Trends in Chinese Military Modernization: Implications and Responses

Brig Vinod Anand
About the Author

Brig Vinod Anand is a Senior Fellow at the Vivekananda International Foundation (VIF), New Delhi. He holds a post-graduate degree in Defence and Strategic Studies and is an alumnus of Defence Services and Staff College and College of Defence Management. Earlier he was a Senior Fellow at the Institute for Defence Studies and Analyses, New Delhi. Brig Anand has also been a Senior Fellow at the United Service Institution, New Delhi. His recent publications include monographs on ‘Pak-Af Equation and Future of Afghanistan’, ‘Multi-Vector Politics of Central Asian Republics and India’ and ‘Strategic Environment in Central Asia and India’. Earlier he had authored a monograph on ‘Joint Vision for Indian Armed Forces’ and a book titled ‘Defence Planning in India: Problems and Prospects’. He writes on military and strategic issues including regional and international security. Recently he has presented several papers and written on China’s ‘Belt and Road Initiative’, India’s Act East Policy, Situation in Asia Pacific and Development in SE Asia. At the VIF, he is coordinating research activity and focusing on China and Myanmar.
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Geo-Political Context

The Chinese White Paper on defence of 2015 and the papers issued earlier have been emphasizing that their “national defense policy is defensive in nature... and will never seek hegemony or expansion.” Yet, countries that have been at the receiving end of China’s assertive policies in South China or East China Sea would tend to think otherwise. China remains critical of the US rebalance strategy and its post-World War II military alliance mechanism. According to the paper China does not foresee a major war but says local wars are possible.

On the other hand America’s National Military Strategy (NMS) 2015 document says “Today, the probability of U.S. involvement in interstate war with a major power is assessed to be low but growing.” The US NMS goes on to add that “China’s actions are adding tension to the Asia-Pacific region. For example, its claims to nearly the entire South China Sea are inconsistent with international law. China has responded with aggressive land reclamation efforts that will allow it to position military forces astride vital international sea lanes”. These contradictions only indicate that the security environment in Asia Pacific would continue to remain complex as the competition between a rising and a declining power intensifies.

The drivers of RMA in China, as in case of other countries, emanate from its national security concerns and its strategic ambitions. In any case military modernization occurs in a geo-political and geo-strategic context and is impacted upon by fiscal pressures. Notwithstanding the current downturn, China’s economy has been growing, and so have been its security interests. The fundamental goal of China’s National Defense Policy as outlined in 2004 is “to modernize China’s national defense in line with both the national conditions of China and the trend of military development in the world by adhering to the policy of coordinating military and economic development, and improve the operational capabilities of self-defense under the conditions of informationalization”2. The term informationalization in fact transcends the purely military aspects and acquires larger dimensions at the national level. In 2006, the Director General Xiaofan Zhou of State Council of Informatization Office, PRC had outlined the essential

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goals of informatization as to progress all the way from industrial society to information age society as also to accelerate all the means to move towards this end objective\(^3\).

While there has been some additional emphasis on fighting informationalised wars in the recent White paper on Defence of 2015 there has been no fundamental change since then especially that impact goals of military modernization. Way back in 2004 China had outlined its strategic objectives as to achieve ‘regional military ascendancy’ and extra-regional influence\(^4\). In fact, PLA seems to have achieved considerable success in realizing the stated objectives.

In China’s military and strategic writings, the first two decades of the 21st century are termed as period of ‘strategic opportunity’ when the environment would be conducive for development in both military and non-military spheres. And ‘two centenaries goals’ refer to “building of a moderately prosperous society in all respects by 2021 when the CPC celebrates its centenary; and the building of a modern socialist country that is prosperous, strong, democratic, culturally advanced and harmonious by 2049 when the People's Republic of China (PRC) marks its centenary”. Modernization of military is also being done that is in consonance with these two centenaries’ goals. By 2020 PLA plans to make major progress in its efforts in RMA and by 2049 it expects to achieve the strategic goal of building informationized armed forces that would be capable of winning information age wars. These twin objectives are expected to contribute to achievement of ‘Chinese Dream’ as articulated by President Xi Jinping in November 2012.

**Chinese Military Strategy 2015**

The Chinese have clearly reiterated their national strategic goal, in the Defence White Paper (DWP) of May 2015, of completing the building of “a moderately prosperous society in all respects by 2021”.\(^5\) The paper goes on to reiterate the importance of a strong military in making the country safe and strong, especially in the context of the country’s growing strategic interests and the ‘new situation’. It further states that the combat effectiveness is the sole standard for judging the military. The Chinese armed forces are responsible for “creating a favourable strategic posture with more emphasis on the employment of military forces and means”\(^6\). The DWP also highlighted that armed forces are also responsible for ‘active participation in regional and international security cooperation and effective securing of China’s overseas interests’.

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\(^6\) Ibid
On the question of maritime territorial disputes, China’s approach as the White Paper avers would be to ‘strike a balance between rights protection and stability maintenance’ and work towards ‘preventing crises’. This is what China has been doing in South China Sea as also along Sino-Indian borders where its forces have been putting increasing pressures on its opponents through aggressive and assertive activities. The Chinese have been testing the capacity of the opponents in standing up to their coercive activities and as the pattern suggests they pull back at the last moment before the incident leads to an unmanageable crisis.

**Strategic Guideline and Preparations for Military Struggle**

The PLA’s military strategic guideline of ‘active defence’ continues to dictate current strategy. ‘Preparation for military struggle’ (PMS) is to be carried out based on the construct of ‘winning informationised local wars highlighting maritime military struggle and maritime preparations for military struggle’. Apparently, this is different from ‘winning local wars under conditions of informationization’ that has been in force since 2004. This seems to indicate that PLA is working towards acquiring capabilities for information age wars where ‘Information dominance’ would be the most essential factor in winning a war. Therefore, one cannot say that it is merely a play of words as the new formulation reflects a response to existing battlefield conditions as also likely changes in the coming years.

Informationization, according to White paper of 2015, continues to be the centerpiece of military modernization. The Paper observes that “World major powers are actively adjusting their national security strategies and defense policies, and speeding up their military transformation and force restructuring. The aforementioned revolutionary changes in military technologies and the form of war have not only had a significant impact on the international political and military landscapes, but also posed new and severe challenges to China's military security”.

