

---

# An Overview of Indian Defence Industry: A Transformative Perspective

S P Das

## Introduction

The Indian defence manufacturing sector is largely dominated by the Defence Public Sector Units (DPSUs) and Ordnance Factory Board (OFB), whereas the Research and Development (R&D) sector is solely controlled by the Defence Research and Development Organisation (DRDO). India's defence industry is primarily controlled by the government and its agencies. Though the defence industry was opened up for private domestic players in 2001, so far there has been limited participation of the private sector in the overall defence procurement. India boasts of one of the largest defence industrial bases among the developing nations in the world. Approximately two lakh people are employed in the various defence manufacturing units/laboratories of the government. The key components of India's existing Defence Industrial Base (DIB) are the DPSUs, Ordnance Factories (Ord Fys), DRDO—all functioning under the overall control of the government's Ministry of Defence (MoD)—and a few private sector companies comprising both large and Micro, Small and Medium Enterprises (MSMEs).

It is a well-known fact that in spite of having its own vast defence industrial base, India depends heavily upon foreign imports to meet

---

Colonel S P Das is a Senior Fellow at the Centre for Land Warfare Studies.

the requirements of its armed forces for weapon systems and platforms. Although India has achieved significant success in areas such as space technology, missile development, atomic sector, information technology, pharmaceuticals sector, and others, a similar achievement remains elusive in the defence sector. However, it is well-noted that India has the potential to be a major player in the field of defence manufacturing provided it plays its cards well. In doing so, the primary task lies in identifying a few potential areas of defence production, wherein it can expertise its capabilities.

In terms of functioning, in India, the MoD plays an all-encompassing role in the defence sector. It acts as the sole developer, manufacturer, seller and buyer of defence equipment and weapon systems within the country through its various agencies/organisations. Further, the formulation of a policy framework for various functions related to defence manufacturing and defence procurement is also orchestrated under the domain of the MoD. These aspects make it significant for the MoD to play an active role in driving the growth of the defence industrial base within the country. Various other ministries/departments such as the Ministry of Home Affairs (MHA), Ministry of Commerce, Trade and Corporate Affairs, Ministry of Finance, Ministry of Industries, and Ministry of External Affairs, also contribute significantly towards the defence industry by way of issue of policies/guidelines, which directly or indirectly affect the functioning of the industry. However, the most significant is the role of the armed forces in the growth of the industrial base within the country. That is, being the ultimate users, the armed forces have a greater say in the selection and acquisition of defence equipment and weapon platforms by the government.

### **Significant Aspects of Indian Defence Sector**

India's defence sector can be understood from the following aspects, which are listed below:

- India has the third largest armed forces in the world.

- It is the world's fifth largest spender on defence. India's annual defence budget for Financial Year (FY) 2018-19 was about Rs 2,95,511 crore (at the BE stage). It spends approximately 35 per cent of its defence budget on capital acquisition.
- India imports nearly 60 per cent of its military hardware requirements from the global arms manufacturing countries. As per Stockholm International Peace Research Institute (SIPRI) data, the value of imports of defence equipment and weapon systems by India for the period 2013-16 was approximately Rs 82,496 crore. India accounts for 14 per cent of all global arms imports and has the dubious distinction of being the largest importer of arms in the world.<sup>1</sup>
- Despite having a strong DIB, the long-cherished goal of achieving minimum 70 per cent self-sufficiency in defence procurement remain elusive. Currently, India's self-reliance is hovering at around just 35-40 per cent.<sup>2</sup>
- India is mostly involved in licensed production or manufacturing of defence equipment based on the Transfer of Technologies (TOT) obtained through the purchase of main equipment/systems in the past from the Original Equipment Manufacturers (OEMs).
- There has been a very limited participation of the private sector (less than 5 per cent) in the overall defence acquisition.
- It is no surprise that the country has to bear the burden of a large import bill for purchasing military hardware, which puts further strain on its limited resources. Moreover, the genuine needs of the country's large population for development and creation of civic facilities have to be compromised on account of the heavy expenditure on defence imports.
- Though the government has given some additional thrust to indigenisation and 'Make in India' in the recent past, tangible results are yet to become visible in the defence sector.
- The government in the recent past has announced the creation of two defence corridors in the country, which is a welcome step. However,

there is a need for greater clarity on the matter and strong will to implement the plan in a time-bound manner.

