

India's Military Modernisation:

Assessing the Impact on India's Relative Power and Foreign Relations¹

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I Introduction: Changing the Balance

In the 21st Century, the world has closely observed the rapid political and economic rise of the Republic of India. Paralleling this political and economic rise, India has also sought to strengthen its military power through modernisation. Political and academic debate abounds as to the scale and strength of this modernisation, as well as how it will influence India's relative power in the Indian Ocean and Asia-Pacific region. Furthermore, the impact of this modernisation on India's relations with the United States of America and People's Republic of China is a point of further contention. This article seeks to address these issues.

Ultimately, it is argued that India is conducting a large scale modernisation of its military capacity. However, this modernisation is impeded at times by logistical constraints, as well as poor decision-making and hardware obsolescence. Nonetheless, this recent modernisation is bolstering India's relative power in the Indian-Ocean and Asia-Pacific by increasing its ability to 'assert, defend, deter and assist' across a range of military operations. Furthermore, in terms of India's foreign relations, this modernisation has: 1) significantly improved relations with the United States; and 2) created both suspicion and attempts at cooperation from China.

In order to demonstrate these trends, it will be necessary to outline India's military modernisation across six key domains of warfare: land, sea, air, missile/nuclear, outer-space and cyberspace. This analysis will then proceed to assess the impact of modernisation on India's relative power in the Indian Ocean and the Asia-Pacific region. It will then explore

¹ The views in *The Culture Mandala* are those of the author(s) and do not necessarily reflect the views, position or policies of the *Centre for East-West Cultural and Economic Studies*. Bearing in mind the controversial debates now occurring in International Relations and East-West studies, the editors publish diverse, critical and dissenting views so long as these meet academic criteria.

how India's military modernisation has, and will, impact India's relations with the U.S. and China.

II Indian Military Modernisation

Land Modernisation

India has sought to modernise its land capacity through the substantial acquisition of modern military technology and a restructure of Army units. First, with regard to military technology acquisitions, India is procuring modern technology for both its mechanised and infantry capacities. In terms of mechanised capacity, India has steadily acquired a total of 330 T-90S main battle tanks (MBT's) from Russia,² as well as indigenously building two regiments of Arjun MBT's and purchasing an additional 347 T-90S' to be constructed in India.³ It has also acquired towed, wheeled and self-propelled 155mm guns and howitzers through both import and indigenous manufacture.⁴ India has also developed the 'Future Infantry Soldier as a System' project ('F-INSAS'), which seeks to improve the "communications, lethality, survivability and situational awareness" of Indian infantry.⁵ In order to meet these F-INSAS objectives, India has been developing and procuring modern rifles that are more reliable in extreme conditions and can incorporate attachments such as grenade launchers, thermal optics and laser rangefinders.⁶ Furthermore, India intends to develop hi-tech helmets with night vision, wrist-mounted GPS systems, and a full 'battle-suit' with a bulletproof and waterproof jacket.⁷

Second, with regard to restructuring Army units, India has sought to restructure part of its large and slow-moving forces into smaller, mobile, terrain-relevant units. This can be seen in its creation of eight 'integrated battle groups' (IBG's). These IBG's consist of armour, mechanised infantry and artillery, and are able to respond almost instantaneously to threats on

² Stephen P. Cohen and Sunil Dasgupta, *Arming Without Aiming: India's Military Modernisation* (Washington: Brookings Institution Press, 2010), p. 62.

³ Gurmeet Kanwal, 'India's Military Modernisation: Plans and Strategic Underpinnings', *National Bureau of Asian Research* [web page] (2012) <<http://www.nbr.org/research/activity.aspx?id=275>>, accessed 18 July 2014.

⁴ Gurmeet Kanwal, Loc. Cit.; Santosh Sonawane, 'Army to get 155 mm 'dhanush' gun, advanced radar equipment soon', *The Times of India* [web page] (2014) <<http://timesofindia.indiatimes.com/city/nashik/Army-to-get-155-mm-dhanush-gun-advanced-radar-equipment-soon/articleshow/28811928.cms>>, accessed 16 July 2014.

⁵ Kable Intelligence, 'Secret weapon: the F-INSAS programme', *Army-Technology.com* [web page] (2012) <<http://www.army-technology.com/features/featuredssi-f-insas-indian-army-future-soldier/>>, accessed 18 July 2014.

⁶ Ibid.

⁷ Ibid.

