DEFENCE DEVELOPMENT IN INDIA

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ABSTRACT

The Indian military is the world's fourth largest after the US, Russia and China. In the immediate aftermath of India's independence from British rule, however, it was hard to imagine that in the span of six decades, a poverty-stricken, fragmented and deeply traumatized country would emerge as a military powerhouse. How and why has this transformation taken place? Has India's growing military prowess resulted in a more robust and adventurist foreign policy, particularly within the South Asian region?

What does India's rapid military transformation, particularly the Indian Navy, in the twenty-first century say about India's perception of threats to national security?

In this article, I argue that the Indian military's expansion and modernization has happened in phases, mainly as a reaction to threatening developments within the surrounding region, the evolving global strategic environment and the perceptions and decisions taken by India's political elites. I argue, further, that as India's military prowess and self-confidence have grown, Indian leaders have at times felt tempted to flex the military muscles, particularly in low-intensity regional conflicts, but not always with expected results. I conclude that in the twenty-first century, the Indian military, particularly the Indian Navy, is undergoing rapid expansion and transformation. This suggests that in addition to threats coming across the western and northern land borders with Pakistan and China respectively, India's security planners envisage a growing threat to national security emanating from the deep waters of the Bay of Bengal, the Arabian Sea and the Indian Ocean.

KEYWORDS: Military, India, evolution, modernization, transformation, development, armed forces, submarine, and missile

INTRODUCTION

It is usually recognized that the approach to national security requires a comprehensive lookout on various political, social, economic, technological and strategic aspects. National security implies not only safeguarding territorial boundaries but also that the nation is able to build a egalitarian, coherence, technologically efficient and progressive society with a better quality of life. In defence development, the emphasis shifts to national security concerns that are mainly military in nature.

The Indian military is the world's fourth largest after the US, Russia and China. It has a million-plus volunteer army that is well trained, disciplined and equipped with modern weapons and ammunition, it has a robust air force with modern fighter jets that are capable of playing both offensive and defensive roles and it also has a blue-water-capable navy whose strength is rapidly growing with the acquisition and development of aircraft carriers, submarines and a plethora of other naval assets. In the immediate aftermath of India's independence from British rule on 15 August 1947, however, it was hard to imagine that in the span of 67 years, fragmented, a poverty-stricken and deeply traumatized country would emerge as a military powerhouse.

India is planning to conduct various missions over the next five years to achieve multiple objectives in navigation, positioning, advanced communications, Earth observation, space transportation and space science. The Indian government realizes the need for a proactive policy on the dual use of capacity building, technology and equal access to space resources. India also recognizes that there is a need to facilitate a greater role for private investment in exploration, infrastructure building, and technology development, keeping in view the changing policy environment in the post-Cold War era.

PRE INDEPENDENCE DEVELOPMENT SYSTEM IN INDIA

Before independence, defence services worked on a system of contract budget. Defence expenditure was pegged at Rs 55 Crore per year, which was more than half of the Central Government's revenue. There was no severe threat from outside (except during World War II, when a fresh agreement was signed) and this amount was more than serviceable to maintain the establishment. The savings were not allowed to decline but put away in the Defence Reserve Fund that was utilized to finance measures for re-equipment of the Defence

Services, thus governing the Government from having to provide fund money greater than the contract amount. Expenditure on defence rose steeply soon after independence.

Although, there was no planned effort and defence programmes consisted mainly of outright purchases from abroad, drawing heavily on available Sterling reserves. In the late 1950s, some efforts were made to initiate domestic weapons production by the Ministry of Defence when Mr Krishna Menon was the Defence Minister. The Sino-Indian conflict in 1962 aroused a new defence consciousness in the country. After taking care of immediate post-war requirements, systematic defence planning started in 1964. Defence requirements were assessed on a five-year basis and the First Five Year Defence Plan (1964-69) was drawn up. This plan took into account the resources available and assistance which could be expected from friendly foreign countries. The plan was primarily based on an expansion and modernization programme considered necessary by each Service in the light of the respective threat perception assessed. It also proposed a defence production base that would gradually reduce the country's external dependence. A Planning Cell was established in 1965 in the Ministry of Defence 'to deal with the wider aspects of defence development'.