- In the past, some selective restructuring of Ord Fys and DPSUs has been undertaken by the government, but it has not fructified into reduction in foreign imports.
- It is a well-known fact that procurement of defence equipment and systems ex-import is carried out by the government to meet the urgent and unavoidable needs of the armed forces, in order to maintain the minimum acceptable level of operational preparedness. However, this is largely due to the non-availability of modern, hi-tech and advanced weapon systems through the domestic industry (public and private). Though such imports serve the immediate needs of the country, in the larger perspective, they delay the process of indigenisation.
- Nearly US\$ 14 billion worth of defence offset obligations are expected to be discharged in India by the foreign OEMs by the year 2028. As per an estimate, the Indian defence sector has the potential to add about one million direct and indirect jobs.

### **Existing Fault Lines in the Structure of Defence Production**

The prime reason for the large import of defence equipment is the inability of our existing R&D organisations, Ord Fys and DPSUs to develop and manufacture the modern, high-tech and advanced weapon systems/platforms indigenously. Some of the key fault lines in the existing structure of defence production are discussed below:

- The DPSUs/Ord Fys/DRDO were raised with the expectation to create self-reliance in the field of defence manufacturing, however, the same has remained elusive so far. Over the years, the contribution of the DPSUs/Ord Fys has been dismal, which is adequately mirrored in their decreasing stake in India's capital budget. Instead of reducing,

India's dependence on foreign imports for the purchase of arms and weapon platforms is ever increasing.

- There are gaps in the capacity and capability of the DPSUs/Ord Fys/DRDO vis-à-vis the requirements of the armed forces for modernisation/upgradation of the equipment profile, which leads to the off-the-shelf procurement of arms/weapon systems ex-import. It gets amply clear from the fact that the value of total production (revenue and capital) by the DPSUs/Ord Fys in 2016-17 was approximately Rs 57,000 crore, whereas India's capital budget for defence for the same year i.e., 2016-17 was Rs 86,529 crore. Hence, the DPSUs/Ord Fys are in no position to absorb the country's capital defence budget.
- It has been generally observed that the DPSUs/Ord Fys are involved in low value addition and over-reliance on foreign sources. Concerns were also raised by the Comptroller and Auditor General (CAG) in its report of the year 2011, wherein it had flagged the issue of 90 percent import of raw material/components by Hindustan Aeronautics Limited (HAL) for the production of its so-called indigenous Advanced Light Helicopter (ALH). Further, issues were raised by the Parliament Standing Committee on Defence about the low indigenisation level in two of its flagship indigenous projects such as the Main Battle Tank (MBT) Arjun and Light Combat Aircraft (LCA). It has also been noticed that the ratio of value additions by the DPSUs to the total value of their production, has reduced from 51 to 38 per cent.
- There is dismal participation in R&D. There is enormous scope for investment in defence R&D by the public as well as private sector, but, in reality, the participation by the public sector has been dismal, whereas there has been nil participation by the private sector. As per a study carried out by Institute for Defence Studies and Analyses (IDSA), the OFB invests only 0.7 per cent of its budget in R&D against the minimum inescapable requirement of 3 per cent. It was also revealed that four of nine DPSUs do not own a single patent or copyright.

- The outdated structure of defence production calls for great attention. It is felt that India has been extremely late in carrying out policy reforms in the defence sector. Momentum was gained only after the Kelkar Committee Report. It is a well-known fact that the DPSUs and Ord Fys [functioning under the administrative control of the Department of Defence Production (DDP) of the MoD] have been suffering from many ills which include lack of a professional approach, excessive bureaucratic control, poor work efficiency, etc. These lead to substantial time-delays and cost-overruns in completion of orders/projects as well as delay in decision-making on critical defence matters.
- There is a lack of Foreign Direct Investment (FDI) in the defence sector. The aspect of FDI has not received adequate importance so far and, hence, there has been very low FDI in the defence sector.
- There is a negligible participation by the private sector. So far, the environment has not been very conducive for the active participation of the private sector in defence manufacturing. Only a few big orders have been placed on a handful of large firms. The private sector has largely remained content with the supply of components, sub-systems and low-tech items to the public sector. Further, there seems to be lack of trust amongst the decision-makers as far as placing orders on the private firms for development/manufacturing of big ticket projects like weapon platforms, fighter aircraft, submarines, armoured fighting vehicles, battleships, etc., is concerned. It also appears that the existing big players of the public sector, that is, the DPSUs/Ord Fys/DRDO see the role of the private sector to be that of a supplier and not a lead integrator or manufacturer of weapon systems. This can probably help them to maintain their superiority in this field. The non-participation by the private sector may be explained as being due to issues such as: the decades of insulation, prejudices and old mindsets among the decision-makers. Further, due to the complexity of procurement procedures and the clout wielded by the public sector

companies within the MoD/government, the new entrants find the whole regime to be highly forbidding.