India's borders.⁸ A further example of this transition to small, mobile, terrain-relevant forces can be seen in the recent proposal to create the 'Mountain Strike Corps.' Expected to be ready by 2016, the corps will consist of 40,000 troops placed along the Line of Actual Control adjacent to disputed territories held by China.⁹ These corps will be equipped with terrain-appropriate equipment such as ultra-light artillery, unmanned aerial vehicles, radar technology, as well as rifles capable of operating effectively in the mountainous conditions.¹⁰

Despite this sizeable modernisation, the Indian Army faces logistical constraints to modernisation, as well as issues of hardware obsolescence. The Indian Army is the largest recipient of Indian defence budget allocations.¹¹ However, the Army only accounts for approximately 20%-25% of total capital expenditure.¹² This is because the large majority of the Army's expenditure is dedicated towards pay, allowances, rations, fuel, ammunition and maintenance costs.¹³ Additionally, even with the largest defence budget allocation, the Army is already facing large budget cuts of almost \$8 billion USD to the Mountain Strike Corps.¹⁴ The Army also faces the issue of delayed procurements, with helicopter acquisitions being the prime example. India stated its intention to acquire 400 helicopters in 2008,¹⁵ but continues to face substantial delays on both international acquisition and domestic production, with some projects even being scrapped.¹⁶ Beyond these logistical issues, much of the hardware of the army has long been obsolete. Indeed, a sizeable portion of the infantry is still using pre-World War II arms such as Lee-Enfield Rifles and Sterling Submachine guns.¹⁷

⁸ Stephen P. Cohen and Sunil Dasgupta, Op. Cit., p. 60.

⁹ Kapil Patil, 'India's New Mountain Strike Corps: Conventional Deterrence', *The Diplomat* [web page] (2013) <<http://thediplomat.com/2013/08/indias-new-mountain-strike-corps-conventional-deterrence/>>, accessed 18 July.

¹⁰ Rahul Singh, 'Army Chief Monitors Progress of New Strike Corps', *Hindustan Times* [web page] (2014) <<http://www.hindustantimes.com/india-news/army-chief-monitors-progress-of-new-strike-corps-to-counter-china/article1-1216627.aspx>>, accessed 19 July 2014.

¹¹ Eric Gomez, 'Chinese and Indian Military Modernization: An Asian Arms Race?', *The Proceedings of GREAT Day*, (2013), p. 106.

¹² Gurmeet Kanwal, Loc. Cit.

¹³ Ibid.

¹⁴ Rahul Bedi, 'India to halve size of new mountain corps', *Jane's Information Group* [web page] (2015) <<http://www.janes.com/article/50743/india-to-halve-size-of-new-mountain-corps>>, accessed 28 April 2015.

¹⁵ Stephen P. Cohen and Sunil Dasgupta, Op. Cit., p. 62.

¹⁶ Pandit, Rajat, 'Armed Forces' Bid to Acquire Helicopters Hits Hurdles', *The Times of India* [web page] (2013) <<http://timesofindia.indiatimes.com/india/Armed-forces-bid-to-acquire-helicopters-hits-hurdles/articleshow/25340272.cms>>, accessed 19 July 2014.

¹⁷ Rajesh Rajagopalan, 'Defence Modernisation: A Revolution in Indian Defence Procurement', *The Economic Times* [web page] (2014) <http://articles.economictimes.indiatimes.com/2014-04-22/news/49318844_1_kalashnikov-paramilitaries-indigenisation>, accessed 19 July.

Sea Modernisation

Through the acquisition of various modern vessels, India's Navy is undergoing an extensive modernisation. Indeed, in 2008, Admiral Sureesh Mehta, Chief of the Indian Navy at the time, stated that, "by 2022, we plan to have a 160-plus ship navy, including three aircraft carriers, 60 major combatants, including submarines, and close to 400 aircraft of different types."¹⁸ Looking purely at numbers, the number of vessels India had in 2000 compared to the number it has in 2015 does not display a large scale modernisation, with only minimal increases in frigate, destroyer and corvette numbers, and slight decreases in submarine numbers.¹⁹ Indeed, at first glance, the only substantive acquisitions would appear to be a second aircraft carrier and the doubling of amphibious assault vessel numbers.²⁰ However, India's modernisation is more qualitative in nature than quantitative; it is phasing out its older vessels and replacing them with modern ones. This is evident through the increase in the Navy's tonnage from 167,657 tonnes in 1991 to 217,426 tonnes in 2011, as well as the number of missile cells on Indian Navy ships, which have increased from 21 cells in 1991 to 402 in 2011.²¹ The most prominent of these modern vessels is India's second aircraft carrier: the *INS Vikramaditya*. Acquired from Russia, it was formally commissioned into the Navy in 2014, with two domestically produced carriers set to be commissioned in 2018 and 2025.²² Another notable vessel in this modernisation is the *INS Arihant*, which is India's first domestically produced nuclear-powered ballistic-missile submarine.²³ Finally, with regard to surface combatants, India has acquired 6 'stealth' frigates from Russia (and plans to construct a further 3 domestically),²⁴ and also commissioned the *INS Kolkata* destroyer in August 2014.²⁵

¹⁸ Walter C. Ladwig, 'Delhi's Pacific Ambition: Naval Power, "Look East," and India's Emerging Influence in the Asia-Pacific', *Asian Security*, 5/2 (2009), p. 91.

¹⁹ International Institute for Strategic Studies, *The Military Balance* (Routledge, 2000), p. 169; International Institute for Strategic Studies, *The Military Balance* (Routledge, 2015), pp. 249-250.