The new framework was proposed to encourage medium and long haul protection arranging and to keep up steady collaboration with the Arranging Commission and different services.

.So as to incorporate protection improvement with the general financial arranging exertion, safeguard and monetary advancement designs were made co-end.

RECENT DEVELOPMENT IN DEFENCE IN INDIA

India's defence preparedness has received several boosts in the last few months, with new missile systems being inducted and successfully test fired. Adding to that, India is set to buy Rafale jets and has already received upgraded Mirage aircraft from France. From stealth destroyers to submarines, we take a look at eight significant developments in India's defence that have added to the country's fire power and combat capabilities.

India's indigenous nuclear submarine Arihant to undergo missile firing tests

India's first indigenously developed nuclear submarine Arihant, which has "successfully" completed the sea trials held so far, will undergo its maiden missile firing test soon. The aim is to handover the submarine to the Indian Navy during the International Fleet Review

scheduled in February next year in Vishakapatnam, India plans to build at least two more Arihant-class submarines. India had started building Arihant in the 1990s under its highly secretive ATV (Advanced Technology Vessel) programme.

INS Sardar Patel

Indian Navy's latest Naval establishment, INS Sardar Patel, was commissioned at Gujarat's Porbandar on May 9, 2015. According to the Navy, the commissioning of INS Sardar Patel would enable it to qualitatively augment its infrastructure and organizational effectiveness in Gujarat, which would improve coordination and synergy with other maritime agencies of the government. This Forward Operating Base (FOB) of Indian Navy in Gujarat and the Headquarters of the Naval Officer-in-Charge (Gujarat, Diu & Daman) would also enhance the logistic support being provided to the Indian Navy units deployed in the Northern Arabian Sea, including along the International Maritime Boundary Line with Pakistan.

Akash Weapon System

Indian Army recently inducted the indigenous Akash Weapon System. Akash Weapon System (AWS), is an indigenously designed, developed and produced 'air defence system' and 'Weapon Locating Radar', which is equipped with indigenous surface to air supersonic Missiles. This system is capable of engaging aerial threats up-to a distance of approximately 25 km. Akash is a multi-target, multi directional, all weather air-defence system, says DRDO. The army version of Akash consists of surveillance and tracking radars, control centres and ground support systems mounted on high mobility vehicles. According to DRDO, the system is designed to enable integration with other air defence command and control networks through secured communication links.

Upgraded Mirage-2000 aircraft

In April, Air Force received the first batch of upgraded Mirage-2000 fighter aircraft. According to the Ministry of Defence, the upgrade enhances the overall capability of aircraft with advanced avionics, weapons and self-protection suites. The upgrades on the aircraft include a night vision goggle-compatible glass cockpit, advanced navigational systems, advanced Identification Friend or Foe (IFF) system, advanced multi-mode multi-layered

radar, fully integrated electronic warfare suite besides others.

Agni-V missile's maiden canister-based trial

The maiden canister-based trial of the country's most potent missile Agni-V was conducted in January. The missile was launched from a canister mounted on a road-mobile launcher at Wheeler's Island.' Agni-V has a strike range of over 5000 kms and can carry a nuclear warhead of over one tonne. Ships located in midrange and at the target point tracked the vehicle and witnessed the final event. All the radars and electro-optical systems along the path monitored all the parameters of the missile and displayed it in real time, the DRDO release said. The missile version was stored and launched from a hermetically sealed canister. The steel container was made of merging steel.

