
Transformation of the Indian Army in the New World Order

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Introduction

The security strategy of a nation is based on harnessing the cumulative strength of its various instruments of national power. These, amongst others, include the economy, diplomacy, information and military. Nations periodically undertake the necessary transformation of their armed forces in order to optimise their potential. “Transformation is a process that shapes the changing nature of military competition and cooperation through a new combination of concepts, capabilities, people, and organisations that exploits the nation’s advantage and protects against asymmetric vulnerabilities to sustain the strategic position, which helps underpin peace and stability in the world. Transformation anticipates and creates the future and deals with the co-evolution of concepts, processes, organisation, and technology.” It is, however, important that “military transformation” should simply be understood to mean “profound change” in military affairs.¹ It need not imply rapid or across-the-board change, nor the discarding of that which continues to work well. The changes, however, should be dramatic rather than mere improvements on the margins to existing military hardware or processes.

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The study of ‘transformation’ undertaken by world militaries has lessons for us. Their transformation has been due to change in their security environment, and, thus, their National Security Strategy (NSS), necessitating a change in the doctrine, organisation, and capabilities. It has also been driven by technological advances and budget constraints. The United States (US), in particular, which has participated in 14 major and around 300 minor military operations around the world after 1945, has undertaken major transformations, with many lessons to be learnt.

The Indian armed forces have their roots in the organisation, structure, and capability they inherited in 1947. In the transformation into the Indian armed forces, they imbibed the Service and institutional ethos of the British armed forces.² Transformation in our strategy, doctrines and military capability has come about each time we have been to war. However, it has not been at the desired pace and intensity, primarily due to limited fiscal support, and also due to the lack of an integrated government approach. As the world and our neighbourhood are witnessing a changing world order and security environment, it is imperative that we study the transformations already undertaken, identify new transformation goals, and recommend the required capabilities. This article will identify the lessons from the US transformation process, examine the transformation already undertaken by the Indian Army and recommend the way ahead, including the future capabilities required in the Army.

Lessons from Transformation: US Army

Since 1970, the US Army underwent two major transformations. The first, in the aftermath of the Vietnam War, paved the way for the American Army’s new role in Europe with the military’s focus on the North Atlantic Treaty Organisation (NATO) and mechanised warfare. The second, at the end of the Cold War era, shifted the focus of the military from large mechanised operations in Europe against the Soviet Union to conduct of expeditionary operations around the world, based on US interests.

Till late 1990, such transformations were guided by various commissions and committees which laid down the overall strategy,³ and orientation for transformation for the next 20 years, with major emphasis on technological development. The 1989 Base Force concept proposed a minimum force structure, with cuts in the budget.⁴ In 1995, the Commission on Roles and Missions of the Armed Forces made its recommendations for increased privatisation, use of the reserve component and mandated the publication of a Quadrennial Defence Review (QDR), all of which were adopted. The Army Training and Doctrine Command (TRADOC) was established and Army modernisation focussed on the important and critical equipment.

In 1986, the Goldwater-Nichols Act, resulted in the creation of unified combatant commands under unified, geographically organised command structures.⁵ In 1994, RAND research on defence planning recommended adoption of “capabilities-based planning”, force restructuring based on smaller unit building blocks, the requirement of expeditionary forces and development of asymmetric capabilities.⁶ One of the reports also urged “preparation for the possibility of a catastrophic terrorist attack on the homeland,”⁷ although it did not predict one. Doctrines were also suitably modified/evolved to meet the transformation. After the Vietnam War, the U.S. Army updated its main operational doctrine publication, *Field Manual 3-0*, seven times.⁸ Transformation had its share of vociferous supporters and sceptics.

