

Indigenisation in Defence Industry – Current Status and Future Prospects*

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Introduction

Present Level of Indigenisation in India

India will become the 3rd largest Defence spender after the USA and China by 2014. There has been a 15-20 per cent increase in equipment buying for Defence Forces during the last five years while the Ministry of Defence (MoD) has projected an expenditure of about US\$ 100 billion over the next five year period. Details of defence expenditure for the year 2010-11 are given in **Table 1**.

Defence Expenditure (2010-11 Figures)	Rs. Crore
Defence budget	1,51,581
- Revenue expenditure (budget)	90,748
- Capital expenditure (budget)	60,833
Ordnance Factories (OF) and Defence Public Sector Undertakings (DPSU)	38,615
Equipment purchased from Large Private and Small Scale Industries + other PSUs	9,800

Table 1

From this table, it can be seen that out of the capital budget, the allocation to OF + DPSU is 65 per cent, import is around 30 per cent and a meagre 5 per cent is for purchase from private industry. Further, 50 to 60 per cent of OF and DPSU budget is allocated for defence imports. This figure, combined with 20 per cent of private sector imports, increases the figure of defence imports to 65-67 per cent. This renders the current Indian Armed Forces' modernisation plans, primarily based on imports, ineffective,

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and defeats the idea of indigenisation and development of the Defence Industry in India for self-reliance and self-sufficiency.

India has nine DPSUs and 41 OFs with an aggregate turnover of 38,622 Crore (US\$8.46 billion) in 2010-11. They employ base of 1.8 lakh people. With such a large capacity, India meets only 30 per cent of its Defence requirements internally while the remaining is imported. Besides, there are negligible defence exports from India.

According to the Annual survey of Industries conducted by the Ministry of Finance, the output per employee in DPSUs and OFs comes to around 15 lakh per year, as compared to a benchmark of 20-40 lakh per year for a range of manufacturing sectors within India. Indian private players contributed to around 10 per cent of the total Defence turnover in 2009, mainly as Tier II or III suppliers to the DPSUs and OFs.

The three pathways followed for Defence indigenisation in India are – indigenous technology development, transfer of technology, and licensed manufacture. This however, creates an incorrect impression that local manufacture is taking place. But this is far from the actual position, as the Intellectual Property (IP) rights, including designs, remain with the foreign manufacturer. Only the “*know how*” is passed on, without the “*know why*”.

Support of Defence Research & Development (R&D)

In Indian Defence, R&D is almost totally the prerogative of the DRDO which has 48 laboratories located across India, researching in various fields, and with a budget of nearly five per cent of the defence budget. The DRDO has always been successful in basic research and that has been passed on to the private industry for production processes. In all the scenarios, the role of private players remains confined to applied research and production process.

Various Constrains

As stated earlier, import forms the major part of defence equipment acquisition, even at the component level. The semiconductor chips which are the heart of systems, may it be mechatronics systems or communications systems, are all imported, and, therefore, the major basic components required for manufacturing are not available locally. The essence of self-reliance is hence defeated.

Besides chips, the industry also depends upon imports of items such as carbon fibre and special alloy steels.

India, while needing to invest in R&D, production technologies and integration of complex systems and equipment platforms, also requires developing of human capital for Defence. This is very crucial as this is the key for the execution of projects, product development, and for meeting customer requirements. It is important that young, talented people head the project teams for project management. This has largely remained neglected, and has thus affected the execution of all major projects eventually causing project delays.

Defence Procurement Procedure / Defence Production Policy Defence Procurement Procedure (DPP)

In DPP 2009, MoD announced a 15-year Long Term Integrated Perspective Plan (LTIPP) of the Armed Forces outlining technology perspective and capability building. The road map of the MoD is to be shared with the Industry Associations to enable the industry to prepare for creating these technologies and capabilities through in-house R&D or technology tie-ups with leading foreign original equipment manufacturers (OEMs) through joint ventures (JVs) / teaming agreements.

In DPP 2010, a new category, 'Buy and Make (Indian)' was introduced to encourage participation of private sector companies as *prime contractors*. In this category, a minimum 50 per cent work share must be under the scope of the Indian industry (Prime) and remaining 50 per cent could be sourced from foreign OEMs. This will facilitate formation of JVs with foreign OEMs.

In DPP 2011, the scope of the offset policy guidelines was expanded to include civil aerospace, internal security and training within the ambit of eligible products and services for discharge of offset obligations. The list of companies eligible for Transfer of Technology has also been expanded to include maintenance infrastructure.

Categorisation of Procurement Schemes

The Procurement Schemes can be categorised as under : –

(a) Buy (Global) - Outright purchase from foreign/Indian vendors.

(b) Buy and Make with Transfer of Technology - Purchase from foreign vendor followed by local manufacture under licensed production by a designated Production Agency.

