Defence Production and Acquisitions: Enhancing Capability Through Integrated Approach

Mrinal Suman

The current Indian dispensation with respect to the development of the indigenous defence industry and the modernisation of the armed forces has been a total failure. Even 65 years after independence, India has to import close to 75 percent of its defence requirements. Worse, indigenous production of the balance 25 percent is limited to low-tech items and components. No high-tech equipment has so far been developed and produced in the country. Even in the much-touted field of missile technology, India has achieved too little too late.

The disconcerting state of the equipment held by the armed forces is no longer a state secret. Almost all reports of the Parliamentary Committee on Defence have been expressing concern at the slow pace of modernisation. The leaked letter of the previous Chief of the Army Staff to the Prime Minister had also highlighted critical deficiencies that the Army had been carrying for alarmingly long periods. Close to 50 percent of the inventory is nearing the end of its useful service life and needs replacement. Modernisation of the Indian armed forces is estimated to be lagging behind by close to 15 years. The picture cannot get bleaker.

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Defence Acquisitions and Defence Industry

No country can aspire to acquire a position of strength in the comity of nations without a reliable and flourishing industrial base to support its armed forces. In fact, the broad contours of a nation's foreign policy are defined by the prowess of its defence industry. Foreign defence systems are like crutches whose dependence is afflictive but with suspect reliability. Most arms exporting countries have subjective norms for the issuance of licences for exports. Many impose riders on the usage of equipment. Yet, there are countries whose domestic laws preclude assured subsequent sustenance of the equipment bought. As the number of manufacturers who are ready to sell the latest weapon systems is limited, they call all the shots, and the importers have to accept their diktats. Therefore, development of indigenous defence industry is an inescapable prerequisite for assured national security.

India has neglected to develop its indigenous defence industry due to the overindulgence of the public sector, the failure of the Defence Research and Development Organisation (DRDO) to deliver, and the lackadaisical approach of the government. Additionally, the Indian leadership and bureaucracy lack the necessary expertise, understanding and knowledge of national security imperatives. Consequently, they fail to appreciate the criticality of self-reliance in defence production. The level of ignorance of the policy-makers can be gauged from the fact that they cannot differentiate between procurements and acquisitions. They consider them to be synonymous. That is why the Defence Procurement Procedure (DPP) uses both terms in a transposable manner as if they mean the same. It is a major factor that has contributed to India's continued dependence on imports.

Whereas procurement means outright purchase of a system available in the market that satisfies a buyer's performance requirements, an acquisition process is far more complex and multifaceted. An acquisition programme helps create an environment in which multiple options are explored analytically, keeping long-term strategic implications in mind. Outright purchase from vendors is one of the options available. Acquisition entails analysis, design, development, test, production, sustainment, modification and disposal of equipment. Technical experts carry out detailed analysis of the performance characteristics projected by the Services and translate them into essential parameters. After feasibility studies, a candid and objective appraisal of the indigenous technological competence is carried out to examine the feasibility of development/production within the country. It requires wide ranging discussions with experts, industry and laboratories. Issues related to technology maturity and the risks involved are also evaluated and factored in.

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Development of new defence equipment and its acquisition is a long, complex, arduous and time-consuming process. Multiple agencies have to perform vital functions, both concurrently and sequentially. A large number of interdependent variables have to be managed to provide the required equipment to the armed forces in an expeditious and cost-effective manner. Being a highly specialised, intricate and multifaceted process, it requires expert handling. Once various alternatives that can potentially satisfy the mission needs are analysed and the preferred solution is identified, a detailed roadmap is evolved of all critical activities, from inception to post-production support. Major aspects like generic entrance

criteria, exit criteria, fixation of phases, milestones and periodic reviews are discussed, quantified and fixed. Time and budgetary support required to design, develop, productionise, deliver, deploy, operate, sustain and dispose of the system are duly planned for. In short, a defence acquisition system is a management process, evolved to ensure delivery of the defence equipment sought by the Services in the required timeframe and with the best value for money. Every country has to evolve its own distinct processes and procedures that suit its national strategic aims and are in consonance with the state of indigenous industry, the degree of mastery over defence technology and the availability of resources. Development and sustenance of the local defence industry is a natural fallout of the process.