After the first QDR 1997, subsequent QDRs were issued in 2001, 2005, 2010 and the last one in 2014. In 2018, Donald Trump replaced the QDR with a National Defence Strategy (NDS). Each of the QDRs articulated the NSS, priority areas and transformation goals. These documents served as guidelines to all the stakeholders involved in ensuring the security of the nation and became the reference point for all transformation. QDR 2001 elaborated on the new role for the Special Operations Force (SOF) and the support it would require. QDR 2005 highlighted four distinct areas of priority: defeating extremism and the terrorism that it spawns; in-

depth defence of the homeland; shaping the actions of states at crossroad points; and, dissuading or preventing hostile states and non-state actors from gaining Weapons of Mass Destruction (WMD).⁹

The Joint Defence Capabilities Study of March 2003 highlighted the importance of joint needs and joint capability assessments and that the capabilities must be “born joint” wherever possible. QDR 2010, a war-time document, provided a strategy aimed at rebalancing US military capabilities, reforms, defence processes and institutions in order to prevail in the ongoing wars; prevent and deter future conflicts; and defeat adversaries in a wide range of contingencies.¹⁰ It acknowledged issues related to a rising China and the importance of ties with India. This was followed by the Defence Strategic Guidance (DSG) 2012.¹¹ The government concluded that the most important elements of transformation would be organisational and managerial. It, therefore, brought in the necessary changes in the matter of governance and management in the Department of Defence (DoD) to make transformation successful.

The NDS issued in 2018 was classified and only an unclassified summary was released in the public domain.¹² The NDS aimed at sharpening the American military’s competitive edge. It reiterated that the US should remain the preeminent military power in the world, ensure a favourable balance of power, and advance an international order that would be most conducive to US security and prosperity. It elaborated on the five major challenges faced by the US military: China, Russia, North Korea, Iran, and terrorists.¹³ The preeminent theme and priority were to counter China and Russia across the entire spectrum of conflict, including the ‘grey zone’. The NDS also subtly conveyed that these two challenges were different, with China being the first among equals.

The concept of Revolution in Military Affairs (RMA) was introduced with the publication of the 1992 Military Technical Revolution (MTR) Assessment. It concluded that new technologies would make the current forces better in fighting with existing operational concepts and

organisations and that it would also revolutionise the conduct of war itself. In 1993, the term “military technical revolution” was replaced with “revolution in military affairs” and it was elaborated that while technological advances made the revolution possible, the revolution itself would only be realised when new supporting operational concepts and military organisations were created. RMA was amplified as, “An RMA is what occurs when the application of new technologies into a significant number of military systems combines with innovative operational concepts and organizational adaptation in a way that fundamentally alters the character and conduct of conflict ... by producing a dramatic increase—often an order of magnitude or greater—in the combat potential and military effectiveness of armed forces”.¹⁴

The modular force transformational project has many useful lessons. In 2003, the US Army began implementing force restructuring to address the challenges of waging war and conducting extended stabilisation operations. One of the changes involved transforming the Army from its traditional, division-based force into a brigade-based force, through the concept of “modularity”.¹⁵ TRADOC Pamphlet 525-5 defines modularity as “a force design methodology that establishes a means to provide interchangeable, expandable, and tailorable force elements”.¹⁶ Modularity entailed replacing the division-centric force structure with a force whose constituent building blocks are brigades and Brigade Combat Teams (BCTs). BCTs were rebuilt by making proportionate combat, combat support, and combat service support, formerly provided by the host division, organic to the BCTs’ organisation. In the process, the Army reduced the number of combat brigade types from 17 to three: infantry BCTs, heavy BCTs, and Stryker BCTs. The move to modularity provided the Army with a greater number of smaller, very capable force packages, making it easier to sustain the protracted operations in Iraq and Afghanistan. Combat support and combat service support units and force structure were also redesigned to make the entire force more modular.

A study by the RAND Corporation on the efficacy of the restructuring concluded that the modular force structure was superior to the earlier force structure in terms of its ability to contribute land power to current and reasonably foreseeable joint operations.¹⁷ It had flexibility and versatility across the range of military operations and associated risks. The analysis also established that the modular force structure produced a larger tactical force with a larger number of more aggregated capabilities than the previous force structure.