Further, the guideline of ‘active defence’ does not rule out preemption. In case the adversary is seen as making preparations for any hostile action then an offensive action against him is not precluded. For instance, if an adversary was seen as making preparations for an offensive action then attacking his logistics or other communication networks or for that matter carrying out of cyber-attacks on his critical infrastructure would fall within the concept of active defence. In areas where China claims sovereignty, for instance in South or East China Seas or along the Sino-Indian border any offensive action ab initio by the PLA would be termed as part of its active defence formulation.

In Chinese military thought the conception of peoples’ war still finds an important place; the White Paper advocates giving ‘full play to the overall power of the concept of people's war, persist in employing it as an ace weapon to triumph over the enemy’. This concept is, however, no empty slogan as it has found reflection in the Chinese concept and practice of people’s war in
the information domain where a million of Chinese people armed with computers would take part in people’s information warfare. India, amongst others has been at the receiving end of cyber-attacks said to be originating from China that gives substance to the practice of such a concept.

**Salient Features of Military Modernization**

**A2D2 Capabilities**: As part of its military modernization China continues to develop its capabilities for Anti-Access/Area Denial capabilities. Building its space and counter-space capabilities, improving its capabilities in information operations and cyber operations, adding to its long range precision strikes, nuclear assets and supporting infrastructure besides developing its Integrated Air and Missile Defence are the other aspects of China’s ongoing military modernization that have found their due place in the current White Paper. China has again repeated its ‘No First Use’ nuclear doctrine but it still comes with certain caveats and from all accounts it does not apply to say Arunachal Pradesh which it claims to be its own territory.

**Enhancing Power Projection**. Adding to its power projection capabilities has been the driver of China’s military modernization which has been under way for now over two decades. PLA Navy, Air Force and Second Artillery Force have received special attention since the turn of the century and especially after their Commanders were made members of China’s military Commission (CMC). The current White Paper has highlighted the need for ‘maritime military struggle’ and therefore the requirement of preparing for such a struggle. According to the paper the PLA Navy (PLAN) will gradually shift its focus from "offshore waters defense" to the combination of "offshore waters defense" with "open seas protection". Protection of the strategic SLOCs and overseas interests and building of maritime power for such a task have been underscored. The defence white paper also indicates that the Chinese expect heightened conflict and competition in maritime domain and therefore the exhortations in the paper that that “the traditional mentality that land outweighs sea must be abandoned”.

**Developing a Powerful Navy**: PLA Navy has not only expanded its presence in the Indian Ocean Region it has also acquired an aircraft carrier and has announced that it is building another one and Chinese military writers have forecast requirement of at least three to start with. Some analysts have argued that eventually China may need to establish four aircraft carrier groups with North and East See Fleets going in for one group each and South Sea Fleet going in for two carrier groups7. And PLAN with its expansion plans would have the necessary number of surface ships for its future strike groups. PLANS ambitions can also be gauged from the submarine activity of Chinese navy that has increased exponentially in Indian Ocean Region (IOR) since 2013.

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Further, **space and cyber domain** are other significant areas of military modernization where the paper says that both have become the new ‘commanding heights in strategic competition’. Here again the capabilities to be achieved are with reference to the American prowess in these areas. Both space based assets and cyber capabilities would be necessary to support long range precision weapon systems, smart, unmanned and stealthy platforms as also for integrating all elements of C4ISR and targeting.

At the national level the National Security Law of July 2015 and a Cyber Security Law are geared towards expanding the powers of government to control and restrict online information and activity. As far as India is concerned it has been experiencing China’s capabilities in cyber domain since 2008 when China’s cyber warriors launched attacks against National Informatics Centre, National Security Council and the Ministry of External Affairs. Last year again there were reports of continuing cyber attacks from China against Indian targets. A separate Chinese hacking team, APT30, is believed to have been spying on governments and businesses in Southeast Asia and India uninterrupted for over a decade.

It is not only the PLA but also the Ministry of Public Security and Ministry of State Security that are involved in Cyber operations. It is also well established that China has a number of well organized units and associated structures to undertake information warfare activities. *The Science of Military Strategy* a PLA book with in its 2013 and 2015 editions covers the entire gamut of cyber warfare. Other than the PLA’s special network warfare forces there are PLA authorized teams of cyber forces in government organizations. In addition there is a third type of cyber force which may comprise of private sector personnel, a kind of civil militia.

As part of the ongoing military reforms China has unveiled formation of a new **PLA Strategic Support Force** on December 31, 2015. President Xi while announcing the structural reforms said that “the PLA Strategic Support Force is a new-type combat force to maintain national security and an important growth point of the PLA’s combat capabilities”. The mission of the force has been described as to support to the combat operations with a view to gain advantages in network war, electromagnetic space war and space war. Apparently, the new force is meant to streamline and coordinate cyber and space operations though its structure, organization and processes are yet not very clear. It is expected to provide ‘information umbrella’ to enable both

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defensive and offensive information operations. Obviously, this would enhance the quality of jointness and integration during combat operations.

**Defence Spending**

The current modernization of the PLA can be said to have commenced in the 1990s\(^\text{\textsuperscript{12}}\) with defence spending being increased to double digits, a trend which continues till this day. China’s official defence budget has grown at an average of around 10 percent per year in inflation-adjusted terms from 2005 through 2015\(^\text{\textsuperscript{13}}\). In non-inflation adjusted terms it has increased by an average of 12.9% annually since 1989 when Beijing launched its ambitious modernization program. The Chinese announced an increase in their defence budget for 2015 by approximately 10%. This roughly translates to 890 billion Yuan, or about $US145 billion. The previous year, 2014 had seen an allocation of about 808.2 billion Yuan or $US132 billion, i.e. a 12.2% rise from 2013. While 2015 witnessed a decrease from this rise in percentage terms, it nevertheless marks the fifth consecutive year with a double digit increase in official military spending. The Chinese military budget, at official exchange rates, is one-seventh that of the United States. But on a more appropriate purchasing power parity (PPP) basis, the Chinese military expenditure is about $US 500 billion, about three-quarters that of the United States. External estimates of defence budget are much more as defence expenditure occurs under numerous other heads which are excluded from the main defence budget. In any case Indian defence budget or for that matter that of Japan is a fraction of Chinese defence budget.