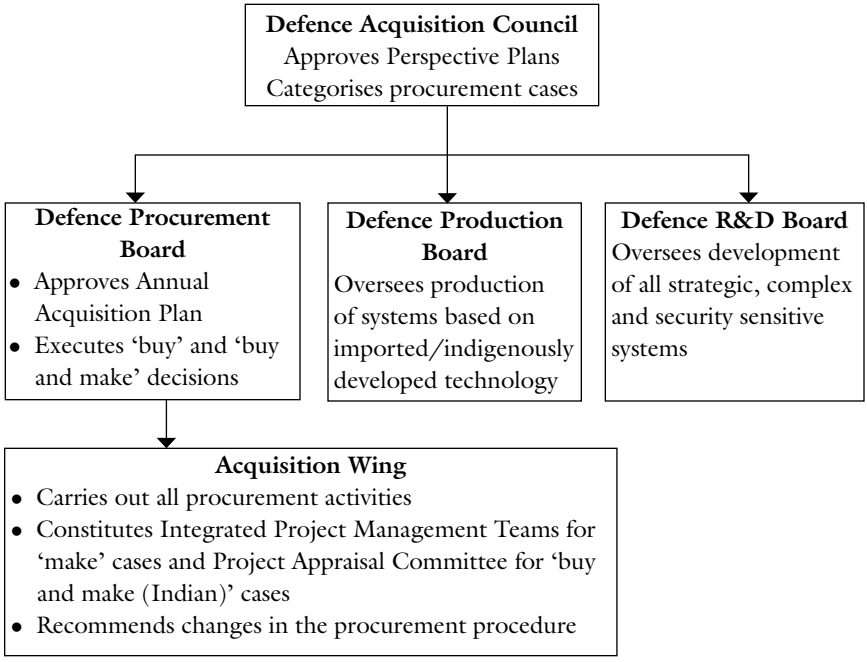
The Indian Conundrum

The post-Kargil reforms resulted in the creation of dedicated procurement structures. The Defence Acquisition Council (DAC) under the Defence Minister has been constituted as an apex authority. In addition to according in-principle approval to the 15-year Long-Term Integrated Perspective Plan (LTIPP) and 5-year Services Capital Acquisition Plan, it categorises all procurement proposals, thereby specifying the route to be taken to acquire the required equipment: outright purchase of the total quantity ('buy') or indigenous development ('make) or initial purchase from the foreign vendor followed by licensed production in India ('buy and make'). The above mentioned three routes have been further divided into nine sub-categories: 'buy (Indian)'; 'buy (global)'; 'make (strategic)', 'make (high-tech)'; 'make (low-tech)'; 'buy and make (global)'; 'buy and make (Indian)'; 'ship-building (nomination-public sector)'; and 'ship-building (open competition)'.

Decisions flowing from the DAC are implemented by the following three boards:

- **Defence Procurement Board:** It functions under the Defence Secretary to oversee all activities related to 'buy' and the buy portion of 'buy and make' decisions.
- **Defence Production Board:** The Secretary, Defence Production heads it and it handles all activities related to indigenous manufacture in cases flowing from 'buy and make', 'buy and make (Indian)' and 'make' decisions.
- **Defence R&D Board:** It is headed by the Secretary, Defence Research and Development (R&D) and is responsible for the progress of, and to monitor and report on, all 'make (strategic)' projects requiring sophisticated technology of strategic, complex and security sensitive nature.

Fig 1: Implementation of Decisions Flowing from the Defence Acquisition Council



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The Acquisition Wing has been created as an executive agency, primarily to implement 'buy' and 'buy and make' decisions. To start with, it was required to report only to the Defence Procurement Board. However, with the introduction of additional categories, a great deal of multiple tasking has crept in, thereby diluting the channel of command/ reporting. Now, the Acquisition Wing has to take directions and submit reports to the Defence Production Board as well. In both 'make' and 'buy and make (Indian)' cases, the Acquisition Wing has to function under the oversight of the Secretary, Defence Production.