The US Special Operations Command (USSOCOM) was established in April 1987 and had its origin in the aftermath of Operation Eagle Claw, the disastrous hostage rescue attempted at the American Embassy in Iran in 1980. Since 2001, USSOCOM had doubled its manpower, tripled its budget, and quadrupled its overseas deployments.¹⁸ Despite the increase in size over the last decade, the SOF consists of only 60,000 personnel. Given its ability to operate in a wide range of environments and undertake tactical actions that produce disproportionate strategic effects, the SOF is increasingly relied on to help address national security threats and challenges on a global scale.

The study of the transformation process of the US Army has many lessons for us. Importantly, it is a whole of government process and is primarily driven by the NSS of the country, which is formally issued by the government, thus, signalling its importance and ownership. Amongst other issues, the NSS normally includes guidelines on employment of the military, the force structure, the capabilities to be developed and the transformation to be achieved. In planning the transformation, capability-based planning is preferred to threat-based planning. The desired and approved transformation can be undertaken successfully, only if the government provides the necessary fiscal support. Whenever the security environment improves, governments have a tendency to downsize the armed forces and save on cost. The process of transformation, including capability development, must be open to review and modification as

the security environment changes. Adopting technology is critical to enhancing war-fighting capability as it revolutionises the conduct of war itself. However, for the RMA to be truly realised, technological advancement has to be accompanied by a new doctrine and new structures where required. Doctrinal changes must be undertaken to suit the transformation.

In view of the increasing importance of joint operations and inter-Service integration, identifying joint needs and undertaking joint assessments need to be the norm based on a realistic appreciation. In order to support major transformation, the Ministry of Defence (MoD) too needs to be correctly organised, oriented and business rules suitably modified; management support has to be seamless. Investing in Special Forces pays rich dividends. While developing capabilities, it is important to ensure that the planned technologies can be enmeshed. It is important to have a central agency with adequate authority to implement transformation. The element being transformed, the military, must be convinced of the need and process, for which the senior military leadership must lead the way.

Transformations in the Indian Army

The Indian Army underwent two major transformations: one in the aftermath of the 1962 Sino-India War and the second based on the recommendations of the General KV Krishna Rao Committee of 1975. The Higher Defence Organisation (HDO) too underwent a limited transformation based on the recommendations of the Kargil Review Committee, Group of Ministers and Naresh Chandra Committee.

After the 1962 War, an accretion of 3.25 lakh troops enabled raising of four new mountain divisions, HQ Central Command, and conversion of a standard division into a mountain division. Some 9,000 officers were granted emergency commission.¹⁹ Training in mountain and high-altitude warfare was given renewed impetus. Coupled with major upgradation of

weapons, equipment, and vehicles, these changes improved the overall defensive capability. This transformation also enjoyed the requisite financial support with the defence budget being over 3 per cent of the Gross Domestic Product (GDP), the highest being 3.84 in 1963-64.

The 1971 Indo-Pak War was a resounding victory for India. It saw the liberation of Bangladesh and surrender of 93,000 Pakistani troops. Operations on the western front established the necessity of mechanised forces for operations in the obstacle ridden terrain of the plains and the open deserts in the south. In 1975, the government appointed an expert panel under then Lieutenant General KV Krishna Rao, with Major Generals ML Chibber and K Sunderji as members, and Brigadier AJM Homji as Secretary. The recommendations of this panel set the stage for the major mechanisation in the Indian Army. Mechanisation received a major impetus once General K Sunderji later became the Chief of the Army Staff (COAS). The Mechanised Infantry Regiment was raised on April 2, 1979, with General K Sunderji as its first Colonel of the Regiment. The Reorganised Army Plains Infantry Division (RAPID), with an enhanced mechanised component, was introduced. General K Sunderji provided the strategic mooring for the employment of the mechanised forces which today consist of 65 armoured regiments, 48 mechanised infantry battalions, and the requisite mechanised combat support elements. They form the decisive strategic force of the Indian military. Mechanisation also ushered in a welcome change from defensive operations to the current doctrine of proactive offensive operations.