- The concerns of the private sector mainly relate to apprehensions that there is no level playing field between the public sector units and them, as regards the pricing of an item/equipment and price-related competition. The apprehension comes with the premise that the DPSUs/Ord Fys enjoy the patronage of the government and have comparatively easy access to public money. Further, it is argued that the public sector doesn't have to take into account the cost of capital, land, fixed assets like plant and machinery, etc., while quoting the price for equipment, as these expenditure have already been incurred by the government over the years. Further, a public sector entity can afford to under-quote for an item as some part of the cost can be provisioned by it through some other projects being handled by it. However, such freedom is not enjoyed by the private sector.
- There is a need for funding, as the incremental increase in the country's defence budget is not enough to undertake big-ticket modernisation plans for the armed forces. Further, there will be a need for capital for enhancing the capacity and capabilities of the DPSUs, Ord Fys and DRDO.

## **Need for Developing Autonomy in Defence Sector**

### *Requirement of Armed Forces in Future*

Often the debate raised delves into the issue of the need for India to achieve autonomy in the defence sector. More specifically, why should India try to achieve autonomy in defence manufacturing, especially when many developed countries in the world are ready to give it the required modern weapon systems and defence equipment. Though such arguments may sound logical in the short-term perspective, in the long run, it is vital for India to have strategic autonomy. This will be

possible only when India becomes economically, militarily, socially and politically strong and self-dependent. Being one of the fastest growing economies in the world and ranked the seventh largest economy globally, India cannot afford to be a net importer of security, if it wants to play an important role in the regional and global arenas. However, to achieve this, at the foremost, it is important to understand the futuristic requirements of the armed forces.

It is envisaged that the future requirements of the armed forces are going to be enormous, complex, dynamic and based on future warfare. As per the study titled “A Technology Perspective and Capability Roadmap”, prepared by Headquarters Integrated Defence Staff (HQ IDS) in 2013, India’s requirement for hi-tech military hardware, drones, precision weapons, radars, guns, sensors, aircraft, etc., would be worth about US\$ 100 billion over the next 10 years. The future requirements of the armed forces would be dependent on a number of factors, some of which are highlighted below:

- Technology is essentially changing the landscape of future warfare, which is going to be more complex, integrated, net-centric and hi-tech.
- The security environment in our neighbourhood will continue to be complex and the presence of volatile adversaries in the immediate neighbourhood necessitates a high level of operational preparedness by the armed forces at all times.
- To achieve a high degree of operational-preparedness, it is important that the Indian armed forces always remain updated, modernised and equipped with advanced weapon systems and platforms.
- In view of the prevailing security environment in our neighbourhood, there seems to be nil possibility of reduction in the requirements of the armed forces in the near future.

### **Why Should India Endeavour to Achieve Autonomy in the Defence Sector?**

The arguments in support of this are enumerated below:



- Attaining self-reliance in the defence sector is considered to be an inescapable requirement, both strategically and economically.
- Indigenous manufacturing of weapons and equipment is more important for the defence sector than for any other sector.
- Manufacturing of defence equipment indigenously will yield numerous benefits like:
  - It will help in identification of gaps in defence requirements and will lead to filling up those gaps in a faster timeframe.
  - It will enhance the level of India's operational preparedness substantially.
  - Domestic manufacturing will promote investment, employment and the growth of many ancillary industries within the country.
  - The nation would be able to save a large amount of foreign exchange.
  - India can also earn substantially from defence exports as there is a huge global market for defence equipment.
- If India doesn't develop its defence industry, China will emerge as a sole defence equipment manufacturer and supplier in the region. It has already sold some critical defence equipment to countries in the South Asian region, such as the sale of 24 China-Pakistan made JF-17 'Thunder' jets to Sri Lanka and the sale of two China-made submarines to Bangladesh. It is worth noting that 80 per cent of the Bangladesh military's inventory is from China. India's anxiety is grounded in China's increasing influence in the South Asian region.
- India is striving for a permanent seat at the United Nations Security Council (UNSC), however, it cannot remain effectively a net importer of security from four out of five permanent members of the UNSC.

## **Recommendations and Way Ahead**

In view of the aforesaid, it is recommended that the necessary actions must be taken to ensure that India develops the required capacity and

capability to become self-reliant in defence manufacturing, which would lead to greater strategic autonomy and economic development. Some of the significant recommendations and the ways forward are listed in the succeeding paragraphs.