India to buy Rafale jets

After a series of twists and turns, a multi-billion dollar deal for new Rafale fighter jets for the Indian Air Force has hit the last mile. In the initial phase of the deal with France, 36 Rafale fighters will be bought off the shelf by India and negotiations will continue for manufacturing more in India at a later stage. Buying fighters off the shelf means the delivery would be faster and would meet a time frame set by IAF that urgently needs the aircraft to fill operational gaps. The aircraft would be delivered on the same configuration as had been tested and approved by IAF during the 2007 tendering process. According to Dassault Aviation, the Rafale can carry out both air-to-ground strikes as well as air-to-air attacks and interceptions during the same sortie. Stating that the Rafale has 'Omnirole' capability, Dassault Aviation claims that the aircraft can perform several actions at the same time, such as firing air-to-air missiles during a very low altitude penetration phase.

INS Visakhapatnam

Indian Navy's new stealth destroyer INS Visakhapatnam was launched at Mumbai's Mazagon dock in April. INS Visakhapatnam is the first of P15-B stealth destroyers. The 163 m long ship, which will be propelled by four gas turbines, is designed to achieve a speed of over 30 knots at a displacement of approx. 7300 tons. This indigenously designed stealth destroyer will have state-of-the-art weapons, sensors, an advance Action Information System, in Integrated Platform Management system, sophisticated Power Distribution System and a host

of other advanced features, according to the Defence Ministry release. It will be fitted with supersonic surface-to-surface missile system. The system enables the ship to engage shore-based and naval surface targets at long range making it a lethal platform for strike against enemy targets.

Kalvari: Scorpene class stealth submarine

Kalvari, the first of Indian Navy's Scorpene class stealth submarines being built under Project 75, achieved a major milestone with its 'undocking' at the Mazagon Dock Limited. Project 75, which has already seen a delay of almost 40 months, has now been brought on track and the delivery schedule for the successive submarines has been reduced. "The Scorpene submarines would pack a potent punch. They would be equipped with anti-ship missiles and long range guided torpedoes along with modern sensor suite," says Defence Ministry.

Hercules C130J lands on tiny runway

A Hercules C130J, one of India's biggest defence cargo plane recently landed on the tiny runway at the Juhu airport as part of a military exercise, the first fixed-wing aircraft to land on the airstrip in over four decades. The Hercules C130J was flown to Juhu as an exercise to see if the airport in the western suburbs of Mumbai could be used in case the city's main airport is attacked, defence sources said. The tactical transport aircraft of the special operations squadron is capable of undertaking quick deployment of forces in all weather conditions, besides landing on unprepared or semi-prepared surfaces.

Perspective Planning

A Defence Plan has to be prepared on the basis of a 15-year long perspective planning system, such that the first five years of the plan are very firm (Definitive Plan), the second five years less firm (Indicative Plan) and the third five-year term tentative (Vision Plan). There has to be a reasonably firm allocation of financial resources for the first five years and an indicative allocation for the subsequent period. Perspective planning needs to be done in the Integrated Defence Headquarters, where military, technical and R&D experts take an integrated view of future threats and challenges. This has to be based on future battlefield scenarios, and array of forecasts, evaluation of strategic options and force mixes, and analysis of potential technical and industrial capabilities. Based on this, the respective Service should

work on their perspective plans and Defence Production/Supplies experts should spell out their requirements in terms of effort, technology and indigenous production.

The departments of the Ministry of Defence also comprise of a Finance Division to act as an ombudsman upon all the four departments. Procurement related to defence procurement falls under the **Department of Defence Production (DDP)**; as acutely defined by the Government itself.

"*The **Department of Defence Production** is headed by a Secretary and deals with matters pertaining to defence production, indigenisation of imported stores, equipment and spares, planning and control of departmental production units of the **Ordnance Factory Board and Defence Public Sector Undertakings (DPSUs)**.*"[1]

Department of Defence Production came to existence post 1962 War with China in November 1962 to cope with research analysis, development and manufacturing of equipment's related to defence, which was followed by the **Department of Defence Supplies (DDS)** in November 1965 for strategic planning and administration of schemes to find self-substitutes of requirements for defence supplies.