The increased Pakistan sponsored insurgency in the Kashmir Valley in the 1990s necessitated the raising of the Rashtriya Rifles (RR), a dedicated special Counter-Insurgency (CI) force for the Valley. A total of 64 battalions were raised and are currently deployed in the Valley and northeast. With prolonged CI operations in the Valley, a need was also felt for additional Special Forces (SFs). This was met by converting the regular parachute battalions into SF battalions and raising a few additional SF units.

Numerous organisational changes were made to enhance the operational efficiency of the Army. Immediately after the 1971 War, the Northern Command was reformed under Lieutenant General PS Bhagat. The Army Training Command (ARTRAC) was raised in 1993. In 1999, 14 Corps was raised, with operational responsibility along the Line of Actual Control (LAC) and the Siachen Glacier. After Operation Parakram, the Southwest Command was raised in April 2005, and in September 2005, 9 Corps was raised. These changes enabled better synergy and availability of reserves, which enhanced the offensive defence capability. Subsequently, in January 2014, 17 Corps, the new mountain strike corps, was raised to meet the emerging operational requirements along the northern borders with China. In addition, many new initiatives were taken to improve the overall Professional Military Education (PME) and institutional training. Commencing 1993, women were inducted into the Army, in other than medical services. Their induction into combat arms is yet to commence.²⁰

Consequent to the Kargil conflict of 1999, a major review of national security management was undertaken by the Kargil Review Committee (KRC), headed by the late Shri K. Subrahmanyam.²¹ The Cabinet Committee on Security (CCS) appointed a Group of Ministers (GoM) headed by Deputy Prime Minister and Home Minister L.K. Advani to study the KRC Report and recommend measures for implementation. The CCS accepted the GoM's recommendations entirely except for the creation of the post of Chief of Defence Staff (CDS). This review resulted in the establishment of Headquarters Integrated Defence Staff (HQ IDS); Andaman & Nicobar and Strategic Forces Commands; Defence Intelligence Agency (DIA); National Technical Research Organisation (NTRO) and National Defence University (NDU). It also resulted in the promulgation of the Defence Procurement Procedure (DPP); constitution of the Defence Acquisition Council and Defence Technology Board, and a policy on border management: "one border one force".

The various modernisation programmes undertaken by the Army over the last few decades have improved its firepower, lethality, mobility, surveillance and reconnaissance capability, communications and aviation. Coupled with improved logistic infrastructure and operational logistic capacities, the Army is today capable of rapid mobilisation and undertaking relentless offensive action over protracted periods, in various types of terrain. Intelligence operations too have seen a quantum jump, with major improvements in signals, electronic and imagery intelligence capabilities. This has been realised through major developments in the country's satellite programmes.²² The Defence Communication Network set up in 2016 is the backbone for efficient and secure tri-Service communication. It is a strategic, secure and a scalable system with a pan-India reach.

The present COAS, General Bipin Rawat, has initiated a major transformation programme²³ for the Army which aims at a reduction of 50,000 uniformed personnel. This is to be in addition to the reduction of 57,000 personnel, including 30,000 civilian employees, being initiated by the MoD, based on the recommendations of the Shekatkar Committee. The proposal also includes downsizing of Army HQ; merging the Directorate of Military Training under ARTRAC; limited force restructuring to form Integrated Brigade Groups (IBGs), reducing certain higher HQ; reduction of officer appointments earlier granted by the AV Singh Committee; reducing authorisation of officers and enhancing officer intake from the ranks.

The basic driver for the current proposal is the fact that the 1.25 million-strong Army continues to expand and consumes 83 per cent of the Army's budget for revenue expenditure, leaving a mere 17 per cent for modernisation. Troop reduction has, thus, become imperative to ensure the availability of money for modernisation.