²⁰ *Ibid.*

²¹ Harsh V. Pant, *Rise of the Indian Navy: Internal Vulnerabilities, External Challenges* (London: Ashgate Publishing, 2012), p. 22.

²² PTI, 'India launches first indigenous aircraft carrier INS Vikrant', *The Times of India* [web page] (2013) <<http://timesofindia.indiatimes.com/india/India-launches-first-indigenous-aircraft-carrier-INS-Vikrant/articleshow/21774409.cms>>, accessed 19 July 2014; Ritu Sharma, 'India plans a 65,000-tonne warship', *The New Indian Express* [web page] (2012) <<http://www.newindianexpress.com/nation/article583809.ece>>, accessed 19 July 2014.

²³ International Institute for Strategic Studies, *The Military Balance* (Routledge, 2014), p. 212-213.

²⁴ Rajat Pandit, 'India inducts new power-packed stealth frigate INS Trikanth', *The Times of India* [web page] (2013) <<http://timesofindia.indiatimes.com/india/India-inducts-new-power-packed-stealth-frigate-INS-Trikanth/articleshow/20832834.cms>>, accessed 19 July 2014.

²⁵ International Institute for Strategic Studies, *The Military Balance* (Routledge, 2015), p. 219.

As with India's land modernisation, India's sea modernisation faces logistical constraints, as well as hardware obsolescence issues. Logistically, vessel acquisition and construction is a slow process, with Indian shipyards only able to deliver around one vessel a year.²⁶ In terms of obsolete hardware, despite acquiring and developing its submarine capabilities, 50% of India's submarine fleet is not operational.²⁷ Furthermore, concerns over the safety of the submarine fleet have been raised, with the recently refitted *INS Sindhurakshak* sinking in a Mumbai dockyard after an on-board explosion.²⁸ Similarly, the *INS Sindhurakshak*'s sister ship – the *INS Sindhuratna* – also caught fire at sea, though the boat itself was saved.²⁹

Air Modernisation

The Indian Air Force (IAF) is also modernising, though it too faces logistical issues. The costs of acquiring new military aircraft are exceptionally high and, as such, the IAF received 40% of the military's capital outlay budget in 2011.³⁰ India is using these funds to purchase a wide array of modern aircraft including indigenously producing Russian designed Su-30MKI air superiority fighters, of which 170 are already in service and a further 222 in production.³¹ Furthermore, India is finalising the purchase of 36 Rafale multi-role combat aircraft (MRCA) from Dassault Aviation.³² Beyond fixed wing aircraft, 22 Apache helicopters were also purchased from the U.S. in 2012.³³ Finally, the IAF has bolstered its airlift capacity through acquiring Globemasters and Super Hercules transports, as well as through a joint venture with Russia to create a 'multirole transport aircraft.'³⁴ Despite acquisitions such as those mentioned above, India faces logistical issues in aircraft procurement. Production of Su-30MKI's is behind schedule due to 'development issues.'³⁵ Furthermore, India had originally

²⁶ Eric Gomez, Op. Cit., p. 107.

²⁷ Iskander Rehman, 'The Military Dimensions of India's Rise', *London School of Economics* [web document] (2012) <<http://www.lse.ac.uk/IDEAS/publications/reports/pdf/SR010/rehman.pdf>>, accessed 20 July 2014, p. 24.

²⁸ International Institute for Strategic Studies, *The Military Balance* (Routledge, 2014), p. 213.

²⁹ International Institute for Strategic Studies, *The Military Balance* (Routledge, 2015), p. 219.

³⁰ Guy Ben-Ari and Nicholas Lombardo, 'India's Military Modernization', *Centre for Strategic and International Studies* [web page] (2011) <<http://csis.org/publication/indias-military-modernization>>, accessed 20 July 2014; Stephen P. Cohen and Sunil Dasgupta, Op. Cit., p. 83.

³¹ Jay Menon, 'Su-30MKI Delivery To Indian Air Force Slips?', *Aviation Week* [web page] (2013) <<http://aviationweek.com/defense/su-30mki-delivery-indian-air-force-slips>>, accessed 20 July 2014.

³² Rahul Bedi, 'Indian Rafale deal to be finalised 'by end of May'', *Janes Information Group* [web page] (2015) <<http://www.janes.com/article/50810/indian-rafale-deal-to-be-finalised-by-end-of-may>>, accessed 26 May 2015.

³³ Vivek Raghuvanshi, 'Source: India Considers Buying More Boeing Apaches', *DefenseNews* [web page] (2013) <<http://www.defensenews.com/article/20130724/DEFREG03/307240013/Source-India-Considers-Buying-More-Boeing-Apaches>>, accessed 20 July 2014.

³⁴ Guy Martin, 'Indian Air Force Flying High', *Military Technology*, 37/2 (2013), p. 85.

