy agenda?

The following scenario can be envisaged in this context. As India's economic and strategic interests increase in traditional theaters of peacekeeping—for instance, in Africa—in the next few years as the Republic of India completes 75 years, could Indian presence in the peacekeeping missions in these places become more targeted to fulfill, as secondary objectives, security of its political and economic assets?

Some could decry such a change as antithetical to the image India has developed as a benign, responsible international actor. And this may very well be the conclusion of the re-evaluation—in which case, at the very least, India's contribution to peacekeeping still needs to be publicly managed to dispel, for instance, the notion of mercenary motives that entice Indian soldiers. While this may indeed be part of the reason that few Indian soldiers say no to a UN assignment, it is not as simple a matter of “meal tickets” being provided at no cost to the Indian government⁸: Indian payments on UN deputations are effectively bigger than the allowances being paid by the UN.⁹ This is because India now subsidises its own troops from its own government budget,¹⁰ and consequently, the UN owes India \$85 million as back-payments for its deployments.¹¹ A more stringent vetting process of soldiers and police personnel will also go a long way in successfully carrying out a zero-tolerance policy towards cases of sexual exploitation and abuse.

There are other means by which India can redefine its peacekeeping engagement. For instance, it is accepted that India will continue pursuing peacekeeping missions under the UN umbrella—no regional peacekeeping à la Africa Union mission in Somalia is likely or envisaged, and grouping like the BRICS are not politically coherent to support peacekeeping-like ventures in third countries (neither is this a desired agenda item). The credibility and legitimacy that the UN provides is an ideal space to build and advance an Indian narrative of peacekeeping. Again, this is the corollary that follows post a critical reassessment of India's engagement in UN peacekeeping operations. Based on its varied and long experience, an Indian narrative could tackle the thorny issues of the use of force, advance the notion of ‘responsibility while protecting,’ offer training guidelines. India can also help in ideating newer peacekeeping avenues—such as naval/maritime peacekeeping, something that may be of particular interest to New Delhi as India moves more concertedly into the Indian Ocean and beyond. The end goal remains one of mooring India's peacekeeping ventures to India's national interests instead of solely to bureaucratic ones, as seemingly the case at present. This, effectively, may be more visibly a case of Indian leadership.

While the above will allow New Delhi to move beyond proforma iterations at UN gatherings on the need for peacekeeping reform, the other circumstance that could change the nature of India's contribution is if there is forward momentum on UN Security Council reform. Were India to get a seat at the UN High Table, it would be able to become an equal rule-maker as the other parties present in the council, all within the safe environment of the world's multilateral body.

When it comes to peacekeeping, India has the advantage that the issue is not an internally political divisive matter; this can help it chart a more

Peacekeeping efforts must be conscious, and not the humdrum exercise of ritual.

result-oriented course when it comes to its participating in UN blue helmet missions.

- 1 As on 15 December 2016.
- 2 Interview with author, October 18, 2012.
- 3 "New Delhi's starry-eyed aspirations at UN," *Asian Age*, May 23, 1995, quoted in Alain Bullion, "India and UN peacekeeping operations," *International Peacekeeping* 4:1 (1997): 108.
- 4 Interview with author, October 19, 2012.
- 5 PTI, "Success of peacekeeping depends not on weapons but on UN's moral force: PM Modi," *The Indian Express*, December 25, 2015, <http://indianexpress.com/article/india/india-news-india/success-of-peacekeeping-depends-not-on-weapons-but-on-uns-moral-force-pm-modi/>.
- 6 "Delegates Argue Merits of Unmanned Aerial Vehicles, Other Technologies as Security Council Considers New Trends in Peacekeeping," United Nations Meetings Coverage and Press Releases, June 11, 2014, <http://www.un.org/press/en/2014/sc11434.doc.htm>.
- 7 Mahesh, Response to "Time to abandon UN peacekeeping," Pragmatic Euphony Blog, The Takshila Foundation, January 8, 2008, <http://pragmatic.nationalinterest.in>.
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- 9 "Weekday Trivia Quiz," Pragmatic Euphony Blog, Takshila Foundation, June 25, 2010, <http://pragmatic.nationalinterest.in/2010/06/25/weekday-trivia-quiz>.
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Strategies of Warfighting