Disjointed Functioning Afflicts the Indian System

India's defence industry and the acquisition system are in a pitiable state primarily due to disjointed functioning and gross inefficiency of the public sector. There is a total lack of unity of purpose. Every agency and every functionary has its own agenda. They guard their turf with fierce fanaticism and strive to strengthen their hold on the process. That is why every initiative to introduce radical reforms gets stalled and every review of the system results in minor tinkering with the provisions, which means little. Although the bureaucracy and the Services are required to function as an integrated team to provide the Services with the required equipment, a culture of 'we versus them' has vitiated the working environment. As Service Headquarters (SHQ) are out of the decision-making loop, the bureaucratic oversight spans almost all acquisition activities and has a direct bearing on the success of any acquisition programme. The equation between the bureaucracy and the Services is not that of equal partners. Many bureaucrats consider themselves to

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The Services blame the bureaucracy for the tardy progress of modernisation proposals as the need for repeated concurrences at every stage causes considerable delays. It is further alleged that the bureaucracy lacks the necessary knowledge of the military's training needs and operational requirements; the nature and complexities of defence equipment; and the emergence of newer technologies and the need to keep pace with them. The Services feel that some officials raise infructuous observations on every issue to cover their sense of inadequacy. The bureaucracy blames the Services for poor staff work; careless and faulty formulation of the General Staff Qualitative Requirements (GSQRs); frequent changes in performance parameters and priorities; and sloppy field trials. According to many officials, several cases suffer from such major infirmities that their redemption becomes untenable. It is said that most of the acquisition cases get aborted due to flawed GSQRs.

Additionally, absence of inter-Services cooperation has been the bane of the Indian defence apparatus. Prejudiced predisposition and constricted attitude are the biggest impediments in bridging the trust deficit between the Services, that are more concerned about furthering their own interests rather than developing an integrated approach. Every proposal that affects a Service's span of control faces strident resistance. The Navy and the Air Force fear that the sheer size of the Army would overwhelm their independent identities. The malaise of disjointed functioning is so acute that the three Services buy the same equipment (like unmanned

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aerial vehicles, sniper rifles and diving equipment) from the same foreign vendor, albeit at different rates, without consulting each other. Obviously, the nation suffers – no benefits are drawn through economies of scale. Moreover, technical support infrastructure gets duplicated/triplicated.

The Army prepared the GSQR for helicopters without showing it to the Air Force lest it scuttle the whole procurement proposal. Similarly, it did not consult the Navy while formulating the GSQR for deep sea diving equipment for its special forces. Needless to say, both GSQRs were highly flawed and had to be retracted, leaving critical gaps in the modernisation schedule. It is, indeed, a dismal and worrisome state of affairs. The unbridled monopoly of the public sector is thwarting open competition and stifling the growth of the defence industry. Although the Ministry of Defence (MoD) keeps promising equal opportunities to the private sector, every policy initiative continues to favour the public sector. The major blame for the current dismal state of the Indian defence industry can be apportioned to the non-performance of the public sector. Over a decade has passed since the defence industry was opened to the private sector but the private sector is still to get due recognition. The public sector continues to bag all major contracts. Despite possessing excellent infrastructure, manufacturing facilities, qualified manpower, mastery of latest technologies and financial strength, the private sector is considered fit only for the production of some low-tech items and components. The public sector does not have to compete for orders and gets them through nomination. Being assured of orders from the

Services, it has no incentive to keep pace with the technological developments.