Availability of such levels of budgetary funds have enabled PLA to increase its capabilities to a remarkable degree and achieve the goals of its military modernization in the laid down time framework. Growth of the budget has been largely consistent with its economic rise especially so in the last two decades. The percentage of GDP spent on defence i.e. approximately 2 percent is also considered low when compared to countries like the US, Russia and South Korea etc. However, in case of India the percentage of GDP spent is less than two even when the requirement to modernize the defence forces are very high considering the neglect that it has faced for last two decades or so.

**PLA Ground Forces (PLAA)**

**Structural Reforms:** In end November 2015 President Xi addressed a three day conference of the Central Military Commission where he stressed on the restructuring the MRs with setting up of unified combat commands. While the new Theatre Commands will be responsible for military operations, the new Headquarters of each service will take charge of managing and training

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\(^{13}\)Annual Report to Congress, “Military and security developments of People’s Republic of China 2015”
troops. The PLA Ground Forces have become a separate force with a HQ and given a separate flag\(^\text{14}\). This was along with Second Artillery Force being given a separate identity and a Strategic Support Force for the PLA being created. The PLA was being controlled and looked after army by four headquarters - the General Staff Headquarters, the General Political Department, the General Logistics Department and the General Armament Department. The formation of the Army General Command or Army HQs in other words places it directly under the Central Military Commission\(^\text{15}\). This has been done with a view to improve the command and control mechanism over the PLA ground forces as also to enhance combat efficiency. While the new structure becomes responsible for overall administration of the PLA, the Chinese People’s Armed Police and the militia and reserve forces, the theatre commands/ battle zone commands would focus on combat. Roughly, this would be in line with the command and control structures of the US Forces for training, logistics and operations.

Currently, the Navy, Air Force and Second Artillery Corps have their own HQs but the ground force had no such organization\(^\text{16}\). Formally, the MRs were reorganized into Battle Zone Commands or Theatre Commands on 01 February 2016 with President Xi Jinping handing over flags to the five newly appointed Theatre Commanders. The new Commands are Eastern Theater Command, Southern Theater Command, Western Theater Command, Northern Theater Command and Central Theater Command that have replaced the erstwhile seven MRs (Beijing, Shenyang, Ji’nan, Lanzhou, Nanjing, Chengdu and Guangzhou)\(^\text{17}\). Apparently, the boundaries or division of responsibilities of the new Theatre Commands are not very clear but the Western Theatre Command would be looking after Tibet and Xinjiang borders which indeed is a very vast area of responsibility. Xi outlined the task of the five theater commands as ‘they are responsible for dealing with security threats in their respective strategic fields, maintaining peace, containing wars and winning wars’. That is the Commands would deal with both internal and external security threats based on the likely nature of war and conflict.

**Giving Practical Shape to War Zone Concept:** For several years there had been talk of reducing the number of MRs but due to resistance from the old guard and many vested interests this had been difficult to realize. The MRs now converted into theatre commands with


\(^{16}\)Zhao Lei “Xi says PLA overhaul to aid reform”, The China Daily, November 27, 2015. Also see Jiang Jie “Military Revamp Unveiled”, The Global Times, November 27, 2015

\(^{17}\)Zhao Lei and Zhang Yunbi “China Overhauls Command System to Improve Joint Capability”, China Daily, February 02, 2016 available [http://www.chinadaily.com.cn/china/2016-02/02/content_23348897.htm](http://www.chinadaily.com.cn/china/2016-02/02/content_23348897.htm)
streamlined joint command and control structures are better suited to present and future nature of wars and conflicts. This effort is a practical implementation of the War Zone Concept which envisaged evolving a joint HQ for the relevant theatre when the hostilities were imminent. With one Theatre Command looking after Tibet and Xinjiang borders the quality of jointness, integration and flexibility is likely to be greatly enhanced. An integrated and joint response to any adverse situation developing in the region is likely to be quick and timely. There would be streamlining of functioning and efficient utilization of resources for operations. Possibly, India has to work much more on joint and integrated response to any adverse situation developing on our borders given the nature of our organizations and processes.

Organization and Training: As far as PLAA’s training and other capabilities are concerned it has been paying stress on trans-theatre mobility, improving combat effectiveness through forming multifunctional and modular units and enhancing its capability to undertake joint operations. For instance, it is in the process of converting some of the Division sized formations to Brigade size formations with added firepower and capabilities. PRC’s White Paper on Defence of 2013 had emphasized that PLAA “is accelerating the development of army aviation troops, light mechanized units and special operations forces, and enhancing building of digitalized units, gradually making its units small, modular and multifunctional in organization so as to enhance their capabilities for air-ground integrated operations, long-distance maneuvers, rapid assaults and special operations.” From mid-2011 onwards, they had begun the process of transforming parts of their forces into ‘modular combined arms brigade’ focused force structure. The objective is to have a flat organizational structure with streamlined command and control mechanisms and integration of information systems that would be suitable for information era wars. The smaller sized formations will pack more fire power punch with long range precision artillery and rockets combined with vastly improved mobility, helicopter and air support. A variety of smart and precision munitions with integrated C4ISR (Command, Control, Intelligence, Surveillance and Reconnaissance) that ties in ISR means, decision makers and delivery means would add vastly to their capabilities in a local/regional war in informationised conditions.

Reducing Numbers and Streamlining Functions: One of the objectives of military reforms, as outlined by the Chairman of CMC is that the proportion of each service will be adjusted to optimize the operational capabilities. Good administration, setting up of a disciplinary committee auditing, removing corruption and reducing PLA’s commercial activities to nil are other targets of the newly announced reforms. Restructuring and other aspects of reforms are expected to be implemented by 2020.

In conformity with the above objective PLAA is also improving the ratio of enlisted men to the officers by having more NCOs and less of Commissioned Officers. Reduction of non-combat positions such as political entertainment units, headquarters staffs and streamlining of logistics
staffs are some of the other measures of reform. President Xi while addressing the parade on 03 September 2015 celebrating the “70th anniversary of the victory of the Chinese People's War of Resistance against Japanese Aggression and the World Anti-Fascist War” announced a cut of 300,000 from the present estimated PLA strength of 2.3 million. Out of this the PLAA has a combined strength of 850,000 according to White Paper of 2013. The PLAA mobile operational units include 18 combined corps, plus additional independent combined operational divisions /brigades. The Group Armies (GA) of particular concern, in so far as India is concerned are the ones at Lanzhou (21 and 47 Corps) and Chengdu (13 and 14 Corps). However, since PLAA has been practicing trans-regional mobility rest of the Corps can also be brought to bear on Sino-Indian borders in an appropriate framework of time.

