

## **Defence Equipment Acquisition: An Assessment**

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The primary objective of inventory management for the defence forces is to sustain and update their capabilities to perform the tasks given to them. The study of defence equipment purchase is normally confined to arms and equipment used for countering external aggression, although specialised equipment for surveillance and weaponry used in close combat situations especially in urban areas or those which result in little collateral damage are also utilised by the armed forces in anti-terrorist or counter-insurgency operations. Considering the vast sums involved and the attention defence purchases get in Parliament as well as the media and the public domain, it would be prudent to subject them to an in depth study. Putting the process through a rigorous analysis would lead to better understanding, help impart greater transparency and most importantly lead to development and use of analytical tools that would enable decision-makers at the evaluation, policy, technical and commercial levels.

### **Evolution of Procedures**

A digression into the evolution of purchase procedures would be of relevance at this stage. Post- Bofors procurement controversy, the need to codify procedures led to a set of instructions in 1992. However, they were rooted in the ethos of the defence institutional arrangements and were treated as classified instructions. This pre-empted wide dissemination of information and a critical examination by those outside the defence establishment. Moreover, they were meant to be used by the existing acquisition structure and so did not break any new ground. The restrictions also resulted in even those who were to use the procedures from getting the broader picture. Procedural mistakes, impromptu innovations or even

resorting to short cuts became common. Nonetheless, core provisions were rarely overlooked. The aftermath of the Kargil conflict also brought in significant reforms in various sectors, including the acquisition infrastructure. The following inadequacies of the existing structures were addressed:

- Absence of an organisation dedicated exclusively to acquisition where officers were multi-tasked;
- Agencies working in watertight compartments, with no high level oversight, resulting in advantage to vendors who were better informed since they interacted with many agencies;
- Procurement decisions were hierarchical rather than collegiate. This had an adverse effect since it was safer to object or raise peripheral queries rather than be singled out as the author of a new course of action or a crucial decision;
- There was no inbuilt system of continuous or stage wise oversight, allowing mistakes to prevail or coming to light after the contracts are signed;
- The database available with the various agencies was inadequate. These resulted in unrealistic Qualitative Requirements (QR) formulation, restricted vendor base and were a handicap during negotiations because of limited knowledge on costs and prices.

The procedures also did not cater for:

- Procurement in emergencies;
- Evaluation of bids on technology transfer; and
- Long gestation projects (viz. Naval projects) requiring sustained interaction between users, designers and builder.

Accordingly, during the reform process, stress was laid on bringing in efficiency through the synergy of various stakeholders. Demands of transparency, of at least the procedures, which guided the acquisition process if not the weaponry sought for, led to its declassification and wide dissemination through the Internet. This was done in December 2002. Additions and refinements came in 2003, 2005 and in 2006. The composite Acquisition Wing witnessed the Services and the Departments of the Ministry of Defence (Defence Department, Department of Defence Production and Defence Research & Development) and Defence (Finance) working in greater synergy.

The Acquisition Wing of the Department of Defence, with Technical Managers (from the Services), Finance Managers (from the Financial Services) and Acquisition Managers (from the Administrative Services) now function as a composite unit with a Special Secretary heading it. The Defence Procedures were elaborately codified with separate sections for Transfer of Technology, Naval constructions and Standard Contracts, and these widely disseminated. The Acquisition Structure, in turn, was integrated with the higher echelons responsible for perspective planning, determination of priorities and necessity for equipment, indigenous R&D and production so that purchase of equipment is properly integrated into the overall defence management structure of the Government. An indication of the efficacy of the reforms is the extent to which funds earmarked for capital expenditure (modernisation) in the last couple of years have been fully spent (substantively and not by the subterfuge of parking them with Defence Public Sector Undertakings).

Further refinements can now be contemplated. The rationale behind a particular procedure could be explained and incorporated as a preamble or in explanatory notes. This is necessary as the environment in which defence purchases take place differs from that in the civil sector, though comparisons are apt to be made. Statistical and Operations Research tools need to be utilised, backed by empirical studies. The use of such techniques would provide a quantitative dimension to the examination of various options, making possible more informed decision-making. This would lead to a more elaborate and perhaps convincing reasoning that would be of immense value to any oversight institutional mechanism either within the system, as envisaged in the present procedure, or to external audit authorities.

### **Equipment Profile and Sources of Supply**

It is not the purport of this paper to lay down a theory or to suggest appropriate analytical tools. However, in the subsequent paragraphs, an attempt is made to examine various facets of defence equipment purchases so that the analyst can, for each step in the decision-making process, come up with an appropriate matrix as a result of a fuller knowledge of the complexities, constraints and limitations. Defence equipment themselves have special characteristics. Most pertain to high-end technology (which limits the sources of procurement); they are complex systems rather than discrete items (necessitating integration of sub-systems manufactured by

a large number of vendors); they are susceptible to constant upgrades and modernisation (requiring maintaining contacts with O&Ms over longer periods); they require stringent quality checks during manufacture and at the time of purchase (hence an elaborate quality control organisation has either to be built in-house or the self-certification procedures need to be subjected to verification); and they are subject to export controls, embargos or sanctions (requiring adept diplomatic effort).