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India has fought six wars since independence; generally, with the conservative goal of preserving or restoring the strategic status quo. Its wars against Pakistan in 1947-48, 1965, and 1999, and against China in 1962, were all defensive actions to repel invasions of its territory. Even its more ambitious campaigns – the 1971 vivisection of Pakistan and the 1987-90 intervention in Sri Lanka – were planned by New Delhi to address mounting instability and restore regional order. In all cases, India sought to assert its primacy in South Asia and dissuade extra-regional powers from intervention. As the dominant power of the region, India has long been satisfied with the geopolitical status quo. And with an increasing focus on accelerating its economic development, India is invested more than ever in maintaining regional stability. In any future conflicts, India would likely persist with these conservative policy goals – it would seek to defend territorial boundaries or, as an emerging “net security provider,” restore regional stability. But, especially given its aggressive program of military modernization, how would India fight such a conflict? If its strategic goals remain constant, would its warfighting methods also remain constant? What capabilities would be required for India to develop alternative ways of using force?

For the purposes of this argument, I posit there are three main force employment methods: force-centric, terrain-centric, and risk-centric.¹ These are the *ways* of using force in wartime; along with the *policy ends* and military *means*, they define India's possible strategies of warfighting. Since I assume the ends will be largely constant – in defence of the status quo – and the military means evolve only very slowly, the ways are the most variable feature of India's military strategy. In general, a *force-centric* campaign targets the enemy's military forces, seeking to degrade its capacity to fight. A *terrain-centric* campaign seeks instead to gain control of politically-significant features of the landscape. Such key terrain may include natural geographic features, towns, critical infrastructure, or even specific groups of people – whatever has political significance for that particular contingency. A *risk-centric* campaign seeks to gradually escalate pressure on the enemy, inflicting some harm and signaling the risk of more harm to follow. These ways of using force are ideal types only – in the practice of warfighting, they coexist and overlap, although campaigns usually emphasise one more than the others, whether by design or accident.

In the service of its status quo-defending strategic ends, India has usually adopted force-centric strategic ways in wartime. That is, in most wars India has sought above all to degrade enemy military capabilities, rather than to seize politically-significant terrain or to escalate pressure on the enemy. In this chapter I argue that each

way of using force carries its own advantages and disadvantages, but that powerful institutional and cultural barriers will impede the development of terrain-centric and risk-centric options for Indian warfighting, at least in the short term. India at 75 will struggle to command the full suite of warfighting options available to a military great power. My argument unfolds in three parts. First, I briefly outline the history of India's preference for force-centric ways of fighting, and the entrenched reasons for that preference. Second, I argue that India's military institutional structures and culture make other ways of fighting both less likely and less effective. Finally, I conclude by suggesting that no one way of using force is inherently and consistently better – each has advantages and disadvantages; but a lack of alternative options will limit India's military effectiveness.

India's Preference for Force-centric Campaigns

In most wars since independence, India has used force-centric ways of fighting. With the exception of the 1971 war, India has sought to achieve its military objectives primarily by seeking to degrade the enemy's military capabilities. In the first Kashmir war (1947-48), India sought to repel Pakistani invaders with a conventional defence. The conflict reached an operational stalemate when India was unable to surge any more forces into the theatre, and New Delhi was unwilling to open a new front or to escalate pressure on Pakistan. In the China war (1962), India summarily lost the initiative and never regained it. Its forces reacted haphazardly to Chinese advances, mounting ineffective defences with little apparent regard for the tactical utility or strategic significance of the terrain.³ In the second Kashmir war (1965), India once again fought to repel multiple Pakistani incursions. Unlike in the previous Kashmir war, India this time did open a new front, attacking across the international border. But even this counter-attack was strategically defensive – designed to relieve pressure on Indian formations in J&K; it targeted Pakistani forces and had negligible strategic impact on the shape of the post-war settlement.⁴ In the Sri Lanka intervention (1987-90), the Indian Peacekeeping Force (IPKF) was deployed to restore stability. But the mission soon evolved – the IPKF identified the Tamil insurgents as an enemy force and sought to pacify their cadres with a half-hearted counterinsurgency campaign.⁵ In the Kargil conflict (1999), India fought once more to expel Pakistani invaders from Kashmir. Operating within self-imposed limits, Indian forces assiduously avoided any escalation and labored to engage Pakistani infiltrators peak by peak.⁶

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Set against this consistent historical pattern, the chief exception was the 1971 war, when India used a terrain-centric approach to force.⁷ Its military campaign emphasized manoeuvre, using highly mobile formations to bypass Pakistani concentrations of force and seize the centre of gravity, Dacca. India correctly identified and prioritized the politically-significant terrain and, vitally, supported its conventional military offensive with shaping operations – especially support to Bangladeshi irregulars and an aggressive diplomatic campaign. Together, these integrated lines of effort helped to ensure that military actions against key terrain had decisive political effects.