Despite the fact that it is always the public sector that receives technology for subsequent production in India, it has singularly failed to develop any indigenous competence. Instead of mastering imported technology and using it as a springboard to develop newer technologies, it has found the easiest way of making money through trading. It assembles imported sub-systems and sells them to the captive military at unethically exorbitant profits. As seen above, the whole acquisition system is in disarray – in fact, it is a free for all. The bureaucrats want to continue their domination through status quo; the armed forces remain busy in their inter-Services squabbles; the DRDO keeps expanding its empire without any worthwhile output; and the public sector keeps trying innovative ploys to keep the private sector out. There is no central authority or apparatus in place to ensure expeditious modernisation of the armed forces and drive the growth of the indigenous defence industry. The present system of the Acquisition Wing handling acquisition functions and the Department of Defence Production (DDP) overseeing production activities can never deliver.

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Defence Industry and Acquisitions: Learning from Others

A study of the defence acquisition system of five major military powers shows that unity of purpose, integrated planning, formulation of combined perspective plans, unity of effort and joint acquisition programmes are given utmost importance. Jointness is considered to be the key imperative. Under the Goldwater-Nichols Department of Defence

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Reorganisation Act of 1986 (GNA), the whole procedure in the United States has been made highly integrated. To start with, the Secretary of Defence establishes policies, strategy and prioritised goals for his department. Planning is carried out in a collaborative manner to craft plans and programmes. Thereafter, through the Joint Capabilities Integration and Development System, a systematic analysis is carried out for assessing gaps in military joint war-fighting capabilities and recommending solutions to resolve these gaps.

The Office of the Under Secretary of Defence for Acquisition, Technology and Logistics has been nominated as the nodal agency and the overarching authority. It is assisted by the Functional Capabilities Board in assessing capability gaps and the Joint Requirements Oversight Council in reviewing programmes. The Defence Acquisition Board and the Information Technology Acquisition Board are responsible for approving Major Defence Acquisition Programmes and Major Automated Information Systems respectively. Both boards are further supported by Integrated Product Teams for ensuring continuous and effective communications amongst different agencies involved in acquisitions.

With a view to offer comparatively stabilised technologies to the defence forces and let the commanders ascertain their suitability in operational environment, the Advanced Concept Technology Demonstration (ACTD) was introduced in 1994. It provides close interaction between the military and the industry regarding the equipment that can be made available in the specified timeframe, with the technologies mastered. As a country which rarely imports any military hardware but develops

its complete requirement indigenously, the Russian Federation follows a unique model. The Military Scientific Committee of the Armed Forces is responsible for making recommendations for the development of armaments and military equipment; helping in the development of the laboratory-and-experimental base; and supporting automation of the research process. Some of the other responsibilities include improvement of research planning and coordination of all research organisations and educational institutions engaged in research on defence subjects. The Russians follow a bottom-up approach, in which, initially only "baseline standards" are evolved for a large variety of military equipment. These standards are grouped together to form "basic profiles", which, in turn, help generate broad equipment contours with distinct characteristics. The profile of equipment, when translated into specific distinctive requirements, is called a "functional standard". A functional standard is, thus, a document that lays down the parameters for the development of equipment. In other words, baseline standards are like building blocks, which are common to a large array of military systems for the different Services. These are combined to get basic profiles of a range of equipment, and the profiles get converted into functional standards to define a military product. Commonality of technology over a wide array of equipment ensures a focussed approach and facilitates interoperability of components and sub-assemblies.

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The German system is characterised by the institutionalised integration of the German defence industry in the military's modernisation philosophy. The Defence Policy Guidelines issued on May 27, 2011, state: "The role of the defence industry is to serve the Bundeswehr. The German defence industry will continue to make a significant contribution to providing

modern and powerful equipment as well as to technological and logistic in-service support. Bundeswehr and the defence industry alike will have to react flexibly to changing levels of ambition." The Directorate General of Armaments is responsible for defence research and the planning of equipment and weapon systems, including their induction into the armed forces. It includes organisation and supervision of the armament sector [less Information Technology (IT)]; armaments planning and situations; international armaments cooperation; and research of defence technology.