Aim of Defence Procurement Procedure

The prime aim of DPP is to facilitate the armed forces with military equipment, systems and other needful platforms with an assurance of never fading quality standards, performance capabilities through matchless utilization of budget allocation.

DPP also emphasizes upon transparency and simplicity in the procedure to procure defence mechanism and equipment to food and daily usable used by the forces around the country. It also aims towards increasing the designing, drafting, producing and manufacturing capacities of the enterprises associated to MSME (Ministry of Micro Small and Medium Enterprise).

Another fundamental aim of DPP is to timely procure the products as the delay or the buffer period between procuring and procurement of goods, equipment can be a big differential gap if any troublesome situation emerges or if any help is requested by any country worldwide. Therefore, DPP-16' is revised to promote domestic manufacturing which can help immensely to the problem of timely procurement. It also aims to include

government funding for research and development process to be conducted within India for faster, cost-effective and local analysis oriented results.

Scope of Defence Procurement Procedure

The scope of DPP is to cover all kinds of capital acquisitions whether undertaken by Ministry of Defence (MoD), Defence Services and Indian Coast Guard from both the heads i.e. indigenous sources as well as ex-import parties except for medical equipment.

Medical equipment will still be procured by the same procedure as they were procured before 28th of March 2016. While various other organisations like Defence Research and Development Organisation (DRDO), Ordinance Factory Board (OFB) and Defence Public Sector Undertakings (DPSUs) will, however, continue to follow their own procedure for procurement.

DPP-16 has also raised the offset clause to Rs. 2000 cr. from Rs. 300 cr. which was set previously for Buy (Global) category, which means that if a foreign player sells arms and ammunitions to India, it'll be mandatory to invest 30% of procurement cost into Indian firms directly or in-directly.

The scope of DPP has been drastically enhanced by the DPP-16, where Government will assure 90% of the funds for acquisition of equipment, components or upgrades thereof, to be designed, developed and manufactured by India for the projects under 'Make' category; previously the funds provided for "Make" category projects carried out in India was 80%.

A subtle 10% of growth in the funds provided by Govt. has given a boost to the category, "Make in India" campaign is responsible for the hike in funding as the government emphasizes upon creating goods of own and investing as much as possible in India itself.

India being the largest importer of arms with a share of 15% share of international arms imports; importing 70% arms from Russia, 12% from United States of America and 7% from Israel.[9] DPP-16 takes a step towards transforming the Indian defence system to a self-reliant system which can curtail its imports and fulfil its own needs.

DPP-16 also states 100% refund from the government, in case of delay of procurement from

vendor. The government will be [4]bound to pay the base cost plus Research & Development (R&D) cost to the vendor if the procurement gets delayed for more than 24 months. This step takes a step further transparency, simplicity and convenience in procurement which enlarges the scope of procurement for Indian vendors. Also, with the new policy, government has also given utmost priority to design and development which will in furtherance push the private players to invest more into Research & Development (R&D).

The scope has also been duly amplified for small vendors who can now supply indigenous parts to the foreign vendors. The increase in offset from Rs. 300cr. to Rs. 2000cr. has been applied because the contracts signed above the limits don't have the indigenous requirements.

Earlier, the foreign vendors easily used to inflate the contracts above the lower limit of Rs. 300cr. to escape the 30% of the product deal that was mandatory to be done with Indian dealers and firms because of offset clause. **With the new scenario, any dealer contracting below Rs. 2000cr. will have to invest 30% of the procurement deal in Indian firms and players, boosting the inbred suppliers and researchers.**

With this increased scope we can now buy more form India; companies would have to establish manufacturing plants in India to meet the defence requisites.

With present prescribed procedure the companies rather than bribing the officials can lower the quotes of the contract, helping India with another darkened corner of our system.