**Build up Capacities and Capabilities of Domestic Defence Industry:** India should try to build up the capacities and capabilities of its domestic defence industry. The aim should be to meet the requirement of the defence forces for modernisation as well as upgradation of weapon systems and equipment indigenously. This will result in reducing dependency on imports, saving of forex reserves and lead to attaining strategic autonomy in the true sense.

**Develop Desired Competencies, Skills and Competitive Advantage in Defence R&D, Defence Production and Acquisition:** There is a need to develop the desired competencies, skills and competitive advantage in the fields of defence research and development, defence production and acquisition. This will lead to increased production of state-of-the-art and modern weapon systems and equipment. As this cannot be done by the public sector/government alone, greater participation of the private sector in these activities needs to be allowed. If needed, some hand-holding or incentives can be provided to the private sector initially till the time it develops adequate competency in the defence sector.

**Review of Existing Government Policies and Procedures:** It is worth examining that in spite of the government undertaking so many reforms in the defence manufacturing sector, no substantial progress has been made. To address this issue, the government should carry out a third-party neutral review of the various existing government policies, procedures and guidelines, which directly/indirectly affect the defence manufacturing within the country. The review committee should consult all the stakeholders of India's defence industry and seek their views on the subject and thereafter, come out with recommendations for improving

defence manufacturing in the country. The neutral or independent review of the policy is the most important aspect of the policy planning as it will generate more realistic feedback than any committee comprising representatives of the ministries or government owned organisations.

**Encourage Participation by Private Sector in Defence R&D and Defence Production:** The DPSUs/Ord Fys/DRDO still view the private sector as the supplier of raw material/components/sub-systems and not as a lead integrator which can compete with them on a level-playing field. Needless to say, the private sector should be encouraged by the government to take an active part in defence research and development as well as defence manufacturing within the country. If required, the government should provide it appropriate incentives, tax relief, funding and hand-holding for the initial period of ten to fifteen years. The nomination of two defence industrial corridors by the government is the right step in this direction, however, creation of defence specific Special Economic Zones (SEZs) may be considered on the lines of the Information Technology (IT) or pharma SEZs. Further, the private sector must be allotted some big ticket contracts to boost its confidence and morale.<sup>3</sup>

**Encourage Foreign Direct Investment (FDI) in Defence Industry:** FDI in the defence sector is most desirable as there is an urgent need for large scale capital infusion in this sector. Moreover, FDI will also help in getting the latest hi-tech modern technologies from the developed countries. Though this is easier said than done, to attract FDI, the government needs to clear various issues related to defence. Moreover, the private sector as well as FDI will seek the certainty of government orders to some extent in order to be commercially viable.

### **Key Suggestions for the Way Forward**

To make a way ahead in the desired direction, certain steps can be undertaken, which are as follows:

- **Encourage Public-Private Partnerships:** There is a need to

encourage interaction and real term partnerships between the public sector companies/organisations and the private sector. The strengths and weaknesses of both need to be acknowledged and jointly worked on. The specific capabilities and expertise of the private sector need to be harnessed and given due consideration. Though there should be fair competition between the two in the larger national interest, initially, at least for some years, there should be demarcation of manufacturing responsibilities between the private sector and public sector, in order to provide hand-holding to the private sector.

- **Projection of Feasible and Realistic Requirements by Armed Forces:** The three wings of the armed forces need to sit together and make a Long-Term Integrated Perspective Plan (LTIPP) in the true sense, which should be rational, pragmatic and really integrated. Further, the armed forces need to project the requirements of weapon systems and equipment, which are feasible, realistic and based on their threat perceptions.
- **Encourage Export of Defence Equipment:** The government should encourage export of defence equipment for which adequate expertise is available with the DPSUs/Ord Fys/private sector. Grant of incentives to the industry in this regard can also be explored. However, if the aim is to achieve export capability, the weapon system must first be in service with our armed forces.<sup>4</sup>
- **Coopt Academia and Research Institutes:** The DRDO should coopt the academia, universities like Indian Institutes of Technology (IITs), Indian Institutes of Science (IIS) and other technical institutes in defence research activities to harness their skills, knowledge and potential. Further, the knowhow available with the Indian technical diasporas must be harnessed for R&D purpose.
- **Creation of Defence Exclusive Economic Zones (EEZs):** There is a need for the creation of exclusive economic zones catering specifically for the defence industry. This will provide the desired concerted push

towards the growth of the defence industry. Designation of two defence clusters (one in UP and the other in Tamil Nadu) is a right step in this regard, however, more such efforts are required.