Current Security Environment

Pakistan and China continue to be our major security concerns. India's military threats and challenges emanate from the historically inherited

territorial disputes involving these two nuclear armed neighbours, over which five wars have already been fought.²⁴ Our borders with both these countries remain constantly challenged, necessitating a robust defence mechanism. China's unprecedented economic growth, military modernisation, recent transformation, and the One Belt One Road Initiative are issues of concern. China's development of blue water naval capabilities and its increasing presence in the Indian Ocean Region (IOR) remains a cause of worry. With the development of facilities in Myanmar, Sri Lanka, Pakistan and in many other Indian Ocean Rim countries, the proverbial string of pearls seems to be transforming into a noose. Ensuring freedom of movement in the IOR remains a major requirement. Our unsettled borders with China, its recent efforts at Doklam, and the South China Sea situation are all indicative of its intentions. Despite the world's efforts, Pakistan continues to use terror as an instrument of national power, in addition to frequent nuclear sabre rattling. The China-Pakistan collusion has increased and Pakistan continues to benefit from the economic, military and development support provided by China. Thus, in the future, we are likely to face a 'two-front threat', for which we need to be prepared. The China-Pakistan Economic Corridor (CPEC), including development of Gwadar port, impacts the security of our country. The ongoing situation in Afghanistan too impacts our security. With Pakistan continuing to maintain a role in the ongoing mediation, its efforts to have a proxy in Afghanistan is a matter of concern. It is possible that with the drawdown of US troops and a successful power sharing agreement, the *jihadi* elements will invariably be directed into Kashmir as before. Thus, Kashmir Valley, with its ongoing strife, continues to be an area of serious concern internally.

On the world stage, on one end, India stands confident in balancing its relationship with the US, China, and Russia based on its national priorities and interests. Given its energy security and large diaspora, India has now enlarged its engagement with the Middle East positively.

With the shift of the pivot from Europe to the Asia-Pacific, India has successfully enlarged its interaction with Southeast Asia. While, on the other end, as a national policy, India has fastidiously stayed away from deploying its military beyond its shores, except under the United Nations (UN) missions. However, in its quest to become a major regional power, India must develop the necessary capabilities for regional intervention and support when sought by any nation.

The recent conflicts in Iraq, Syria and Afghanistan have highlighted the changing nature of conflicts. We now need to be prepared for hybrid warfare which involves a combination of conventional, irregular, asymmetric, unconventional, informational and ‘non-contact’ warfare.²⁵ The world is witnessing the era of ‘grey zone’ conflict, where often the commencement of hostilities is in the cyber and digital domain. In India’s context, such a hybrid war will be under the nuclear overhang, especially with respect to Pakistan. Thus, the Indian Army has to develop capabilities for a ‘two-front’ full spectrum conflict.

Envisaged Transformation

The primary role of the Indian Army is to ensure the territorial integrity of the nation through deterrence, or by waging war. Its secondary role includes the provision of aid to civil authorities, undertaking counter-insurgency/terrorist operations, undertaking humanitarian and disaster relief operations, and participating in UN operations when called to do so.

Presently, all three Services operate through their respective Theatre Commands. As a result, we have a total of 12 operational theatres; six in the Army, two in the Navy and four in the Air Force. Each Service has its own Training Command and the IAF has a Maintenance Command. In addition, we have two tri-Service operational commands. The necessity of restructuring our theatres into integrated theatres has been debated for long with no result in sight. Since this is unlikely to find acceptance with the three Services, it is essential for the government to steer this important

transformation. Integrated Theatre Commands can be effective only once the CDS is appointed.

In defending our borders, the Army is required to undertake defensive and offensive operations in a variety of terrains ranging from the glaciated region to the open deserts. In pursuance of our regional aspirations, we now need to develop the capability of undertaking robust out of area operations beyond our shores, when required. Given our concern in the IOR, and the need to ensure the security of our island territories, we need to develop a potent amphibious capability. While we currently have a designated amphibious brigade, we have not invested adequately in its capacity building. Therefore, it is imperative that we raise two amphibious brigades, one each for the western and eastern seaboard.

Presently, as part of our force matrix for a two-front war, designated dual tasked formations are moved from one front to the other, based on the progress of operations. While the availability of independent capabilities on both fronts is most desirable, a practical option is for both fronts to have their basic force levels *in situ*, and hold a central strategic reserve, to be employed as strategic accretions in either or both fronts. We may consider placing these reserves under a Strategic Reserve Command. The Indian Air Force must augment its existing strategic move capability to support this transformation.