³⁵ Jay Menon, Loc. Cit.

sought to purchase 126 MRCA from Dassault, and have these aircraft in service by 2014.³⁶ However, reaching agreement on this purchase proved difficult over the 2012-2015 period of negotiations,³⁷ ultimately leading to the deal of 36 MRCA (in fly-away condition) mentioned above. The earliest these 36 MRCA's can be in service is 2017 and it remains unclear how and when India plans to procure the remaining Rafale MRCA's.³⁸

Missile/Nuclear Modernisation

Outside of conventional military capacities, India has also sought to develop its nuclear and missile capabilities. It currently has an estimated stockpile of 90-110 nuclear warheads, which is a substantial increase from 30-35 warheads in 2002.³⁹ In terms of how these warheads can be used, India has almost achieved the 'nuclear triad' – the ability to use nuclear weapons from land, sea or air.⁴⁰ Recent developments in reaching this nuclear triad include the soon to be operational *INS Arihant* (which can carry ballistic missiles with nuclear warheads) and the test launch of the Agni-V ICBM, which has a range of at least 5,000km.⁴¹ India may seek to develop multiple independently targetable re-entry vehicle (MIRV) capacities that will enable several warheads to be mounted on a single missile.⁴² Beyond nuclear missiles, India has also created the Indian Ballistic Missile Defence Program, which seeks to create a missile defence shield to intercept a ballistic missile. The first phase of the program has completed its testing stage, with the shield set to be installed in two Indian

³⁶ International Institute for Strategic Studies, *The Military Balance* (Routledge, 2014), p. 213.

³⁷ Rahul Bedi, 'Indian Rafale deal to be finalised 'by end of May'', *Janes Information Group* [web page] (2015) <<http://www.janes.com/article/50810/indian-rafale-deal-to-be-finalised-by-end-of-may>>, accessed 26 May 2015.

³⁸ International Institute for Strategic Studies, *The Military Balance* (Routledge, 2014), p. 213; Rahul Bedi, 'Indian Rafale deal to be finalised 'by end of May'', *Janes Information Group* [web page] (2015) <<http://www.janes.com/article/50810/indian-rafale-deal-to-be-finalised-by-end-of-may>>, accessed 26 May 2015.

³⁹ Federation of American Scientists, 'Status of World Nuclear Forces', *FAS* [web page] (2015) <<http://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/>>, accessed 26 May 2015; Robert S. Norris, William M. Arkin, Hans M. Kristensen and Joshua Handler, 'India's Nuclear Forces 2002', *Bulletin of the Atomic Scientists*, 58/2 (2002), p. 70.

⁴⁰ Hans M. Kristensen and Robert S. Norris, 'Indian Nuclear Forces – 2012', *Bulletin of the Atomic Scientists* 68/4 (2012), p. 96.

⁴¹ Gurmeet Kanwal, Loc. Cit.; International Institute for Strategic Studies, *The Military Balance* (Routledge, 2014), p. 241.

⁴² Hans M. Kristensen, 'India's Missile Modernization Beyond Minimum Deterrence', *Federation of American Scientists* [web page] (2013) <<https://fas.org/blogs/security/2013/10/indianmirv/>>.

cities.⁴³ In its current state, the missile shield can allegedly shoot down a ballistic missile from 1,500km away.⁴⁴

Outer-Space Modernisation

Whilst India is opposed to the weaponisation of outer-space,⁴⁵ it nonetheless sees the military benefits of space activities, and has launched satellites in order to support its capabilities in other domains of warfare. In 2012, India launched its first dedicated defence satellite, which will improve naval communications.⁴⁶ India also launched its first navigational satellite in 2013.⁴⁷ Furthermore, it has launched 2 RISAT radar imaging satellites (1 obtained from Israel, 1 indigenously produced), which have visibility in all weather and times of day, as opposed to previous Indian satellites which relied on optical or infrared imaging.⁴⁸ Indian military officials have also indicated that India could develop kinetic energy anti-satellite (KE-ASAT) capabilities, though this appears to be a political response to the successful Chinese KE-ASAT test of 2007, rather than a commitment to developing these capabilities in the near future.⁴⁹

Cyberspace Modernisation

Until very recently, India had overlooked modernising its cyberspace military capacities. Indeed, a former Major-General of the Indian Army, Mahindra Singh, stated in 2013 that, “Cyber warfare is the new battlefield and India is not prepared for this battle.”⁵⁰ In the past, there have been numerous claims of ad-hoc cyber intrusions between India and Pakistan during periods of high tension, largely run by civilian hackers attacking public or government

⁴³ Eric Auner, ‘Indian Missile Defense Program Advances’, *Arms Control Association* [web page] (2013) <http://www.armscontrol.org/act/2013_01-02/Indian-Missile-Defense-Program-Advances>, accessed 20 July 2014.

⁴⁴ Ibid.

⁴⁵ Amit R. Saksena, ‘India and Space Defence’, *The Diplomat* [web page] (2014) <<http://thediplomat.com/2014/03/india-and-space-defense/>>, accessed July 20 2014. The weaponisation of outer space is the placement of weapons in outer space. It should be distinguished from the militarisation of outer space, which is the use of outer space for military surveillance, targeting, and communications.