The 1971 war was an exception because of a unique constellation of factors. India's unusual choice of force employment was inextricably tied to its

unusually revisionist war aims – unique in India’s military history, it sought to drastically change the territorial status quo through war. India faced a manageably-sized enemy in East Pakistan, which presented a clear political centre of gravity. A decisive military success against that centre of gravity would deliver a political resolution to the underlying political issue. India has used terrain-centric force employment in other non-war cases where military objectives could clearly yield political effects – such as in its 1988 Maldives intervention – but such conditions have not repeated themselves in India’s other wars, so 1971 stands as a unique wartime exception. Despite the success of the 1971 campaign, and subsequent reform efforts to reorganize the Indian military in the 1980s, Indian warfighting reverted to type in the Sri Lanka and Kargil conflict, as I argue above; 1971 was an exception in Indian campaigning, not a turning point.

Barring this key exception, then, why has India so consistently fought wars in force-centric ways? This is particularly puzzling because these force-centric ways have so consistently yielded equivocal results for India. Even when Indian forces met their narrow operational objectives – for example, defeating Pakistani aggression in 1965 – they did so at high cost and with little resultant improvement in the strategic balance. Why has India not adopted other ways of using force, especially after the example of resounding victory set by the 1971 war?

In part, India’s preference for force-centric fighting lies in its national political values. Nehruvian India prized holding the moral high ground – military force was to be used only defensively, to directly repel attackers and go no further. To change the status quo by claiming politically-significant terrain, or to threaten the enemy with escalating force, were seen as tools of aggressors, not of a democratic India focused on economic development. Even more fundamentally, India’s preference for force-centric fighting is based on geopolitical realities – India is the dominant power in South Asia, and playing to its advantages, the simplest way to prevail in war should be to overwhelm enemy forces in a direct confrontation. Although India is the dominant power in South Asia, the intractability of most of its security threats limits the utility of military force – thus India usually fights wars only to manage the immediate threat, rather than resolving the underlying political issue. Force-centric ways of warfare are thus consonant with India’s political values and its geopolitical position. But they are also a product of India’s limited means. In the next section I outline the capacity limitations – especially in non-material dimensions – which inhibit India from more regularly or effectively employing other ways of using force.

The Importance of Structures and Culture

Military strategies are viable and effective when they can leverage the necessary military capabilities. That is, certain *ways* of fighting require the possession of certain *means*. Moreover, the relationship between ways and means is interactive – a preference for certain ways of fighting skews the capabilities that a military will develop, while those capabilities will in turn delimit the missions it can subsequently execute. This has created a path dependence in India’s military development – from India’s independence onwards, its

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warfighting practice and its peacetime capability development have deepened a preference for force-centric ways of fighting and correspondingly increasing the obstacles to deviating from that preference.

This preference has been cultivated especially in the institutional foundations of Indian military capability. The material building blocks of military capability – major weapons systems such as tanks and aircraft – can generally be easily tasked and re-tasked to execute different missions. These components are therefore largely fungible – they are useful for multiple warfighting functions. For the execution of military operations, however, these basic material capabilities must draw upon non-material, but equally important, elements of capability. These non-material inputs to capability include the organisation of units, training, command, and doctrine. Such elements of capability, often overlooked in simplistic assessments of military power, are vital for military effectiveness and, therefore, success on the battlefield. They are, in turn, heavily shaped by the institutional structures and cultures of the military. As in any ponderous bureaucracy, the military's institutional structures and cultures create entrenched organisational biases; and in India's case, these biases favour of some operational concepts over others.

For example, India's civil-military relations have inadvertently deepened its preference for force-centric warfighting. From the beginning, Nehru was wary of a powerful and politicised military, and the civil-military relations gap grew particularly wide after the 1962 war debacle, when a chastised civilian leadership was blamed for the defeat. Since then, and especially since the celebrated victory of 1971, the military leadership has jealously guarded its operational autonomy, and the civilian leadership has wilfully abdicated its responsibility to provide direction.⁸ As a result, the services are largely left to their own devices to formulate doctrine, force structure, and training⁹ – essential elements of military capability are thus developed in the absence of strategic guidance. Weapon systems acquisitions and operational plans have been developed with traditional force-on-force engagements in mind – devoid of more precise political direction, the purpose of the military is to destroy the enemy's forces in battle. This predisposition is compounded by a lack of clear strategic planning and a risk-averse organisational culture that does not, for example, prize mission command among its unit commanders. These structures and cultures are thus ill-suited to a dynamic, terrain-centric campaign; such campaigns demand astute strategic assessments, innovative operational concepts, and above all, clear interaction between civil and military leaders on the campaign's goals and priorities. Absent that strategic interaction, capability development programs and operational plans have little choice but to prepare for force-centric attritional campaigns.