Nevertheless, the reduction in number of troops is aimed at improve the teeth to tail ratio and is designed to improve the quality of force by utilizing the costs saved to induct RMA capabilities into the PLA. Many of the logistics and non-combat units/personnel are being either down sized or totally eliminated with possibly some their essential functions being handed over to civil agencies.

Rationalizing of equipment including inducting both modern and state of the art equipment, expansion and integration of Battle Labs, simulation and war gaming centres, and improved training methods including establishment of new training bases are part of the ongoing modernization efforts. Standardization and improvements in unit training, training evaluation, and military education are other salient features of PLA modernization.

Emphasis on Jointness and joint training have been other important aspects of PLA’s efforts towards becoming a modern force. In the last two years there has been stress on high level joint exercises. All four services participated in Joint Action 2015 series of exercises from August to October which involved 140,000 troops. Chengdu and Lanzhou Military Area Commands have consistently taken part in such exercises. Joint Action was designed to integrate all the services to undertake joint operations along the entire spectrum of war and conflict. Use of C4I2SR was made during the exercises to train the command, staff and troops. There was also Fire Power 2015 exercises conducted from July to September 2015 for artillery and air defence which were aimed at linking sensors to the targets as part of a joint and integrated target system. All this also involved simulation of ‘informationized conditions’. Similarly, a series of brigade level


The other thrust areas are development of army aviation units, special operations forces, and air-land mobility that would increase the agility of the force and add to expeditionary capability. PLA has also increased its participation in the UN missions not only as an image building exercise but also to protect its expanding interests (for instance in Africa).

**PLA Rocket Force**

Similarly, the **PLA Second Artillery Force now reorganized into PLA Rocket Force in January 2016** was described by President Xi as a “core force of strategic deterrence, a strategic buttress to the country’s position as a major power, and an important building block in upholding national security.” In his address Xi urged the new unit’s personnel to “enhance nuclear deterrence and counter-strike capacity, medium- and long-range precision strike ability, as well as strategic check-and-balance capacity to build a strong and modern Rocket Force.”\footnote{“China flies flag for modern army”, Shanghai Daily, January 2, 2016 available at \url{http://www.shanghaidaily.com/national/China-flies-flag-for-modern-army/shdaily.shtml}}

The missile force has thus been given a separate identity and HQs which would help the force to develop further and its commander would be able to perform his functions efficiently. Even before President Xi’s current exhortations the force has been strengthening its capabilities for strategic deterrence and nuclear counterattack, and medium- and long-range precision strikes. It has a wide variety of cruise missiles; short- and medium-range ballistic missiles. The PLA is developing and testing new intermediate- and medium-range conventional ballistic missiles, as well as long-range, land-attack, and anti-ship cruise missiles that extend China’s power projection capabilities.

**PLA Rocket Force** has long been a special area of attention of both political and PLA leadership. Even earlier in November 2012 when Xi had taken over as Chairman of the Central Military Commission in he had observed that “the artillery force is the core strength of China’s strategic deterrence, the strategic support for the country’s status as a major power, and an important cornerstone safeguarding national security”. Developments over last few years indicate that the current leadership in China would continue to underscore the importance it
attaches to continually upgrade its missile forces. PLA has been modernizing its short range ballistic missile force by continually fielding advanced variants with improved ranges and payloads. China’s capabilities in both short and medium range ballistic missiles have improved both in qualitative and quantitative terms. It also needs to be noticed that in contrast to China, there is generally an absence of well-articulated political guidance for development of India’s missile capabilities.

**Ballistic Missile Development:** According to the US National Air and Space Intelligence Centre, at present, “China has the most active and diverse ballistic missile development programme in the world. It is developing and testing offensive missiles, forming additional missile units, qualitatively upgrading certain missile systems, and developing methods to counter ballistic missile defences. China’s ballistic missile force is expanding in both size and types of missiles. New theatre missiles continue to be deployed in the vicinity of Taiwan, while the ICBM force is adding the CSS-10 Mod 1 (DF-31) and CSS-10 Mod 2 (DF-31A) ICBMs. The Second Artillery Corps would have additional CSS-10 Mod 2 by end 2015. The new JL-2 submarine-launched ballistic missile (SLBM) is also under development. Future ICBMs will include some with multiple independently-targetable re-entry vehicles, and the number of ICBM nuclear warheads capable of reaching the United States could expand to well over 100 within the next 15 years”.

Insofar as New Delhi is concerned the PLA’s inventory of SRBMS and MRBMS/IRBMs poses a considerable challenge to India’s nascent capabilities. Over 1200 SRBMs (a Rand Report of 2015 puts the number of short range ballistic missiles at 1400) though meant for Taiwan can be easily switched for any regional contingency including that might arise on Sino-Indian border or in the South China Sea Region. The circular error of probability which used to be hundred of meters two decades have been reduced now to five or ten meters. The DF-21 MRBM, in any case with a range of 1500 km can be used for a regional contingency. DF-21D, said to have anti-

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24 According to Admiral Prakash, "India’s National Command Authority (NCA) not only meets infrequently, but is loath to take decisions when it does. This has an adverse impact on decision-making, financial approvals and production-rate of missiles/warheads". He is of the opinion that the management of our deterrent "by a sub-optimal troika consisting of scientists (in the driving seat), bureaucrats and soldiers" is also a debilitating factor. See Manoj Joshi, “India’s missile arsenal ‘failed’ by unreliable missiles”, India Today, September, 04, 2012, available at [http://indiatoday.intoday.in/story/india-indian-nuclear-forces-bulletin-of-atomic-scientists-agni/1/215890.html](http://indiatoday.intoday.in/story/india-indian-nuclear-forces-bulletin-of-atomic-scientists-agni/1/215890.html)


ship capabilities will pose threat to Indian assets operating, say in Bay of Bengal. Not only the ballistic missiles but also the cruise and Hypersonic Glide vehicles of China (Beijing tested hypersonic vehicle in December 2014) have the capabilities to defeat our nascent missile defence and dilute the value of our evolving nuclear deterrence.