⁴⁶ Ibid.

⁴⁷ Rajeswari, P. Rajagopalan and Arvind K. John, ‘A New Frontier: Boosting India's Military Presence in Outer Space’, *Observer Research Foundation* [web document] (2014) <http://www.observerindia.com/cms/export/orfonline/modules/occasionalpaper/attachments/occasionalpaper50_1392021965359.pdf>, accessed 20 July 2014, p. 21.

⁴⁸ Ibid, pp. 20-21.

⁴⁹ Bharath Gopaldaswamy and Gaurav Kampani, ‘India and Space Weaponization: Why Space Debris Trumps Kinetic Energy Antisatellite Weapons as the Principal Threat to Satellites’, *India Review*, 13/1 (2014), p. 41-42.

⁵⁰ Vivek Raghuvanshi, ‘India Debates Establishing Cyber Command’, *DefenseNews* [web page] (2013) <<http://www.defensenews.com/article/20131122/DEFREG03/311220008/India-Debates-Establishing-Cyber-Command>>, accessed 20 July 2014.

websites.⁵¹ However, following recent attacks against India's East Naval Command submarine fleet headquarters and the Defense Research and Development Organisation ('DRDO'), Indian officials have realised that India must develop its cyber capabilities in order to protect core infrastructure and logistical assets, as well as military command and control systems.⁵² In order to ensure that it was prepared, India released its 'National Cyber Security Policy 2013', in which it announced that it aimed to build a "workforce of 500,000 professionals skilled in cyber security in the next 5 years."⁵³ The policy is unclear as to whether these professionals would merely be monitoring cyberspace, or whether they would be acting in a defensive or even offensive capacity.⁵⁴ However, with the 2014 establishment of a joint military cybercommand in response to the cyberattacks against the East Naval Command submarine fleet headquarters and the DRDO,⁵⁵ there is some certainty that India is seeking to develop a defensive cyberwarfare capacity at the very least.

III Influence of Indian Military Modernisation on India's Relative Power

Methodology

In assessing how military modernisation has impacted India's relative power, this article uses a model that considers how military modernisation improves India's ability to assert, defend, deter, and assist. Within this model, a state's ability to 'assert' is defined as the ability of a state to use military force offensively beyond its own borders in order to produce favourable strategic outcomes. Conversely, a state's ability to 'defend' is defined as the ability of a state to use military force defensively in order to protect itself and its interests from the offensive use of military force by other states and non-state actors. A state's ability to 'deter' carries the traditional strategic meaning – the ability to deter another state from using military (or other) power against your own state. Finally, the ability to 'assist' is defined as a state's ability to

⁵¹ Kim Arora, 'Hackers from India, Pakistan in full-blown online war', *Times of India* [web page] (2014) <<http://timesofindia.indiatimes.com/tech/tech-news/Hackers-from-India-Pakistan-in-full-blown-online-war/articleshow/44766898.cms>>, accessed 9 July 2015.

⁵² Deloitte, 'Global Defense Outlook 2014', *Deloitte* [web document] (2014) <<http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Public-Sector/gx-ps-global-defense-outlook-2014.pdf>>, accessed 20 July 2014, p. 14.

⁵³ Department of Electronics and Information Technology, 'National Cyber Security Policy-2013', *Government of India* [web document] (2013) <[http://deity.gov.in/sites/upload_files/dit/files/National%20Cyber%20Security%20Policy%20\(1\).pdf](http://deity.gov.in/sites/upload_files/dit/files/National%20Cyber%20Security%20Policy%20(1).pdf)>, accessed 20 July 2014, p. 4.

⁵⁴ Sanjiv Tomar, 'National Cyber Security Policy 2013: An Assessment', *Institute for Defence Studies and Analysis* [web page] (2013) <http://www.idsa.in/idsacomments/NationalCyberSecurityPolicy2013_stomar_260813>, accessed 20 July 2014.

⁵⁵ Deloitte, Loc. Cit.

assist other states through using military power in non-traditional military operations (e.g. humanitarian assistance missions or peacekeeping missions).