The Federal Office of Defence Technology and Procurement is the largest technical authority in Germany. Its task is to ensure that the Bundeswehr's demands are met by supplying state-of-the-art technology and modern equipment economically. It has the central responsibility for the management of all non-IT armament projects. The Modernisation Directorate provides active support for all modernisation projects, extensive provision of innovative, effective and secure information technology, direct management of private-public partnerships as well as the advancement of cooperation with trade and industry to improve economic efficiency and effectiveness of the Bundeswehr.

France adopted a unique centralised system of defence acquisitions in 1961. The model has become a subject of frequent studies by other countries. The General Directorate for Armament *(Direction générale de l'armement)*, or DGA in short, is the government agency responsible for programme management, development and procurement of weapon systems for the French armed forces. Its primary responsibility is to oversee design, acquisition and evaluation of defence systems for the French armed forces. It monitors research activities and prepares programmes for the development of technologies, ensuring consistency with the requirement of the Services. In addition to managing research, development, production and testing of weapon systems, the DGA oversees the functioning of the government's industrial entities like shipyards and repair depots. It also undertakes testing and assessment

of equipment and military technologies through a vast network of test centres that function under it.

In the UK, the Joint Capabilities Board provides strategic leadership and direction. Its role is to decide what capabilities the forces need and work alongside the supplier and the Defence Equipment and Support Organisation (DE&S) to deliver the required equipment or systems. The DE&S was created in April 2007 by merging the Defence Procurement Agency and the Defence Logistics Organisation. It is responsible for delivering the 10-year equipment-and-support plan, managing resources to meet the needs of the sponsor and the military frontline users.

The DE&S meets the needs of the sponsor by analysing the stated performance requirements, availability of matching market capability and degree of maturity of related technology. Solutions are presented with a clear understanding of financial and commercial risks. The DE&S manages delivery of these solutions by planning and managing projects, services and assets to ensure that equipment and support is delivered and sustained through life. This includes working with frontline users and sponsors to shape the concept of use, forward plans and deployment options for equipment and support. As seen above, all nations appreciate the fact that acquisition of defence systems is intrinsically interlinked with the development of indigenous defence industry. That is the reason why they have created a single authority to oversee the complete gamut of related activities. As management of defence acquisitions and promotion of indigenous defence industrial capability are highly specialised functions, specially selected and well-trained officers are assigned these functions. A Defence Acquisition University has been established in the US for training the acquisition staff.

India Needs an Integrated Approach

Planning and execution are two distinct facets of an acquisition system. They demand dissimilar but specialised treatment. Planning functions

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can be carried out only by the professionals who possess a deep understanding of the defence imperatives and their impact on national security matters. In India, the planning process commences after the issuance of the Defence Planning Guidelines by the government. Thereafter, a Defence Capability Plan is evolved. It spells out capabilities required to fulfill the missions in different time periods as envisaged in the guidelines. Gaps existing in the capabilities are identified and a LTIPP is prepared. It lists all the defence systems needed by the Services, duly prioritised. India should constitute a multi-disciplinary Defence Perspective Planning Council (DPPC). It should function under the Defence Minister and include all top functionaries of the Services, bureaucracy and DRDO. It should be a broad based body. Representatives of the Foreign Ministry, the Home Ministry and the National Security Adviser should be invited on an as required basis. A number of sub-committees should assist the DPPC by studying and analysing specific issues. Such focussed treatment will improve the quality of deliberations. The complete planning process must be carried out as an integrated exercise.

Thereafter, duly approved perspective plans should be handed over to the executing agency to acquire the systems in the required timeframe. Needless to say, such functions can be carried out only by the professionals who are fully conversant with modern technologies and are aware of the latest management techniques to administer multifaceted and multi-agency programmes. On the lines of the Atomic Energy Commission and the Space Commission, India should

establish a duly empowered Defence and Aerospace Commission (referred to as the commission hereafter) to carry out all executive functions to implement perspective plans approved by the DPPC. It should be the nodal agency to oversee the complete defence acquisition process and the development of the indigenous defence industry. The primary responsibility of the commission should be to ensure that all approved equipment proposals are implemented within the specified timelines, satisfying all performance parameters and obtaining best value-for-money for the country. At the same time, it should promote development of the indigenous defence industry and facilitate export of defence goods. In other words, it should handle all activities pertaining to armament production, acquisition and export. However, technical evaluation and field trials should continue to be held under the aegis of the respective SHQ as hithertofore.