**Ballistic Missile Defence:** While pursuing determined efforts to improve the survivability of its land based ballistic missile deterrent, China has never been lax on the potential of and requirement for BMD systems. On 11 January 2007, China surprised the entire world by successfully testing a direct ascent Anti-Satellite (ASAT) weapon. Again on 11 January 2010, it tested its ground based midcourse missile (GMD) interception technology. In an article, Col Wu of PLA emphasized that the success of China's ground-based mid-course missile defence (GMD) test demonstrated significant progress by China in the development of "hit-to-kill," rapid precision-strike, guided and missile identification technologies.²⁸

After the March 2010 Ground-based Midcourse missile defence (GMD) test, some analysts suggested that it could also be a message to India in response to India’s continued testing of the Agni-III and an eagerness to develop the Agni-V ICBM (testing of Agni V was only at the planning stage then) whose logical targets could only be in China. The second GMD test by China in January 2013 came after India’s AGNI V test of April 2012 which could be partly seen as a response to India’s increasing capabilities in the missile field. Chinese media had even suggested that India has under-reported the range of Agni V. Further, there was also some speculation that India is developing AGNI VI with a longer but as yet unspecified range. Though prominent Chinese officials have publicly downplayed or discounted any credible strategic missile threat from India yet they have continued to strengthen their missile defence capabilities. Again in July 2014 China according to its Ministry of National Defence carried out "land-based anti-missile technology experiment," which was said to have "achieved the desired objectives," without divulging much about the specifics of the test.

So far as India is concerned the reported deployment of the DF-21s in Tibet, and the assessed plans for deployment of the JL-1 and JL-2 SLBMs in the Indian Ocean region (IOR), point to an increased readiness of China to move from a minimal deterrent posture to a more aggressive one. Docking of Chinese submarines in Colombo in September and October 2014 was indicative of PLA Navy’s expanding footprints in the IOR²⁹. Whether this capability development is directed at sending the appropriate messages to the US or is the precursor of a robust operational capability is a moot point as far as Taiwan and India are concerned because China already has a sophisticated offensive capability against them using SRBMs (mainly against Taiwan but can


also be shifted and used against India in certain contingencies), IRBMs and MRBMs. Still, the typical Chinese silence on the possible employment of emerging capabilities leads to significant uncertainties in modelling them.

The PLA also tested a hypersonic vehicle, the Wu-14 in December 2014 (it was the third test after the first in January and the second in August 2014) that can penetrate the US BMD as also the limited defence missile capability which India is endeavouring to achieve. The ultra high speed vehicle was able to achieve velocity that was ten times that of sound thus giving it capabilities to penetrate missile defences.\(^{30}\) Evidently, India needs to pursue such technologies that would be cost effective and add to its strategic deterrent. The DRDO is testing a Hypersonic Technology Demonstrator Vehicle; however, the research in such areas needs to be speeded up\(^ {31}\).

Not only has China developed its counter-space capabilities as indicated by the series of ASAT tests as described above it has acquired Russian-made jamming systems and high powered dual use radio-transmitters that can be used against communication and ISR satellites. In addition China has ground based lasers that can be used against space based assets. According to estimates by RAND Organization China had 132 operational satellites as of January 2015; its average rate of satellite launches in period 2009-2014 was more than double that of 2003-2008 and more than triple that of 1997-2002.\(^ {32}\) Out of 132 satellites 48 have been earmarked for operation by PLA\(^ {33}\) though there could be some overlap in the tasks and missions of the satellites. The Report also estimates that both U.S. and China would have approximate parity in space and counter space capabilities in case of a Taiwan and Spratly Island conflict scenarios by 2017.

**PLA Air Force (PLAAF)**

**Developing a Strategic Air Force:** As in the case of PLA Navy the PLA Air Force (PLAAF) is shifting its focus from territorial air defence to both defence and offence, and is building an air force structure that can meet the requirements of informationized operations. The PLAAF has embarked on strengthening its capabilities for strategic early warning, air strike, air and missile defense, information countermeasures, airborne operations, strategic projection and comprehensive support. The PLA Air Force (PLAAF) is the largest air force in Asia and the third largest in the world with an inventory closer to 2,000 combat aircraft (including fighters,  

\(^{30}\) Atul Aneja, “China tests Hypersonic strike vehicle that can breach the US missile Shield”, The Hindu, December 13, 2014  
\(^{33}\) Union of Concerned Scientists, UCS Satellite Database, data as of January 31, 2015.;The UCS data are compiled primarily from the United Nations Registry of Space Objects and the U.S. Space Objects Registry, augmented by news reports and blog posts.
bombers, fighter-attack and attack aircraft). According to some estimates PLAAF has an inventory of around 700 plus modern aircrafts that include jet fighters like J-10, Su-27/J11, Su 30 MKK and five J-15. The PLA Air Force has been improving its inventory in cutting edge fighter aircraft as also developing a variety of aircraft to perform several roles for both defensive and offensive tasks. It has also improved its capabilities in C4ISR, electronic warfare (EW) data links. According to one study by 2017, 60 percent of PLAAF fighter inventory would comprise of fourth generation aircraft.

**Training over Tibet Plateau:** PLAAF pilots have been training on Tibet plateau in bad weather conditions and in conditions of darkness; they have carried out joint exercises with the PLAA units in Tibet to hone their joint capabilities. For instance, PLAAF has practiced ground attacks in conjunction with army and artillery units. It has also been revealed that PLAAF has modified its J-10 fighter aircrafts to operate in the higher altitudes of Tibet which severely restricts its performance in many operational parameters. Tibetan plateau in winters is freezing cold when it becomes difficult for the PLAAF jet fighters to fly therefore usually it had been exercising in favourable weather conditions of summer. This exercise was also aimed at testing out the new improvements and modifications made to their jet fighters and associated equipment to operate in sub-zero temperatures. The degree of advantage enjoyed by India because the PLA jets have to take off from 10,000 to 12,000 feet high airfield (thus with less payload) would be narrowed. Further, PLAAF is modernizing rapidly and the air fleet size could be almost triple of our Air Force fleet.