- **Grant of Incentives for Defence Industry:** There is a need for giving incentives to the indigenous defence industry in order to make it more lucrative and bring faster growth in the defence sector. These could be in the form of grant of a national award for excellence, tax holidays for the private sector, grant of permission for export of the stores produced, easy availability of funds, provision of land, and others.
- **Loosening of Bureaucratic Control:** As far as possible, the government should avoid being the manufacturer/controller of the defence sector. Rather, it should be the regulator and facilitator for the growth of the defence industry within the country.
- **Strategic Partnership Model:** The government has launched this wonderful and well-intended policy after prolonged deliberations and consultations. But there is a need for quick implementation and operationalisation of this policy.
- **Absorption of Technology:** There should be concerted efforts in absorbing the imported technology by the public sector as well as the private sector units.
- **Sense of Competition:** There should be healthy competition between the public and private sectors. There is a need to bridge the long standing trust gap between the private industry and the government. Therefore, the government should ensure a level playing field for the private industry, DRDO, DPSUs and Ord Fys.<sup>5</sup>
- **Focus on R&D, Innovations and Upgradation of Technology:** There is a need to continuously focus on R&D, innovations and upgradation of technologies in the field of defence. This will result in India gaining the competitive edge at the global level and soon becoming part of the militarily-developed nations. The existing gap between the development

of the prototype and mass production of equipment can be bridged with the help of the private industry. There is a need to incorporate the private industry at the prototype development stage itself.

- **Restructuring of DPSUs and Ord Fys:** There is an urgent need to restructure the organisation, functioning, system and processes being followed by the DPSUs and Ord Fys in order to enhance their productivity, efficiency and accountability. In view of this, the following measures as suggested below can be undertake:
  - These organisations must be reorganised to be ‘lean’, modern and competitive, so that they can be made more efficient and effective. Further, they should be made fully accountable for any time delays and price overruns.
  - Qualified persons ex private sector/academia may be inducted for efficient running and management of these organisations.
  - The DPSUs and Ord Fys should be corporatised and made more autonomous. These organisations should be out of the administrative control of the Department of Defence Production and given more leeway in running their affairs.
  - All the DPSUs/Ord Fys should be disinvested in a time-bound manner so that their value and expertise can be leveraged. This will also help in generating capital, which can be used for their modernisation and capacity expansion projects. Further, this will help in ensuring a higher level of corporate governance standards in the public sector units.
  - There is a need to upskill/refresh the technical skills of the workforce employed at these organisations. This will enhance the overall efficiency of these organisations.

## Conclusion

It is considered that the growth of the domestic manufacturing industry is essential for achieving self-reliance in the defence sector as well as to achieve strategic autonomy of the country. It is opined that the armed forces need to take an active part in the defence procurement process, being the ultimate users and also important stakeholders. The Indian

private sector has already demonstrated its competence in the fields of automobiles, IT and service sectors at the global level, however, the same is required to be replicated in the defence sector.

In order to be a modern, self-sufficient and advanced military, India does not need to transform only its defence forces (by reducing military manpower), but also the associated organisations and structures like the MoD, DPSUs, Ord Fys, DRDO, Directorate General of Quality Assurance (DGQA) and Defence Accounts Department. It needs to reform its entire framework of defence production and defence R&D.

Furthermore, it also becomes imperative to provide full thrust to indigenisation and build up the capacities and capabilities of India's domestic defence industrial base. This will then help to indigenously meet the requirements of the defence forces for modernisation/up-gradation of weapon systems and equipment. Resultantly, it will help reduce India's huge import bill and will also assist in the growth of many other ancillary industries and in generation of employment in the country. In view of this, the Indian government has launched many reforms and initiatives to reverse the country's huge arms import dependency, however, the result of these initiatives in the defence sector is yet to be seen. Hence, it is to suggest that there lies an enormous potential for investment in defence R&D by both the public and private sectors, which only needs to be harnessed in time to reap the dividends.

## Notes

1. As per the latest report of SIPRI (2014-18), India's share in the global arms import has reduced to 9 per cent, which is largely due to non-materialisation of supplies ex import by OEMs. Reduction in import is not attributed to an increase in the domestic defence manufacturing capabilities.
2. Laxman Kumar Behera, *Indian Defence Industry: An Agenda for Making in India* (New Delhi: Pentagon, 2016), p. ix.
3. Dalip Bhardwaj, "Make in India' in Defence Sector: A Distant Dream," Observer Research Foundation, May 07, 2018, <https://www.orfonline.org/expert-speak/make-in-india-defence-sector-distant-dream/>. Accessed on April 18, 2019.
4. Ibid.
5. Ibid.