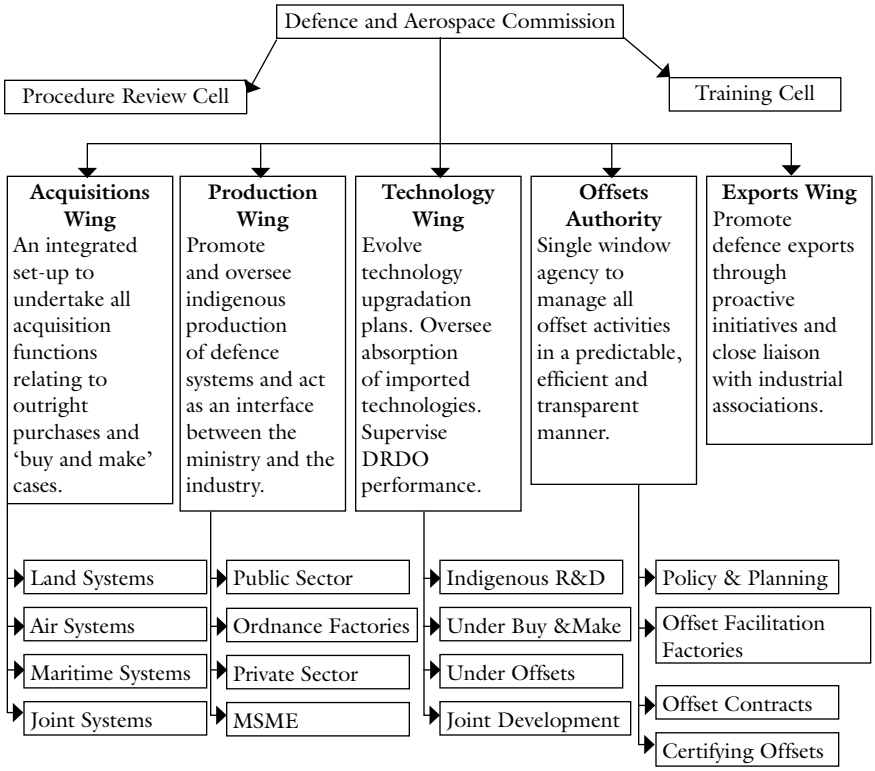
Various alternatives to acquire the necessary equipment in the specified timeframe will have to be studied to identify the most suitable and cost-effective route—outright import or indigenous development or a combination of the two.

To start with, the commission will have to convert capability requirements into performance parameters of equipment sought by the Services. Thereafter, a detailed scan of technology available in India and abroad will be required to translate performance parameters into viable and verifiable qualitative requirements. Subsequently, various alternatives to acquire the necessary equipment in the specified timeframe will have to be studied to identify the most suitable and cost-effective route—outright import or indigenous development or a combination of the two. Factors like quantity, economic viability, urgency, criticality, indigenous capability and acceptable timelines will be the key deciding factors.

The Chairman of the commission should be a distinguished personality, handpicked by the government for his well-demonstrated competence to synergise, harmonise and administer complex programmes involving multiple agencies. He should be given the rank of Minister of State and made answerable to the Defence Minister. He needs status and autonomy to work independently without any extraneous pressures. The commission should have five wings and two cells. The Acquisition Wing should undertake all functions relating to outright purchases and finalisation of cases wherein indigenous manufacture under licence is planned. Like the current set-up, it should continue to be an integrated set-up to include officials from the Department of Defence, the Finance Division and the Services. It should have four divisions to handle land systems, air systems, maritime systems and joint systems (systems required by more than one Service) (Fig 2).