(c) Buy (Indian) - Outright purchase of a product from the Indian industry.

(d) Make - (High Tech) for development of new products and systems to meet the MoD requirement, with technology tie-ups with foreign OEMs for selected technologies through a Memorandum of Understanding (MOU). MoD will select two industries as development partners and fund 80 per cent of the cost of development of the product/system for each of the selected partners. DPSU/OFs and private sector companies with defined qualifications for infrastructure, technical and financial capabilities can participate.

Defence Production Policy

Defence Production Policy was issued recently to "harness the emerging dynamism of Indian industry and capabilities available in the academia and the R&D institutes". The policy is believed to be instrumental in promoting Small and Medium Enterprises (SMEs), providing necessary impetus to R&D, addressing grievances of the Indian industry, and to design domestic manufacturing in line with the futuristic demands from the Defence Forces. The Production Policy also aims at progressively identifying and addressing any issue which impacts, or has the potential of impacting, the competitiveness of the Indian defence industry in comparison to foreign companies.

Issues in Implementation of Policies/Procedures

Repeated Dilutions in the Offset Policy

Offsets were introduced in the Indian Defence Industry with a perspective to build-up the defence industry capability, and integrating it with the global supply chain, while providing self-sufficiency to the Indian Armed Forces. The subsequent dilution of Offsets norms since the release of the Offset Policy has rendered the whole policy as non-progressive. A few such points are highlighted below:

(a) **DPP- 2008.** Allowed offsets in non-licensed defence fields, allowing discharging offsets through low-technology, quasi-military products like field shelters and air conditioning.

(b) **DPP- 2011.** Permitted discharge of offsets in non-defence fields of civil aviation and homeland security

(c) **Defence Offset Guidelines dated 01 August 2012.** Allowed multipliers for SME / MSMEs, thus limiting the capacity build up for the Defence industrial base to component / sub system level. However, no multiplier has been provisioned for system integration capability build up which is essential for self-reliance in defence manufacturing.

(i) Multiplier for technology acquisition by DRDO only. No multiplier for technology acquisition by industry / Joint Ventures (JVs), thus giving no incentive for next generation product development through private sector / JVs.

(ii) Multipliers introduced without raising the overall offset percentage, thus not leveraging the complete potential of offsets for developing the defence industrial base.

(iii) No mandatory sourcing by global OEMs from the Indian Industry.

(iv) No specific provisions to facilitate access of Indian industry to the global market / export.

Conflict of Interest – MoD

In the field of defence acquisitions, policy making, planning, procurement, R&D as well as production functions are all controlled by the MoD. The Department of Defence Production represents MoD on all policy bodies, production boards, procurement decision making bodies and DPSU Boards. This leads to a classic "*ownership syndrome*" where the MoD decision makers, tasked with judging the capability of the Indian Industry in a holistic manner, may not make objective decisions and will tend to protect the interest of Government owned industries under their charge. Private sector industries are the victim of this classic conflict of interest situation. Representation of the entire private sector is limited merely to a single presentation by industry bodies to Capital Acquisition Plan Categorisation Committee (SCAPCC). As a result, in spite of the Raksha Mantri stating on record a number of times that there will not be any more purchases on nominations, many major programs continue to be nominated to DPSUs. Nomination of Integrated Air Command and Control Systems (IACCS) and

Electronic Warfare (EW) programmes to Bharat Electronics Limited (BEL) is a recent example.

Lack of Accountability for Building Local Capabilities

According to the Vijay Kelkar Committee report on review of Defence Procurement Procedure, a paradigm shift in the concept of indigenisation is required – from basic component supply to Tier 1 industries, to higher level of design and system integration with adequate capability enhancement and development. Also, a centralised agency capable of achieving the above is lacking. The Committee's recommendation of nominating selected private sector companies as Raksha Udyog Ratnas (RuRs) has not been implemented, although shortlisting has been completed.

Entry Barriers for Private Players

Private players wanting to enter the defence space find themselves competing against much larger and more experienced DPSUs and established global manufacturers with a track record and available products. A more pro-active role in nurturing and developing the private defence sector is required from the Government, especially during the initial period.

Required Skill Resources for the Sector

With increasing technological sophistication in defence, the skill requirements of the defence industry are very specific. For meeting these requirements, a framework of specialised courses needs to be created, with additions to curricula of existing and related fields. A network of knowledgeable experts in the field needs to be tapped. Also, the private industry must re-employ skilled retired personnel of the Indian Armed Forces in various programmes and projects, enabling the private sector to produce to the expected level of quality and satisfaction of the user.