Assert

First, India's military modernisation enhances its relative power in the Indian Ocean and Asia-Pacific through increasing its ability to assert itself militarily. This is best exemplified in three areas of operation: 1) the Indo-Pakistani border; 2) the Line of Actual Control with China; and 3) the Indian Ocean. With regard to the Indo-Pakistani border, the Kargil War of 1999 and the 2001-2002 border standoff highlighted India's inability to swiftly mobilise its massive conventional land forces.⁵⁶ In these conflicts, India was unable to respond decisively to Pakistani troop placements and incursions, giving Pakistan time to seek political solutions and escape relatively unscathed.⁵⁷ In response, India modernised its land and air capacity and created the IBG's. As part of India's new 'Cold Start' Doctrine, these smaller, mobile and more integrated forces will enable India to respond quickly and proportionally, so that the nuclear threshold is not reached.⁵⁸ With regard to the Line of Actual Control, the new Mountain Strike Corps will boost India's ability to assert itself against China. The corps have been given the mandate to attack Tibet in the event China invades Indian territory.⁵⁹ If these corps are successfully established, then India will have the ability to capture a valuable piece of Chinese territory and exploit anti-Chinese sentiments in that region.⁶⁰ In terms of the ability to assert itself in the Indian Ocean, India's naval modernisation has given it a substantial and credible naval influence in the Indian Ocean. Indeed, if it is successful in acquiring two more aircraft carriers, then it can form three carrier battle groups to create a sphere of naval influence over the Arabian Sea, Bay of Bengal and Indian Ocean.⁶¹ Furthermore, India now has the capacity to block the Malacca Strait – a crucial chokepoint for Chinese economic and energy security.⁶² In addition to its Indian Ocean and chokepoint

⁵⁶ Stephen P. Cohen and Sunil Dasgupta, Op. Cit., p. 59.

⁵⁷ Ibid.

⁵⁸ Rizwan Zeb, 'Aimless Military Modernisation', *South Asia*, 15/3 (2011), p. 34.

⁵⁹ Radhakrishna Rao, 'The Rapid Modernisation of the Indian Armed Forces', *Military Technology*, 36/3 (2012), p. 30.

⁶⁰ Kapil Patil, Loc. Cit.

⁶¹ Walter C. Ladwig, 'Delhi's Pacific Ambition: Naval Power, "Look East," and India's Emerging Influence in the Asia-Pacific', *Asian Security*, 5/2 (2009), p. 92.

⁶² David Scott, 'India's Aspirations and Strategy for the Indian Ocean – Securing the Waves?', *The Journal of Strategic Studies*, 36/4 (2013), p. 504.

control capabilities, India is likely to score a prestige victory over China by beating it in constructing its first indigenous aircraft carrier.⁶³

Defend

Second, India's military modernisation improves its relative power in the Indian Ocean and Asia-Pacific by enhancing its ability to defend against threats to national security. One such example of this is India's Ballistic Missile Defence Program. If successful, the program will weaken Pakistan's use of asymmetric warfare combined with nuclear brinkmanship and, more importantly, give India the ability to shoot down ballistic missiles fired at Indian cities with a 90% success rate.⁶⁴ Whether India is capable of achieving a 90% success rate is contentious⁶⁵ but, nonetheless, the shield will drastically enhance India's missile defence capabilities. A further example of this enhanced defence capability can be seen in the modernisation of the Indian Navy. With 90% of India's trade by volume being seaborne trade,⁶⁶ India needs to ensure that the Indian Ocean, and the sea lines of communication ('SLOC's') that run through it, remain free of threats. Such threats include naval aggression or attempted blockades by states such as Pakistan or China, as well as non-state threats such as piracy and terrorism.⁶⁷ Through its focus on the procurement of modern aircraft carriers, submarines, frigates, destroyers and other vessels, India is creating a navy capable of keeping these threats at bay.⁶⁸

Deter

Third, India's military modernisation enhances its relative power in the Indian Ocean and Asia-Pacific through bolstering its deterrence capabilities. This can most prominently be seen through India's missile and nuclear capacity. India has a 'Credible Minimum Deterrence' Policy, whereby it acquires only enough nuclear weapons to deter enemy attacks and stresses a 'no first use' policy alongside a strong second strike capability.⁶⁹ Through initiatives such as the Agni-V rocket and the *INS Arihant*, India is able to strengthen and expand the range of

⁶³ International Institute for Strategic Studies, *The Military Balance* (Routledge, 2014), p. 212.

⁶⁴ Iskander Rehman, Loc. Cit.; Frank O'Donnell and Yogesh Joshi, 'India's Missile Defense: Is the Game Worth the Candle?', *The Diplomat* [web page] (2013) <<http://thediplomat.com/2013/08/indias-missile-defense-is-the-game-worth-the-candle/1/>>, accessed 20 July 2014.

⁶⁵ Ibid.

⁶⁶ Walter C. Ladwig, 'India and Military Power Projection: Will the Land of Gandhi Become a Conventional Great Power?', *Asian Survey*, 50/6 (2010), p. 1174.

⁶⁷ David Scott, 'India's Aspirations and Strategy for the Indian Ocean – Securing the Waves?', *The Journal of Strategic Studies*, 36/4 (2013), p. 489.

⁶⁸ Ibid, pp. 489-490.

⁶⁹ Kapil Patil, Loc. Cit.

its second strike capacity and deter states from using nuclear weapons on Indian cities.⁷⁰ Beyond nuclear weapons and ballistic missiles, India's Mountain Strike Corps are useful for deterring Chinese territorial advances along the Line of Actual Control.⁷¹ Furthermore, India's IBG's will help to deter incursions and proxy wars by Pakistan on the Indo-Pakistani border.⁷² Through these technological and force structure modernisations, it is clear that India is gradually improving both its nuclear and conventional deterrence capabilities.