In the mountains, because of the limited communication network, one of the major problems is the move of troops and switching of acclimatised reserves. To this end, it is important that forces are suitably located so that acclimatised reserves are readily available. We need to develop adequate rotary wing heavy lift capability at the corps/sector level. The current introduction of the Chinook helicopters is a welcome step in this direction. Innovative logistic support will be required to sustain forces over protracted periods in such harsh terrain.

In the plains, the vital areas are defended by occupying positional defence, supported by reserves, for various contingencies. Considering

the increasing lethality on the battlefield and speed of operations, it is important that all infantry operating in the plains has mobility and protection. Occupation of positional defence in the deserts, however, needs a review. With the increase in mechanised forces, and by providing mobility and protection to infantry, it will be expedient to hold mobile defences in the deserts.

Offensive operations consist of a combination of penetrative and outflanking manoeuvres spearheaded by mechanised forces. In order to ensure simultaneity of operations and availability of the requisite troops for depth battles, we need to build the capability of air/helicopter landed troops in addition to our airborne capacities. Ideally, all the three theatres in the western front must have such intrinsic capability of a division sized force. Such a capability will pay rich dividends when theatre synergetic operations are launched. This will also necessitate a doctrinal change in the employment of forces.

We are becoming increasingly dependent on national space capabilities for navigation, communication, and intelligence. Our space assets must be survivable and replaceable. Our recent Anti-Satellite (ASAT) test on March 27 from Kalam Island in Odisha is a step in the right direction. With this, India joins the exclusive group²⁶ of space-faring nations. Since the military will continue to be a major user of space, it is imperative that we establish a Space Division under the CDS which can coordinate the military requirements with the Indian Space Research Organisation (ISRO) and other agencies.

As the world and our country moves into the digital era, armed forces the world over have harnessed the power of information and computer technology, culminating in network-centric warfare capabilities. Most countries rely on automated computer networks for various daily functions. The security of such networks, in both the public and military domains is critical. We have had many instances where our networks have been attacked and breached in some cases. Defensive and offensive cyber

warfare capability is the need of the hour and the future. It is, therefore, imperative that the armed forces have an integrated cyber warfare organisation under the CDS.

The three Services have their own Special Forces (SFs). Currently, the Army SF units are employed in Counter-Insurgency/Counter-Terrorism (CI/CT) operations, along with a few SF personnel from the other Services. During conventional operations, they are employed for tactical and operational level tasks. We have, unfortunately, not harnessed their capability for executing strategic tasks. In order to ensure that this critical resource is optimally employed, it is imperative that the SFs of all the three Services are reorganised into an independent SF Division, under the CDS.

The cumulative effect of the proposed transformation will be a qualitative jump in our deterrence quotient. This, in turn, will facilitate us to ensure punitive deterrence against Pakistan and credible deterrence against China. It is pertinent to state that the realisation of this transformation entails major capability enhancement in the Navy and Air Force too, issues which are not discussed here.

There is a need to identify the enabling technologies and harness them to facilitate our soldiers to fight better and fight smart. Technology needs to be harnessed to improve situational awareness, Intelligence, Surveillance, Reconnaissance (ISR) capabilities, sighting systems, smart munition, trauma care in the field, individual stealth, camouflage and concealment, and improved personal kits, including protection jackets. At the armed forces level, there are major technologies that need to be harnessed. This must be a whole of nation process involving the academia, the private sector, and the Defence and Research and Development Organisation (DRDO). The government's Technology Perspective and Capability Roadmap provides focus in this regard.²⁷

Major Challenges to Transformation

Over the last 72 years, the Army, along with the other Services, has undergone a major transformation. However, we face a number of challenges which impede the process. The absence of a clearly articulated National Security Strategy document has precluded an integrated capability assessment and transformation strategy.²⁸ The current process is less than optimal due to pulls from the respective Services and the fact that the Indian government does not have direct ownership.²⁹ This is further aggravated by the absence of a CDS. While the three tiered defence planning and procurement process is well laid out, transformational changes are a one-off requirement which will have to be dealt with separately. Thus, in the case of Service driven transformation, it will be prudent to obtain prior approval of the government in order to successfully implement it.