The primary responsibility of the Production Wing should be to act as a facilitator and promote indigenous defence industry. It should have the powers to nominate the Indian recipient of technology in all cases that involve indigenous manufacture of goods under the 'buy and make' category. For that, the wing should maintain a data bank of proficient Indian producers with their respective domain competence. Acting as an interface between the government and the industrial associations, it should provide guidance to promising entrepreneurs. The Production Wing should have four divisions under it to deal with the Defence Public Sector Undertakings (DPSUs); Ordnance Factories (OFs); the private sector; and Micro, Small and Medium Enterprises (MSME) respectively. The importance of MSME in the defence sector is well recognised as they operate in niche segments and spearhead technological advancement. As they lack the necessary resources to be able to compete with bigger players, they need to be given special attention to thrive and deliver.

Fig 2: Suggested Structure of Defence and Aerospace Commission



As the defence industry is highly technology intensive, self-reliance cannot be achieved without regular development/infusion of technology. The Technology Wing should be tasked with the responsibility of evolving a comprehensive technology upgradation plan. It should be headed by an eminent scientist. To start with, critical technologies that India must master should be identified. Such technologies must fill critical gaps in indigenous knowledge and help accelerate the process of achieving self-reliance. Thereafter, the route and methodology to be adopted should be determined with well-delineated phases. In addition to supervising the functioning of DRDO, the Technology Wing should have four divisions under it. The first division should promote and oversee indigenous

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development of technology. The second and third divisions should ensure proper absorption of technology under the 'buy and make' procedure and offsets respectively. The fourth division should handle all cases where defence systems are being developed as joint projects with other nations.

The Offset Authority should be an independent and empowered authority with decision-making powers for efficient management of the complete gamut of offset related activities in a predictable, efficient and transparent manner. In other words, it should act as a single window for approving, validating, discharging and measuring offset programmes. In addition to approving draft offset contracts, it should provide guidance to all offset players in an open, fair and transparent manner. Furthermore, it should oversee successful implementation of all offset programmes through timely intervention to resolve contentious issues that impede progress. In addition to defraying the cost of production, export of defence systems helps in strengthening bonds with friendly nations. India has been neglecting this aspect so far. As the quantities required by the Indian armed forces cannot provide the necessary economies of scale, development of a robust and vibrant export market is essential. A separate wing is proposed to be set up under the commission to promote exports.

Conclusion

Despite periodic reviews of the procurement procedure and repeated reiteration of the objectives, self-reliance will remain a pipe dream unless bold and ingenious decisions are taken to correct the existing deficiencies.

The government must muster enough courage to undertake the necessary reforms to put a derailed and inefficient system back on track. Delay or wavering can cause irreparable damage to national security imperatives. Requirement of inventive policy initiatives and concrete action plans can never be fulfilled by resorting to semantics and rhetoric. The high costs and complexities of modern-day warfare ordnance have forced major arms manufacturers to spread their various manufacturing, commercial and management functions over a number of sites in different countries. They follow the emerging and evolutionary concept of 'global factory'. Given its favourable geo-political position and technical manpower, India must strive to become a global manufacturing hub for defence equipment by establishing itself as a vital constituent of the arms 'global factory' network.

No country can achieve long-term national security unless it is supported by a well-developed, dynamic and responsive defence industry. In addition to economic factors, the defence industry is generally considered to be an instrument of national sovereignty and pride. Moreover, a vibrant and thriving defence industry acts as a catalyst for the upgradation of technologies and skills in the Indian engineering, manufacturing and production sectors. The Revolution in Military Affairs (RMA) precludes segregated Service-wise operations. As a matter of fact, it presupposes total integration of all governmental agencies. As defence production and acquisition are multifaceted processes involving a large number of disciplines, the need for an overarching authority to administer, coordinate, oversee, direct and control multifarious activities is an inescapable prerequisite. The suggested Defence and Aerospace Commission should be an integrated agency, tasked to oversee all acquisition functions and build a modern defence industrial base to reduce dependence on foreign equipment and promote defence exports. India cannot afford to neglect this critical requirement any longer.