Rules and regulations

There is no ad hoc codified law for Defence Procurement. Procurement under the head of defence is controlled and regulated solely by Defence Procurement Policy (DPP). DPP defines the heads under which the acquisitions are to be done and provides guidelines regarding the procurement of those acquisitions. DPP principally conveys the manner through which procurement by the defence will be done.

The process of procurement starts from the ground level or the base of the need where the demand arises. A certain demand for a certain product is considered by the superior committee which further sees to the viability and genuine requirement of the demand. If the committee thinks the demand to be fit for purpose it further sends the demand to the superior

in charge and various procedures are followed by him too.

The demand of a product travels from:

The point of inception of demand- Level 1
To The superior authorities- Level 2
To The supreme authority- Level 3

(The chart is just an impression of how the demand travels, it in reality would have to travel and get passed at further extended levels)

The budget for procurement is sanctioned in advance for the year. All the three armed forces are sanctioned their budget beforehand and the Heads have to distribute the respective budget to the subordinate authorities and so on. Procurer of the lowest denomination has a budget in hand which he is bound to spend on the products sanctioned to him within a period prescribed by the presiding officer and so on.

A scrutiny committee is also set up if any part of the budget is left unused. Defence works of the opinion that no matter how big the budget is, it has to spend it all within time and limits. Defence personal related to procurement is under an obligation to clear the budget provided to him for procurement of products. Unlike the general state or central hierarchy where the demands are born at the highest level of the hierarchy and are then passed on to subordinate authorities.

Under state or central hierarchy a budget is first passed for procurement by the ministers and then the budget flows down the line with many subtractions,curtailing the final usable budget to a great extent. Government scrutinizes its employees and authorities if any expenditure is made out of the limit prescribed dissimilar to the working criteria of Defence Procurement.

Procurement Stage Differentiation

DEFENCE	GOVERNMENT
Lower level	Higher level
↓	↓
Higher level	Lower level

Defence is such an organ of the country which cannot be left exposed wide open. The working style and the rules and regulations to which the defence wing operates are covert and confidential for the reasons of security of the nation.

Defence wing maintains proper solitude as it is necessary for an organisation made for the sole purpose of saving the country at large from seen and unseen jeopardy. Defence follows its own procedure and rules which are only to be governed and revised by Ministry of Defence (MoD).

Ministry of Defence also keeps its limits to the enactments of procedures and doesn't interfere in the internal matters of the armed forces. Any rules and regulations regarding defence procurement are extensively confidential and are rightly kept out of the reach of a common man to save it from misuse and premature opening of cards before the opponent.

Corruption in Defence Procurement

India being the largest importer (rather than a manufacturer) of defence equipment in the world has certain potholes due to its non-transparent policies. Indian military spending has added up 147% in its expenditure. With no designated body or Inspector General to act upon ethics and corruption under Ministry of Defence (MoD) such great numbers in defence expenditure pose a greater threat of corruption and laundering of the money collected from the public through tax.

Various controller committees like CAG (Comptroller and Auditor General of India) and Public Accounts Committee have already accused armed forces for the issue of corruption

under its governance.

The root of all causes can also be concentrated as **"Low public-accountability of defence institutions"**. The defence deals and procurements are well propagated by the ruling government to portray a tough face of governance but these deals and acquisitions are well excluded from public accountability on the name of secrecy related to Defence matters.

The Armed force's officials come out with various allegations on procedures and other country running authorities after their retirement (after they've secured their part). We will not see any present officer of armed forces speaking against their Institution. On the contrary number of such officers keeps extending who accuse their own institution after retirement.

Public at large is cut out of will from the expenditures and accounting of their hard earned money in regards to defence. A common man is never allowed to ask questions about the spending by the Defence Ministry. Every such attempt of questioning is tagged as convulsion and the person so asking is deemed as an 'Anti-national' by the politicians involved in such malpractices.