Budgetary support has been a major constraint. Regrettably, the capital funds available each year are insufficient for meaningful capability development and modernisation. For the year 2018-19, the revenue to capital ratio of the Army budget was 83:17.³⁰ In the interim budget of 2019-20, the ratio is 82:18, leaving a mere 29,508 crore for capital acquisition.³¹ The ever-increasing revenue requirement is a matter of concern. Of the meagre funds available for capital acquisition, there is little left for modernisation once the committed liabilities are paid. Overall, the defence budget at 1.44 per cent of the Gross Domestic Product (GDP) has been one of the lowest.³² Thus, with the Army pushed to bridge the existing critical gap, if a major transformation has to be undertaken, the government will have to increase the defence budget to ideally 3 per cent of the GDP.

Any transformation or RMA is accompanied with the attendant requirement of appropriate hardware, including niche technology systems. Due to our limited indigenous defence production capability, critical technology systems invariably have to be imported. Even the Foreign Direct Investment (FDI) having been increased to 49 per cent has not provided the

desired impetus for investment in the defence sector. Of the top ten sectors which attracted FDI during the period April 2016 to December 2018, the services sector was at the top, with 17 per cent of the total investment and the power sector was tenth, with 3 per cent.³³ Inefficiency and lack of accountability of various organs of the Defence Ministry responsible for indigenous design and manufacture of weapons, equipment, and ammunition for the Army, has resulted in poor quality products and cost overruns too. Thus, India's domestic capability does not support any major transformation which involves harnessing of new technology and systems. Even the absorption of Transfer of Technology (ToT) has left much to be desired, resulting in poor quality of weapons, equipment, and ammunition, and thereby, in loss of lives and equipment. The 'Make in India' project was aimed at shifting India's reliance from foreign to indigenously produced material. However, the initiative is yet to make a major impact. Though the defence sector is part of the initiative, there have been only isolated cases of success. It is, therefore, imperative that India has a well-developed defence research, innovation and production base, duly incorporating the vibrant private sector.

Often, when major changes are envisaged, there is stiff resistance from within the organisation. Thus, managing change successfully becomes a key leadership challenge. It is important that the end user is convinced of the necessity of change and the manner in which it is going to be implemented. The senior military leadership needs to take proactive steps to prepare the rank and file for the transformation and get them to take ownership of the change. It is important to set a clear vision for the transformation, explain why the programme is necessary and outline a journey over the coming years that resonates within the organisation.

Recommendations

Based on the transformation envisaged, the following recommendations may be implemented for effective realisation. Implementation of the

existing recommendations for a vibrant, responsive and accountable HDO including the appointment of the CDS. The government should formulate and articulate the NSS, and issue a formal document, to be available in the public domain. Should the government continue to be reluctant to issue it in the public domain, it could issue a classified document to the various stakeholders. Based on the NSS, the CDS needs to identify the joint needs and capabilities, in consultation with the Services. This exercise should also include the specific individual Service requirements by identifying the respective transformation goals and strategy for implementation.

Based on the inputs from the CDS, the government needs to formulate and issue the necessary transformation guidelines, along with the requisite budgetary support. For which, the military modernisation and transformation programmes, along with their budgetary support, must find a mention in the annual budget speech, made by the Indian Finance Minister each year. The respective Services should then prepare their vision document and roadmap for transformation. The lead agency for joint capability development, to be notified by the CDS. A central agency with authority to be notified to steer the transformation. The MoD to undertake the necessary internal restructuring to ensure optimal management of transformation and its execution. Joint planning and execution must be the norm rather than an exception.