Assist

Finally, India's military modernisation increases its relative power in the Indian Ocean and Asia-Pacific through improving its ability to assist other states and enhance its status as a responsible international actor. This improved ability to assist was demonstrated after the 2004 Indian Ocean Tsunami, with India deploying 27 warships and 5,000 personnel to assist in providing humanitarian relief for the Maldives, Sri Lanka and Indonesia.⁷³ A further example of this ability to assist can be seen in numerous anti-piracy operations by the Indian Navy in the Gulf of Aden, which help to keep the SLOCs open for all states to use.⁷⁴ As a final example, the modernisation of India's military also enables it to provide better assistance to U.N. Peacekeeping Operations in the Indian Ocean Region and beyond. Indeed, through the acquisition of naval landing craft and transport aircraft, India can swiftly deploy a large number of peacekeepers to an area.⁷⁵ Through assistance initiatives such as humanitarian deployments, anti-piracy operations, and peacekeeping operations, India is able to improve its credibility as a regional actor, and bolster its 'soft power' credentials as a state that can contribute to regional and global order.

⁷⁰ Gurmeet Kanwal, Loc. Cit.

⁷¹ Kapil Patil, Loc. Cit.

⁷² Sushant Sareen, 'Cold Start as Deterrence Against Proxy War', *Institute for Defence Studies and Analysis* [web page] (2010)

<http://www.idsa.in/idsacomments/ColdStartasDeterrenceagainstProxyWar_ssareen_221110.html>, accessed 20 July 2014.

⁷³ David Scott, 'India's Aspirations and Strategy for the Indian Ocean – Securing the Waves?', *The Journal of Strategic Studies*, 36/4 (2013), p. 500.

⁷⁴ Amit A. Pandya, Rupert Herbert-Burns and Junko Kobayashi, *Maritime Commerce and Security: The Indian Ocean* (Stimson Centre: Washington, 2011), p. 118.

⁷⁵ Walter C. Ladwig, 'India and Military Power Projection: Will the Land of Gandhi Become a Conventional Great Power?', *Asian Survey*, 50/6 (2010), pp. 1179-1182.

IV The Impact of Indian Military Modernisation on Relations with the United States and China

Indo-American Relations

India's military modernisation has significantly improved its relations with the U.S., as the U.S. now sees it as a vital strategic partner in the region. India is the world's largest democracy and shares similar concerns to the U.S. on a number of important regional issues such as Islamist extremism, the rise of China, and nuclear proliferation.⁷⁶ Combining these common interests with India's rising military prowess, the U.S. perceives India to be an important strategic partner in the region. Indeed, former U.S. Secretary of State Condoleezza Rice described India as a "Pillar of stability in a rapidly changing Asia."⁷⁷ Through this strategic partnership, the U.S. seeks to make India a 'net security provider' for the Indian Ocean and South Asia regions, and reduce its own military commitments to the region to an extent.⁷⁸

In order to ensure that India becomes an Asian 'pillar of stability', the U.S. has sought closer ties with India through assisting with Indian military procurement, and through engaging in joint humanitarian and training operations. In terms of assisting with Indian military procurement, the U.S. has engaged in "military technology transfers, missile defence collaboration, and arms sales, as well as opening the door to joint weapons production."⁷⁹ In terms of joint humanitarian and training operations with India, the 21st century has seen an increase in the 'size, sophistication and scope' of Indo-American defence engagement with a total of 56 cooperative events in 2011 alone.⁸⁰ Prominent examples of recent Indo-American defence engagements include the joint humanitarian response of the two nations to the 2004 Tsunami,⁸¹ as well as the 2007 Malabar Naval Exercises in the Bay of Bengal.⁸² To conclude, it is clear that although India wishes to retain strategic autonomy, its recent military modernisation has led to a sustained pattern of engagement with the U.S. since the year 2000.

⁷⁶ Walter C. Ladwig, 'Delhi's Pacific Ambition: Naval Power, "Look East," and India's Emerging Influence in the Asia-Pacific', *Asian Security*, 5/2 (2009), p. 101.

⁷⁷ *Ibid.*, p. 102.

⁷⁸ Gurmeet Kanwal, *Loc. Cit.*

⁷⁹ Walter C. Ladwig, 'Delhi's Pacific Ambition: Naval Power, "Look East," and India's Emerging Influence in the Asia-Pacific', *Asian Security*, 5/2 (2009), p. 102.

⁸⁰ SA. Latif, 'U.S.-India Military Engagement: Steady as they go', *Centre for Strategic and International Studies* [web document] (2012) <http://csis.org/files/publication/121213_Latif_USIndiaMilEngage_Web.pdf>, accessed 21 July 2014, p. 2

⁸¹ *Ibid.*

⁸² Gurmeet Kanwal, *Loc. Cit.* These exercises also included Japan, Australia and Singapore. In total, 28 vessels, 150 aircraft and 20,000 personnel participated in this exercise.