Structures and culture may create preferences, but they do not determine the choice of strategy. As I noted above, there has been at least one historical example – the 1971 war – of an exception to the pattern of force-centric fighting. India does have material capabilities to fight terrain-centric or risk-centric wars, and as I noted above, it can and will deviate from its ingrained preferences under certain conditions. But even if it fights another war and designs a terrain-centric campaign primarily to control politically-significant objectives, it may find some key capabilities lacking. For example, the planned

intervention in Mauritius in 1983 – which would have been a bold terrain-centric expeditionary operation – was aborted because of organisational dysfunction. India had the material capabilities to intervene, but a lack of clear political direction and unified military command stopped the campaign before it could even begin – Indian Army and Navy leaders disagreed over operational details, and the political leadership demurred and suspended the operation.¹⁰ In this case, as in the successful case of 1971, the non-material inputs to capability – the structures and culture of military institutions – proved critical in the success or failure of the operation. Structures and cultures may not determine the choice of strategy, but they do determine the effectiveness of the chosen strategy.

Conclusion: A Great Power's Toolkit

The foregoing argument is not to suggest that terrain-centric ways of fighting are necessarily more effective than force-centric ways, or that risk-centric ways are irrelevant for India. All these ways of using force in wartime carry advantages and disadvantages, which may be more or less salient in different contingencies. Terrain-centric ways, for example, are more likely to achieve national political objectives if executed well; but they also demand a greater acceptance of risk, from the tactical to the national level, and a greater level of command skill to prosecute tactical objectives independently and adapt to changing circumstances. Risk-centric ways allow the strategic leadership to exercise closer control over the use and escalation of force; but they may also grant the enemy more latitude to decide the pace and nature of war termination. Over the past several decades, force-centric ways have allowed India to maintain its strategic identity as a defensive status-quo power doing its best to cautiously manage intractable threats; but they have also come at high operational costs and often resulted in strategically inconclusive wartime outcomes.

There is no single optimal template for the use of force in wartime – but military great powers are distinguished by their possession of multiple options. India faces a range of persistent threats, and has also signalled a willingness to take on a greater role as a “net security provider” in the region; this expansion of security interests will place an increased burden on the Indian military, and an increased demand for adaptable force options. India has military capabilities it could use in terrain-centric and risk-centric ways of fighting, but given its entrenched institutional preferences, it is less likely to adopt such ways, and less likely to execute them effectively.

This problem has become particularly acute since the advent of nuclear deterrence in South Asia, with its attendant concerns over escalation. Force-centric ways of fighting leave India with fewer possible avenues to threaten or apply force – in security crises such as those following terrorist attacks in 2001 and 2008, India was essentially left with a stark all-or-nothing choice, to do nothing or initiate a general war. Once again, in those crises India resiled from using military force, pursuing a strategy consonant with its interests in defending the status quo. But as India approaches 75, defending that status quo presents a growing contradiction: it enables India's national development and emergence as a global actor, but it also exacts a mounting

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toll in unanswered security provocations from Pakistan. Force-centric ways of fighting offer few viable options to address that quandary.

If India does seek to more readily and effectively use force in other ways, its defence leadership will have to revisit their notions of capability development. Building some key capabilities – such as intelligence, surveillance and reconnaissance, special operations forces, and stand-off precision strike – would go some way towards developing terrain-centric and risk-centric force options. But at the heart of all military capabilities are the institutional structures and culture which shape and direct military power. The current state of civil-military relations, inter-service cooperation, strategic planning, and service cultures inhibit India's military effectiveness. Unless those underlying issues are addressed through institutional reform, any capability development will be piecemeal. On its present course, India will probably be able to preserve its vital interests and prevent defeat in war; but it will not realise its ambitions as a great power while it has so few viable and effective options for the use of force.

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- 1 The arguments in this chapter draw in part from Arzan Tarapore, "India's Use of Force: The Missing Indirect Approach," ORF Issue Brief #106 (Observer Research Foundation, September 2015). The direct/indirect characterization of force employment used in that paper may include coercion and non-military uses of force, whereas the distinction in this chapter – between force-centric, terrain-centric, and risk-centric – refers only to the use of military force in wartime.
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