Coordination between R&D Institutes and Private Sector

Research institutes like DRDO are a rich source of human capital which can be very effectively leveraged to help the private sector jump-start its development. In the current environment of blanket secrecy, it is difficult to develop meaningful partnerships with academia beyond DRDO. Research grants and funding can be made available through a Public Private Partnership approach if private players are assured that some of the gains can accrue to them.

Skill Upgradation of the Interested Private Participants

Weapon technology requires a very high level of precision and sophistication. Skill upgradation programmes for industry professionals in the form of certifiable training and courses are required. Necessary support and advice in dealing with administrative procedures and regulations involved will be required, and as exports start growing, private players will have to be trained in managing international agreements and regulations.

Foreign Direct Investment (FDI) in Defence Industry

FDI in defence manufacturing is capped at 26 per cent. On the other hand, 100 per cent FDI is permitted under the automatic route in the Services Sector, irrespective of whether they can provide service to the Defence Sector or not. Applicability of the FDI cap for services industry catering for defence industry needs to be clarified.

According to the recommendations of the Industry Associations, FDI in Defence needs to be increased from current level of 26 per cent to 49 per cent subject to the following:

- (a) Control and governance to be in Indian hands.
- (b) State of the Art transfer of technology, cleared by the OEM's government, to be made available for the JV.
- (c) Creation of 'Centres of Excellence' in the selected areas.
- (d) Products and technologies to include 'Priority List' of MoD.
- (e) Promotion of export from JV and providing access to global markets for the industry.
- (f) JV products should have more than 50 per cent indigenous content.

Lack of an Official Defence Export Policy

In the absence of any official Defence Export Policy, the private industry has to approach MoD for obtaining permission for every export opportunity on a case-to-case basis. There has been no announcement by the Government of a negative list of countries, nor an official list of banned products.

Ambiguity in Definition of Defence Industry

Presently defence licenses are issued only for manufacturing. There are many companies involved in defence production, e.g. Information Technology companies. They do not require a license for producing defence related software or providing services. It is not clear whether such companies are to be considered as Indian defence industry or not. The definition of Defence Industry is still not very clear.

Delay in Issue of Defence Production Licenses

As per DPP - 2006, the Indian defence industry includes DPSU, Ordnance Factory Board (OFB) and any private defence industry manufacturing under an industrial license. By this, public sector companies mainly get qualified as Indian defence industries because very few licenses have been issued to the private sector. Further, for the past few months all fresh license applications as well as applications seeking renewal of an existing license or addition of a factory or address to an existing license, have been put on hold for verification of security aspects.

Lessons to Be Learnt From Defence Models of Other Countries

The USA has a National Defence Industrial Association (NDIA) which connects government officials, military and industry professionals, branches of the armed forces, homeland security etc. It has the following functions:

- (a) Assist Government in policy development areas.
- (b) Provides NDIA members with access to key Government and industry officials.
- (c) Monitors and advances sound and practicable procurement/acquisition policies.
- (d) Critical technologies and focus areas are outlined and systematically communicated.

Other nations like the UK (National Defence Industry Council) and Korea (Korean Defence Industry Association) have similar arrangements. In the UK, the Defence Technology Strategy (DTS) nurtures an innovative environment for creating new technologies.

The Way Ahead

JV Formation Between DPSUs and Private Industry

With the recent guidelines for JVs between DPSUs and private industry, the MoD has taken a very constructive step towards partnering and involving the private industry. Clarity is yet to emerge on work allocation to these entities by the DPSUs. It is to be noted that these newly formed JVs should be a combination of the best of both, that is, the skills and infrastructure of the DPSU on one side, and the agility and execution capabilities of the private player on the other. Else, the JV entity formed may only add to the list of DPSUs that already exist.

Collaborative Approach and a Few Success Stories

There are many examples of successful collaboration of the Indian defence private industry with various other players of the defence industry such as DRDO, DPSUs and the Defence Forces.

(a) **Rohini / Revati Radar.** One of the examples of successful collaboration of DRDO, DPSU (BEL) and the Private Sector (L&T) is the development of the Rohini and Revati Radar system. For this project L&T has developed the mast and energy system, whereas the design and data analysis centre was implemented by DRDO and BEL respectively. The prototype radar is shown in **Figure 1**.

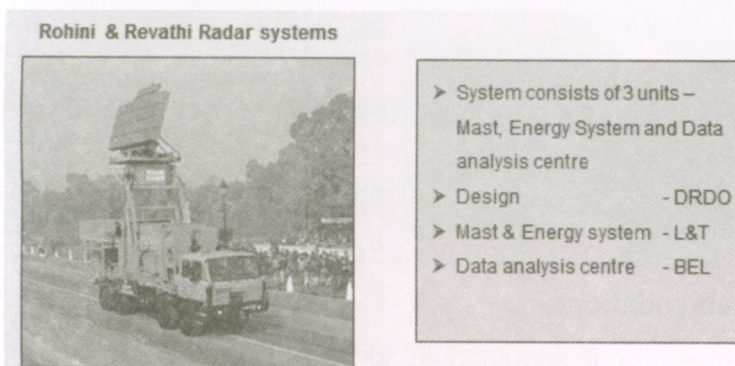


Figure 1

(b) **Pinaka MBRLs.** Pinaka Multi Barrel Rocket Launcher (MBRL) has been jointly developed by L&T (launcher and fire control system), BEML (reloading and supply system) and OFB (weapon system). The Pinaka has been successfully inducted in the forces with the first two regiments supplied by

L&T and TATA. The Pinaka MBRL is shown in Figure 2.