**Accelerating the Transformation:** In April 2014 President Xi Jinping, while visiting PLAAF HQ tasked the air force to speed up its transformation into a strong power with an integrated air and space capability and stressed that the air force plays a decisive role in national security as well as military strategy. He has also underscored the need for the PLA Air Force to have balanced strength in defensive and offensive operations. Similarly, Senior Colonel Wu Guohui of the PLA National Defense University had indicated earlier that the PLA air force had undertaken a series of research projects aimed at keeping pace with the latest space technologies. According to him space-based information can reshape air combat and space vehicles and the same would be the key to forming an air-and-space weaponry system. Further, the construction of a modern air-defence and anti-missile apparatus could be achieved through the integration of air and space capabilities. As in case of other arms and services of the PLA, the US armed forces seem to be their peer competitor that needs to be emulated. Through this kind of approach the militaries of

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34 International Institute of Strategic Studies, Military Balance 2015
regional competitors would eventually present not much of a challenge though they also need to be reckoned with.

China has developed the J-10B follow-on to its first indigenously designed fourth-generation fighter and it is expected to enter service in the near-term. To further bolster its tactical aircraft forces, China has signed a contract in November 2015 to acquire two dozen Su-35 advanced aircraft from Russia along with its advanced IRBIS-E passive electronically scanned array radar system. Su-35 is a long range fourth generation plus aircraft that is expected to bridge the gap between the J-10 and under development fifth generation fighters with stealth capabilities. China has been pursuing fifth-generation fighter capabilities for some time and is the only country in the world other than the United States to have two concurrent stealth fighter programs i.e. J-20 and possibly J-31 in progress. Many analysts believe that small order for 24 Su-35 points towards China’s intentions of reverse engineering and copy some of the advanced technologies including its advanced engine (Saturn AL-117S) that could be used for its stealth jet fighter programme like it did for Su27SKs which were rechristened as J11B.

China also uses a modified version of the H-6 aircraft to conduct aerial refueling operations for some of its indigenous aircraft, increasing their combat range and has received three IL-78s from Ukraine outfitted as air refuellers with negotiations for additional aircraft ongoing. It has H-6K strategic bombers that can now launch all-weather, long-range, precision strikes. In 2014, it took delivery of the first of three IL-78M tanker aircraft from Ukraine.

PLAAF is adding to its air defence capabilities with conclusion of an agreement with Russia to acquire the first round of S-400 modern anti-aircraft missile systems to China within the next 12 to 18 months. In addition to providing improved air defence protection such systems also have missile defence capability that would impact India’s strategic deterrence. S-400 ABM capability is said to be comparable or superior to that of the U.S. Patriot and thus would provide China with a quick missile defense upgrade. The system includes an active electronically scanned array (AESA) radar and can target aircraft, cruise missiles, as well as tactical and ballistic missiles at ranges up to 400 km. The smaller 250 km-range 48N6 and 120km-range 9M96E2 missiles are also equally lethal against fighters, bombers, early warning and electronic warfare aircraft, as well as cruise and ballistic missiles. They are expected to be deployed for protection of major bases like the Hainan submarine pens, important cities such as Beijing and Shanghai etc.

**PLA Navy Expanding its Reach**

PLA’s ambitions in Indian Ocean can be gauged from the fact that some of the Chinese think tanks and analysts have suggested the need for PLA Navy to acquire bases. Huanqiu Shibao

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writing in Global Times on May 25, 2011 had observed that if the world really wants China to take more responsibilities in Asia-Pacific region and around the world, it should allow China to participate in international military co-operations and understand the need of China to set up overseas military bases. Recently, Senior Captain Zhao Yi of China’s National Defense University stated that Indian Ocean should not be viewed as India’s backyard. He also mentioned that possibility of clashes could not be ‘eliminated’ if Indian Ocean were to be continued to be viewed as India’s backyard.

The development of the PLAN has been in keeping with a three step development strategy dovetailed into extending its maritime control of the concept of the ‘Three Island Chains’. The PLAN has been inducting the *Luyang* class of destroyers from 2004 onwards with the latest of the class, the *Luyang III*, being inducted from 2014. The PLAN had also inducted three *Sovremenny* class destroyers from Russia in the early 2000s. Consequently, the average age of the destroyer fleet is about 10 -12 years. A large number of frigates have also been inducted, with the *Jiangkai II* class being inducted from 2008 onwards. Other classes of ships like ASW corvettes, supply ships and refueling tankers are also being continuously inducted with progressive replacements of older vessels. The intensity of this induction programme can be gauged from the fact that 2013 alone witnessed the induction of two destroyers and three frigates. These inductions will give the PLAN the required long legs to pursue extended operations beyond the Second Island Chain. The continued deployment of the Piracy Escort Groups in the Gulf of Aden from 2008 underlines the capability of the PLAN to conduct protracted operations at extended ranges from its home ports.

The PLA Navy has over 300 surface ships, submarines, amphibious ships, and patrol craft. According to Pentagon’s report on China’s Military of 2015 China is rapidly retiring legacy combatants in favor of larger, multi-mission ships, equipped with advanced anti-ship, anti-air, and anti-submarine weapons and sensors.

The last decade has seen the PLAN inducting two new classes of nuclear submarines, namely the *Shang* class SSNs and the *Jin* class SSBNs. The same period has also seen the PLAN inducting the *Yuan* and *Song* class conventional submarines. The PLAN is also believed to be developing another class of SSNs and SSBNs which will incorporate latest advancements in stealth technology forces. The *Yuan* class submarines are also being exported to the Pakistan Navy in the near future. The recent docking of Chinese submarines in Sri Lanka is a pointer to the increased endurance of these submarines. Not only is the purpose of China’s submarine deployments in the IOR to collect intelligence but also to train the crews in operating far from...

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38 “Strategic Direction of the Chinese Navy – Capability and Intent Assessment”, KK Agnihotri, Bloomsbury 2015, Chapter 5, Page 76
their shores and home bases. Travelling to East African ports as part of counter piracy missions adds to their operational capability for executing military missions if the need so arises. Thus the current and future acquisitions of submarines are likely to give the PLAN a potent sea denial capability which gives further credence to the A2AD concept.