Perhaps the first step would be to understand the product mix. Owing to several factors such as (a) Long gestation period for acquisition; (b) Need to set up maintenance and product support infrastructure; (c) Train the user in the use of the equipment for optimal exploitation; (d) Standardisation; (e) the need to extract full value for sums spent; and (f) Need to keep up with fast changing technology, the inventory shows a range of equipment and broad spectrum of technologies. For simplification of classification the equipment in use is generally put into three categories (i) Those which have outlived their utility, become obsolete and are to be phased out without any fresh induction; (ii) Those which have stabilised after long use but which would soon have to be phased out when their utility life span gets over, and hence require only small quantities of fresh inductions and (iii) The state-of-the-art equipment to impart the necessary cutting edge to the forces. Statistical tools may well be used to determine an optimal mix of the three so that proper budgeting can be done.

The next critical factor is the source of supply. The goal of self-reliance mandates the sustenance and expansion of an indigenous defence industry, backed by R&D. In the Indian context, this task is to be carried out by the Defence Research and Development Organisation (DRDO), the Ordnance Factory Board (OFB) and Defence Public Sector Units (DPSUs). The latest to enter are the private players bringing in their own brand of expertise. Indigenously developed products can either be productionised as complete equipment or integrated with imported items. Imports are inevitable and, at present, constitute a large segment of the inventory. A fallout of imports is the transfer of technology arrangement, facilitating indigenous manufacture. Various models for such transfer have been developed over the years; starting from production technology, graduating to imbibing design technology and thereafter participation in joint research and development.

It is now a well-established axiom that in the defence equipment sector there is a near monopoly within the country with the state sector dominating production, and competition abroad—where several leading international defence suppliers operate. Costing of indigenous equipment is problematic. Buyers (the different services) have complained that an assured market tends to make suppliers less cost conscious and sellers have a grievance that they are being squeezed or subjected to interminable discussions before orders are placed because of the dominant position of the state as the sole buyer. Development of prototypes envisages identification of producers (both in the public and private sectors) at the initial stages itself. Such developers look for preference at the stage of production. However, when the product stabilises, there is the question of the quantum of order that would sustain the producers. So whereas prudence demands that competition is encouraged, to get value for money, such competition results in the closure of all but one or two suppliers because of limited requirements (not to mention the sporadic nature of placement of defence orders). A theoretical examination of such scenarios can lead to a better understanding and decision-making. A subset could be upgrades and weaponisation where the QRs must include compatibility with the platform.

As regards imports, a large number of products and many suppliers is expected to lead to better competition and value for money. This is, however, not reflected in the market. Costing remains an esoteric exercise. Worldwide, there has been consolidation of defence industry and suppliers are shrinking. Export policies of the supplier's country or various technology control regimes restrict the sale of equipment with the latest technology. Moreover, since defence equipment sales are adjuncts of foreign policy, various strings can be attached. From the purchaser's perspective, imports can be used to leverage other non-defence related goals. Offsets (currently mandated for purchases above a limit in India) are another emerging area. All these issues can be subjected to greater study and economic analysis.

### **Introduction and Use of Analytical Tools**

Within this broad and complex picture, it may be desirable to subject the characteristics of each set of purchases within the three categories of equipment mentioned earlier, to a study and thereafter examined against QRs, evaluation criteria and concepts like life cycle costs.

In the case of obsolescent items, their characteristics would be (i) No

fresh inductions (efficacy is reduced and technology is outdated); (ii) Need for frequent repairs and maintenance (these become more difficult with time); (iii) Limited availability of spare parts (as sources of manufacture dwindle). The analysis could concentrate on: (i) alternatives for maintenance and repairs. These could be in-house facilities set up by users in cooperation with producers of basic equipment or with franchisees; (ii) spares to be obtained as part of initial agreement on life cycle support or by manufacture through Transfer of Technology; and (iii) in the event of little or no competition, how to discover the price which would give value for money.

Stabilised items would be characterised by: (i) limited inductions (they need to be ultimately replaced by those having later technology); (ii) the need to prolong useful life, necessitated by shortage of funds for replacement by state-of-the-art equipment, through upgrades. The issues for consideration would be: (i) identifying limiting factors for upgrades (existing platform, skills of Integration); and (ii) identification of integrators and items utilised to upgrade.

Induction of state-of-the-art equipment remains the most important aspect of defence equipment, requiring skills at all levels. These skills involve: (i) giving importance to products (identification from a vast array); (ii) planning and prioritising (perspective; five years and annual); (iii) Bringing out a case for funds; (iv) formulating QRs and testing and trial procedures; (v) identification of vendors and creating a system of vendor rating; (vi) establishing evaluation procedures for items procured as well as Transfer of Technology; and (vii) phased development starting with Mark-I and proceeding thereafter. Aspects of economic analysis need to be identified for each of the following processes: (i) inter and intra-services equipment prioritisation; (ii) identification of essential and desirable features and possibility of giving weightage to each criteria; (iii) factoring in standardisation and limiting types of inventory for cost effective maintenance and training; and (iv) giving weightage to user preference (since in any conflict a determining factor is the man-machine coordination).

## **Conclusion**

The above is only an illustrative list and is not exhaustive. However, what it does indicate is the urgent need for application of economic

reasoning to defence equipment purchase. Such expertise could be developed in-house or to the extent that security is not compromised, by utilising the services of outside experts (individuals as well as organisations). As and when a body of knowledge develops, it would have beneficial practical applications.

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