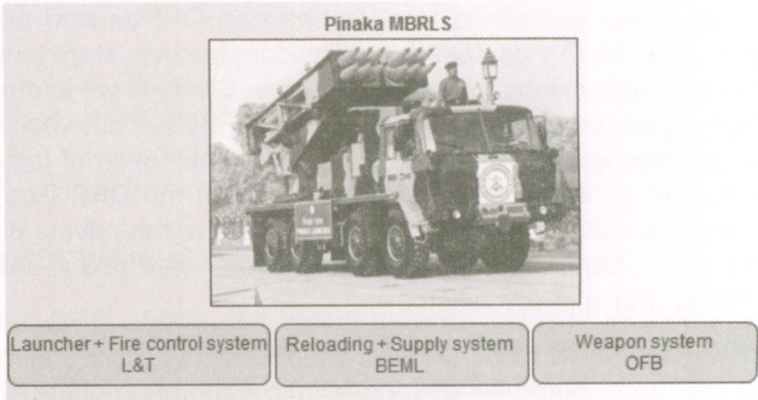
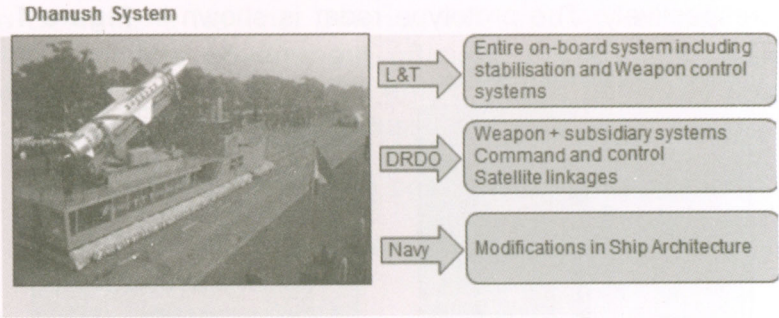


Figure 2

(c) **Dhanush System.** Dhanush system is an exclusive example, where the user (Indian Navy) has interacted closely and provided valuable inputs for the successful development of the system according to their need. The Dhanush system has been jointly developed by L&T (system provider) and DRDO (design supplier).



Recommendations

The Government should plan to give incentives to the private industry for providing an end to end defence product. The incentives should be such as a risk sharing contract, tax relief on production and R&D, a research grant etc., to help producers in ensuring that their business remains viable.

There is need for a dedicated department in the MoD which will look after the interests of the private industry engaged in defence

production. Besides this, the Government should consider the DPSU and the private sector as one in the defence industry, and allocate jobs accordingly. Further, the Research & Design organisations (DRDO & Academia) and the Armed Forces should work together towards self reliance and move towards the indigenisation of the defence industry.

The Government should shift from the existing selection of a successful bidder which is on the L1 basis alone, to the L1-T1 concept for ensuring quality of equipment and reduction in life cycle cost.

The Government should consider enhancing the FDI limit to 49 per cent which will facilitate receipt of state of the art technology from foreign OEMs. The capping of 26 per cent FDI is holding back major global defence manufacturers from forming JVs with Indian firms and from giving important know how.

The offset policy needs to be regulated strictly. Dilution of offsets has resulted in high end technology not being inducted in the Indian defence industry.

The private industry should use skilled retired personnel of the Indian Armed Forces in various programmes and projects, thereby enabling the private sector to produce equipment to the expected level of quality and satisfaction of users.

Conclusion

On the positive side, the Government has framed guidelines for formation of JVs between DPSUs and private industry players. A few JVs have already been formed, to leverage the benefit of the vast experience of the DPSUs in defence production and the good infrastructure and resources, and the flexibility available in the private sector.

The 'Make' programme has made a good beginning with the Tactical Communications Systems (TCS) and Futuristic Infantry Combat Vehicle (FICV) projects of the Indian Army being in advanced stages. It is also learnt that many 'Make' projects are in the pipeline.

If the suggested recommendations are implemented by the Government in right earnest, the day is not far away when our defence will have a very high degree of indigenisation.



Panel Discussion in Progress



A View of the Audience