The Pentagon Report also indicates that PLA Navy places a high priority on the modernization of its submarine force and currently possesses 5 nuclear attack submarines (SSN), 4 nuclear ballistic missile submarines (SSBN), and 53 diesel attack submarines (SS/SSP). By 2020, this force will likely grow to between 69 and 78 submarines.

The facility at Yalong Naval Base at Hainan Island has been developed to base not only ships but also to house underground pens for berthing submarines. The location of the base, in the South China Sea, will permit the PLAN to rapidly deploy its assets to disputed territories as also into the strategic sea lanes to the south and west emanating from the Malacca straits. Further, the development of airstrips on Subi, Fiery Cross and Mischief Reefs in the Spratlys will permit employment of maritime aircraft. This will greatly extend Chinese capabilities of surveillance in these contested areas.

The aircraft carrier, Liaoning, was commissioned into the PLAN in September 2012 and has added a new facet to the evolving capabilities of the PLAN. For the time being Liaoning is expected to be utilized for training personnel including the crews of the J-15. Towards the end of year 2015 China’s Defence Ministry’s spokesman confirmed plans to build a second aircraft carrier indigenously in Dalian. The carrier with a displacement of 50,000 tonnes will have for J-15 fighters stationed on it besides other aircrafts/helicopters. In comparison India’s aircraft carrier INS Vikrant is 40,000 tonnes and the next in series INS Vishal would be around 65,000 tonnes. The availability of carriers will give the PLAN the much needed ability to carry out operations with integral air defence against adversaries in for safeguarding their maritime interests. The Carrier after its construction and operationalization is likely to be based in Hainan naval base. Further, PLAN has enhanced its amphibious lift capabilities with indigenously built Yuzhao (Type 071)–class amphibious transport; the new Yuyi air cushion landing aircraft along with a variety of other naval assets would enable PLAN to send out an expeditionary force. This would have implications for Indian island territories like the Andaman and Nicobar islands.

China has developed an ASBM capable of attacking aircraft carriers in the western Pacific with a range of about 1500 km. Combined with suitable long range detection systems like Over the Horizon (OTH) radars and surveillance aircraft, the Chinese will have a unique capability to dissuade US carrier groups from venturing into the proximity of the First Island Chain. Under

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42 Ibid. Page 10.
certain contingencies and after development of its space-based surveillance and target acquisition capabilities and honing its precision skills ASBM’s use against hostile naval platforms in Bay of Bengal cannot be ruled out. In fact, in first two weeks of February several exercises involving simulated use of DF-21 D ASBM have been conducted.43

Added to the above is the development and training the PLAN Marine Corps on the similar lines to that of US Marine Corps. In January the Marine Corps carried out a Trans Theatre Command exercise that involved movement and power projection over a distance of 6000 kilometers. The marines were part of South China Sea Fleet and they moved for their mission to cold climes of Gobi desert. While denying that PLAN was developing expeditionary capabilities in the western sense the Chinese spokesmen stated that such a capability was meant for carrying out UN mandated peace and stability-maintenance missions44. Marine Corps for last three years or so have been carrying out training exercises in a variety of terrain to be ready for special operations, amphibious missions and for any such contingencies that would need elite power projection forces. It is also interesting to note that PLAN Marine Corps had conducted a joint exercise with Tanzania in November 201445 with counter terrorism as the main theme. Developing such capabilities has implications not only for the regional powers but also for countries that are far away.

Civil Military Integration

Another significant feature of China’s ongoing military modernization has been the Civil-Military Integration (CMI) of capabilities and resources. The defense white paper 2015 underscores the need for an enhanced integration and coordination between civil and military efforts and states that PLA will “set up a system and a working mechanism for overall and coordinated programming and planning.”

All along the Sino-Indian borders China has created infrastructure that has dual use for both military and civilian purposes. Similarly, based on the logic that naval warfare requires mobilization and deployment of large number of ships, China's government has passed new guidelines in June last year requiring civilian shipbuilders to ensure their vessels can be used by the military in the event of conflict. The regulations require five categories of vessels including container ships to be modified to "serve national defence needs". Costs of conversions are to be borne by the government. One wonders whether such preparations point towards an increased likelihood of a naval conflagration.

45 “Amb. Lu Observed Transcend 2014 Joint Training Exercise with Marine Corps of China and Tanzania”,

http://www.vifindia.org © Vivekananda International Foundation
CMI effort has a much larger ambit that aims at speeding up military industrial development to support its military modernization efforts. In March 2015 President Xi while speaking to a PLA delegation had remarked that ‘CMI processes were in need of reform in order to break new ground in developing the PLA's capabilities. According to him ‘efforts must be made to ensure "coordinated, balanced and compatible development" of the country's economic and national defense capabilities’.

The dual-use of the airports on the Tibetan plateau is part of such a strategy the integration of civil-military airports to "strengthen aviation safety and combat support capabilities." The integration will include joint maintenance of airport support facilities, joint flight safety support and joint airport management. The Lhasa Gongkar Airport in Tibet and Sunan Shuofang International Airport in Wuxi in Jiangsu province have been designated as the first two pilot PLA/civil airports to implement the 'integration'.

Projections for completion of such integration for Lhasa and Sunan airports were end of 2015 and for all others was 2016. Similarly, construction of an extensive network of road and railways in Tibet would both serve the civilian and military missions. Not only will it facilitate tourism and exploitation of natural resources but also enable speedy induction of military forces for both internal and external contingencies.

PLA Modernization and OBOR Initiative

China has been pushing its Maritime Silk Road (MSR) as part of its ‘One Belt One Road’ (OBOR) strategy since fall of 2013. President Xi Jinping has outlined the major thrust of China’s foreign policy ‘to make peripheral countries kinder and more intimate to China and meanwhile more recognize and support China, thereby increasing China's affinity and influence’. This ‘periphery diplomacy’ is expected to address China’s need for a stable external environment, which in turn would be conducive to domestic economic reform. The goal of this policy is to enhance China’s overall influence in its periphery, and at the same time assuage concerns of neighbours about China’s assertive foreign and security policies.