Defence also maintains an absolute hush-hush on its financial matters and condemns anything which can expose its officials under the offences of demanding and accepting bribe as **'confidential for the sake of country's security'**. Different court and laws for personal of armed forces also constitute to the fact that such matters of corruption and malpractices in defence wing never gets exposed before the country.

Corruption is destroying the trust of public from the military institutions and armed forces. Defence sector by the virtue of its nature warrants secrecy but certain areas such as defence budget, defence policy and defence procurement to curtail the corruption.

"India is the only democracy with no provisions for legislative oversight of its intelligence agencies and there is virtually no parliamentary scrutiny of "secret" spending (i.e. spending related to intelligence agencies and national security),"[10][5] the reports of the survey explains in brief that how India lack in the principles of democracy by not keeping the transparency in the process.

Scams in Indian Defence Sector

Lack of transparency of procedure and accounts lies throughout the line. Defence is the sector which has been a host of the largest and the most humiliating scams and scandals in Indian history. **An estimated US$ 20 billion is lost to corruption only in this particular sector per annum.**

DPP is a gimmick of politicians and top notch officials of Indian Armed Forces for earning personal benefits and profits out of the budget meant for defence procurement. After excluding benefits earned from the deals, the officials and politicians are also widely accused and proved for demanding and accepting bribes from the vendors or dealers.

Legislators sitting on the top edge of the ministry and officials on the top edge of the military **keep the relation very secretive** and out of conflict to save them from letting the cat out of the bag.

In very short span of 69 years from Independence India has witnessed countless scandals only in defence sectors.

Some of the major scams are cited below:

- Bofors scandal
- 2013 Indian helicopter bribery scandal
- Barak missile scandal
- Jeep scandal
- Kargil coffin scam
- Scorpene deal scam

The vast varieties of scandals prove that corruption in India can be formulated under any sphere.

Though being a very corrupt process and a tool for corruption and bribery, defence procurement is an essential organ of defence ministry. Without the present Defence Procurement Procedure the situation of defence wing would have been deteriorated even to a

greater extent.

A codified law is strictly needed which can regulate the defence procurement and be a watch dog for the matters related to defence procurement. Through the codified laws of Ministry of Defence would also be bound by some authority which at present point is unaccounted by any means. It'll also help in making defence public accountable, as the money it uses is acquired from the taxes collected. **Transparency in procurements is a necessity to penalize corrupt policies as well as people.**

A codified act would also help in strengthening the defence mechanism of the country at a reasonably lower cost and better quality. It would also enhance the scope of Indian manufacturing.

If the country gets a codified act, further research can be conducted in various areas which remain untouched because of the 'Clause of Confidentiality and secrecy'.

What are your views on this? Feel free to comment below & share the article.

What are the defence industry evolved since Independence?

Post autonomy the Indian authority went for accomplishing independence in whole space of protection generation. To accomplish this Industry Arrangement Determination 1948 and The Ventures. (Advancement and Control) Act, [illegible]ost 1962 war permit generation and direct buy stayed dominating type of supply for military. This brought about a hole of almost three decades in India's exertion toward indigenous generation. a moderate mentor amongst Kiran but to-be completely created Propelled Fly Coach (AJT) are a portion of the illustrations that embody both innovation and generation holes.

CONCLUSION

In recent years, defence economics and management techniques have made an important contribution to defence development. As of late, safeguard financial matters and administration systems have made a critical commitment to guard improvement. Various procedures, for example, Operational Exploration and Frameworks Investigation (ORSA), Arranging Programming and Planning Framework have been created to influence the wanting

to process more efficient and to augment the advantages acquired from the given measure of assets. Frameworks Examination can help with creating sound techniques for acquirement of new weapons frameworks. Frameworks execution at configuration stage can be assessed through PC recreation. Organizers everywhere throughout the world are utilizing modernized war-gaming methods and structure examination. Prospects exist for a more edified approach that can unite military officers, students of history, technologists and quantitative experts.

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