The concept of Integrated Theatre Commands to be implemented by the Indian government through an Act of Parliament. A right sized force to ensure punitive deterrence against Pakistan and credible deterrence against China. The Army, including the RR to be capable of executing a simultaneous ‘two and a half front’ war. Development of niche technology indigenously and enhancement of self-reliance in defence production. Enhancement of the capacities and capability of the Andaman & Nicobar Command to act as a formidable firm base for any operations in the Bay of Bengal and further east. Raising of the Special Forces Division under the

CDS by integrating the Special Forces of all the Services. Enhancement of their skill sets to facilitate execution of strategic tasks. And the raising of a Cyber Operations Division and Space Operations Division under the CDS.

Execution of transformation initiatives currently under consideration and initiation of action to bridge the existing capability gap. Development of the amphibious capability of two brigade sized forces, one each for the western and eastern seaboard. Development of capability for executing three simultaneous divisional sized air landed/heliborne/airborne operations. Enhancement of rotary lift capability to support a brigade sized force, both in the mountains and plains. The capability to be nested at the corp level. Review of the organisation of the IBG currently proposed and enhancement of its flexibility and versatility by suitable augmentation of capabilities. In particular, theatre based combat rotary forces to be apportioned. Once the IBG concept is fully stabilised in the defensive formations, strike formations to adopt the concept, with appropriate modifications and capability enhancements. Adoption of mobile defence with suitably augmented IBGs in the open desert sectors, and release of the regular infantry for employment in the mountains. Enhancement of mobility and protection for all infantry employed in the plains. Platforms to be held and operated by a separate organisation at the corps level. Identification of joint logistic needs and capabilities; removal of duplication of effort. Establishment of integrated logistic nodes to support the three Services in any station. Improving the existing PME and increasing the capacities for PME of junior leaders. Enhancement of language skills across the board. Improvement in the care and welfare of troops and their families, to include housing, education, and medical support. Ensuring a uniform and equitable Human Resource (HR) policy for all ranks. Revision of the existing Joint Doctrine and Service doctrines accordingly.

Conclusion

Transformation is a profound change that is implemented to give the military a competitive edge in view of a country's changing security environment and threat. The US Army, with its vast operational commitment, has undergone major transformations which have lessons for us. In the US system, the process of transformation flows from the NSS which is articulated by the government. It is a whole of government approach with the requisite financial support. The Indian Army too has undergone major transformations, especially in the aftermath of the wars that it had to fight. Our capability development has been hampered by the lack of a government articulated NSS, a limited defence budget, and lack of a sound indigenous defence production base. Our major threat continues to be from Pakistan and China, with hybrid warfare being the norm; thus, the Army has to be prepared to fight a two-front war across the complete spectrum. In order to enhance India's operational efficiency and ensure a decisive victory in future conflicts, certain transformational changes have to be implemented. These include appointing a CDS, establishing integrated Theatre Commands, the government articulating an NSS with guidelines for transformation, ensuring the requisite budgetary support, providing enhanced rotary support for operations in the mountains, enhancing vertical capability in all the theatres on the western front and developing amphibious capability on both seaboards. Developing indigenous technology capability in niche fields and defence production are critical requirements. In order for any transformation to succeed, it is imperative that it is led by our senior military leaders, establishing ownership for the change in the organisation.

Notes

1. Paul K. Davis, *Military Transformation? Which Transformation, and What Lies Ahead?* (Potomac Books, 2010), <https://www.rand.org/pubs/reprints/RP1413.html>, p. 11.
2. Arjun Subramaniam, *India's Wars—A Military History 1947 -1971* (Noida: HarperCollins 2016).

3. Discriminate Deterrence, Report of the Commission On Integrated Long-Term Strategy, Co-Chaired by Fred C. Ikle and Albert Wohlstetter, 1988.
4. Raphael S. Cohen, *The History and Politics of Defense Reviews* (Santa Monica, CA: RAND Corporation, 2018).
5. See “Goldwater Nicholas Department of Defense Reorganization Act of 1986,” https://history.defense.gov/Portals/70/Documents/dod_reforms/Goldwater-NicholsDoDReordAct1986.pdf. Accessed on April 5, 2019.
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