The OBOR strategy is believed to be China’s answer to the American ‘rebalance to Asia Pacific’ strategy which has political, economic and strategic contents. With the expansion of China’s interests overseas it is yet to be seen how PLA would operate to protect its burgeoning

interests abroad. Though modernization of PLA and enhancing its power projection capabilities would certainly enable it to secure its interests overseas when so required yet the moot point is whether it will follow the American example of procuring military bases abroad or will it devise some new methods with Chinese characteristics? Building of dual purpose ports like Gwadar in Pakistan and some others in the IOR encompassing its MSR initiative seems to be one such alternative which China has apparently adopted to suit the current strategic environment. Favourable geopolitical conditions would help PLA navy to enhance its presence and holding capacity in the IOR in an incremental manner in the coming years.

Gen Zhu Wenquan, former Commander of Nanjing Military Area Command, in an interview has highlighted that “Actually the Belt and Road Initiative proposed by China, which is not only an economic issue, but also a political and military issue. It is a successful breakthrough achieved by China after more than ten years of strategic deployments.”

Liu Cigui, Director, State Oceanic Administration (and now Governor, Hainan Province) in an article has stated that “Like posts along the ancient Silk Road, ports along the new Maritime Silk Road will act as “posts on sea” that handle cargo and resupply ships and people. Such “sea posts” also must provide safe and convenient sea lanes for all countries to make use of. The 21st Century Maritime Silk Road will thus able to cover and drive more countries to create sea posts.”

Acquiring logistics base at Djibouti by China for its naval and other maritime platforms could be viewed as a ‘sea post’ or a naval base in the making depending upon the strategic environment and other considerations. China has justified it stating that it needs logistic support for anti-piracy operations in Gulf of Aden as also for support of its UN missions. The strategic importance of Djibouti is well known because of its location since it is a choke point at the mouth of Bab-el-Mandeb connecting Indian Ocean and the Red Sea. Needless to say that such a ‘sea post’ would boost China’s power projection capabilities.

Even before the OBOR initiative was unveiled Chinese scholars and naval officers have been arguing for the need to establish overseas bases for protecting their growing economic and other interests. “Setting up overseas military bases is not an idea we have to shun; on the contrary, it is our right. Bases established by other countries appear to be used to protect their overseas rights and interests. As long as the bases are set up in line with international laws and regulations, they are legal ones. But if the bases are established to harm other countries, their existence becomes...”

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illegal and they are likely to be opposed by other countries”\(^\text{51}\) observes one scholar in an article of 2010. Earlier in 2009 Senior Colonel Dai Xu of PLAAF had argued for acquiring of overseas bases to safeguard commercial interests and world peace in an article\(^\text{52}\).

### Regional Implications/Responses

China’s military modernization and its assertive activities in South China Sea and elsewhere have motivated the ASEAN members especially those affected by Beijing’s aggressive policies to seek outside support as a part of balancing exercise against China. For instance, countries like Vietnam and Philippines are strengthening their strategic relationships through political, security and defence cooperation with outside powers like the U.S. and others. On the other hand, the US as a response to China’s rising profile, has been attempting to stage a comeback in this region through its pivot to Asia or rebalance to Asia strategy that has political, military and economic components. In addition, the SE and East Asian countries through multi-lateral structures like ASEAN are also attempting to engage China to address their security concerns. The geo—strategic implications of China’s OBOR initiative need to be determined especially of the ports of Gwadar, Hambantota and elsewhere in the Indian Ocean littoral.

China’s military modernisation and its aggressive activities have also spurred other important powers in the Asia-Pacific region like India, Japan, Australia and others to evolve their own responses to maintain a strategic equilibrium in the region.

Further, as part of internal balancing the SE Asian countries have been increasing their military deterrence capabilities. Thus the defence budgets of SE Asian countries have been rising since the last decade which is also driven by China’s military modernization to an extent. The region has seen steady growth in military expenditure between 2010 and 2014. There were net increases for all countries, averaging 37.6 percent. Southeast Asian countries spent $38.2 billion on defense in 2014.

Southeast Asian nations are spending more on their navies and coastguards due to rising tensions in the South China Sea. But as their capabilities grow, so does the risk that any confrontation in the contested waterway will be harder to contain. According to one analysis the annual defence spending in Southeast Asia is projected to reach $52 billion by 2020, from an expected $42 billion last year; the emphasis is on modernization of their navies where creation of artificial islands and other activities of China have caused concerns and added to the risks of conflagration.

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52 “Colonel: China Should build offshore base to assume responsibility of a big country”, February 5, 2009 available at [www.chinareviewnews.com/doc/7_0_100877861_1.html](www.chinareviewnews.com/doc/7_0_100877861_1.html)
India needs to assess China’s expanding presence in the IOR and how may it affect India’s maritime interests. Though Indian Navy has come out with its latest version of Indian Maritime Security Strategy of October 2015 with expanded areas of strategic interest that cover seas from the Western Pacific to Western coast of Africa yet, it is not clear how will it be able to protect its interests in such a vast domain given the inadequacy of resources. There are also no indications regarding long term projections for acquisition of such capabilities to match its much expanded mandate. Further, as has been the bane of the individual services’ strategies and perspective plans there has been lack of integration despite the fact that 15 year Long Term Integrated Perspective Plan exists but only in name. All the services do not have a shared perspective in the absence of a well articulated national security strategy or a national military strategy.

Similarly, the problems of lack of adequate infrastructure along the Sino-Indian border and a very slow build up the facilities in the border areas are well known. Shortages of equipment and induction of much delayed weapon systems into the Army; bringing up of the Indian Air Force to the required strength of fighter squadrons are imperatives. Enhancing strategic deterrence capabilities in order to maintain a strategic equilibrium in the region and safeguard our national interests is an imperative. An efficient C4ISR system along with adequate space based assets and capabilities in cyber domain would be additional factors that would enhance the quality of our deterrence. Indian RMA which is proceeding at a glacial pace needs to be speeded up with the provisioning of adequate defence budget and integration of modernization plans.
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The Vivekananda International Foundation is an independent non-partisan institution that conducts research and analysis on domestic and international issues, and offers a platform for dialogue and conflict resolution. Some of India’s leading practitioners from the fields of security, military, diplomacy, government, academia and media fields have come together to generate ideas and stimulate action on national security issues.

The defining feature of VIF lies in its provision of core institutional support which enables the organization to be flexible in its approach and proactive in changing circumstances, with a long-term focus on India’s strategic, developmental and civilisational interests. The VIF aims to channelize fresh insights and decades of experience harnessed from its faculty into fostering actionable ideas for the nation’s stakeholders.

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