Sino-Indian Relations

India's military modernisation has created both suspicion and attempts at cooperation from China. Although China focuses much of its military attention and threat perception towards the U.S., Japan and Taiwan,⁸³ it has become increasingly clear to China that "India's military modernisation... is no longer couched solely within the India-Pakistan dynamic."⁸⁴ In particular, as a result of India's naval modernisation, there is a Chinese perception that India could blockade the Malacca Strait or Indian Ocean SLOCs in a time of conflict or tension to undermine China's economic and energy security.⁸⁵ In response to India's military modernisation, China has forged close strategic relationships with Bangladesh, Myanmar and Pakistan in order to place land and maritime pressure on India through encirclement, and respond quickly in the event of conflict.⁸⁶

Despite its suspicion of Indian military modernisation, China has made some attempts at cooperation with India. China has realised that India can play a role in regional security, and has welcomed the proposed accession of India to the Shanghai Cooperation Organisation.⁸⁷ Furthermore, in 2013, the two nations held their first counter-terrorism dialogue regarding Afghanistan.⁸⁸ China has also sought to cooperate with India in order to reduce Sino-Indian military tensions. At the 6th Annual Defence Dialogue between the two states, both parties agreed to conduct joint Sino-Indian army exercises, and to cooperate more within the maritime sphere.⁸⁹ Furthermore, they agreed to seek 'peace and tranquillity' along the Sino-Indian border.⁹⁰ Looking to the future, China is likely to remain cautious of India's military modernisation, though it will seek to cooperate at times in order to reduce tensions and promote regional security. Additionally, India still has some concerns about close alignment

⁸³ Eric Gomez, Op. Cit., pp. 119-120.

⁸⁴ Lora Saalman, 'Chinese Responses to India's Military Modernisation', *Chinese Journal of International Politics*, 4/1 (2011), p. 93.

⁸⁵ Sandy Gordon, 'Strategic Insights 58 - India's rise as an Asia-Pacific power: rhetoric and reality', *Australian Strategic Policy Institute* [web document] (2012) <https://www.aspi.org.au/publications/strategic-insights-58-indias-rise-as-an-asia-pacific-power-rhetoric-and-reality/SI58_India.pdf>, accessed 21 July 2014, p. 2.

⁸⁶ David Scott, 'Sino-Indian Security Predicaments for the Twenty-First Century', *Asian Security*, 4/3 (2008), pp. 256-257.

⁸⁷ PTI, 'China welcomes proposed accession of India in Shanghai Cooperation Organisation', *The Economic Times* [web page] (2012) <http://articles.economictimes.indiatimes.com/2012-05-23/news/31826341_1_shanghai-cooperation-organisation-iran-and-mongolia-sco>, accessed 21 July 2014.

⁸⁸ Harsh V. Pant, 'China Reaches Out to India on Afghanistan', *Centre for Strategic and International Studies* [web document] (2013) <http://csis.org/files/publication/130503_ChinaReachesouttoindia.pdf>, accessed 21 July 2014.

⁸⁹ PTI, 'India, China agree on host of defence cooperation measures', *The Times of India* [web page] (2014) <<http://timesofindia.indiatimes.com/india/India-China-agree-on-host-of-defence-cooperation-measures/articleshow/30955838.cms>>, accessed 21 July 2014.

⁹⁰ Ibid.

with the U.S., and would prefer a ‘diversified portfolio of partnerships’ in the region.⁹¹ This presents China with the opportunity to enhance engagement with India to restrict any further growth of the Indo-American military relationship. Whether this will extend to serious Indian engagement in China’s trade and investment project, the Maritime Silk Road, which embraces investment with Southeast Asian and Indian Ocean states, remains to be seen.

V Conclusion

India is conducting a large scale modernisation of its military capacity across six key domains of warfare: land, sea, air, missile/nuclear, outer-space and cyberspace. This modernisation is impeded at times by logistical constraints, as well as poor decision-making and continued hardware obsolescence. Nonetheless, India’s military modernisation bolsters its relative power in the Indian Ocean and Asia-Pacific by improving its ability to ‘assert, defend, deter and assist’. In turn, India’s military modernisation has significantly improved relations with the U.S, as Washington sees it as a strong strategic partner with similar concerns about the region’s security. However, India’s military modernisation has created both suspicion and attempts at cooperation from China. In conclusion, India’s military modernisation provides a net gain for India’s strategic power and regional influence. This modernisation also strengthens India’s capacity to contribute to regional peace and security. However, related threat perceptions, whether from Pakistan or China, will require careful management in order to avoid responses that run counter to India’s security needs.

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⁹¹ Tanvi Madan, ‘India’s Relations with China: The Good, the Bad and the (Potentially) Ugly’, *The Brookings Institution* [web page] (2013) <<http://www.brookings.edu/research/opinions/2013/10/08-india-china-relations-madan>>, accessed 29 July 2014.

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