



India's Defence Industry Base

During the British period, ordnance factories were established to do some military related work. To manufacture guns and ammunition, the first ordnance factory was set up at Cossipore in 1801. In 1942, the Council of Scientific and Industrial Research was set as an autonomous body. In 1947, some technical development establishments came up. Some of these technical development establishments became laboratories of Defence Research and Development Organisation (DRDO) later. Before 1950, India had only 19 ordnance factories. At present, the Indian DIB refers to 39 Ordnance Factories geographically spread in 24 different Indian locations, eight public sector defence undertakings and increasing number of large, medium, small and micro undertakings from the private sector. Also, more than 50 defence laboratories are considered part of the DIB. The Indian government adopted a policy of permitting 100 per cent Indian private sector participation and 26 per cent Foreign Direct Investment. As of May 7, 2012, 181 Industrial Licenses / Letters of Intent were given to the private sector companies to manufacture defence items. An in-depth analysis of the evolution and the way forward for India's DIB.

Can a nation aspiring to be a great power ignore its defence industrial base? Definitely not. Defence Industrial Base (DIB) is necessary for long-term strategic planning of a country. All the super powers or great powers developed DIBs for strategic reasons. Though all the aspects of power constitute a great power, the military power is the key to a nation's rise to great or super power status. Of all the military powers, the US has the most robust and vibrant DIB. In the US, DIB often is negatively referred to as Military-Industrial Complex. This situation arises when DIB replaces threat perception for the demand of arms. For sure, any aspiring great power will have to escape this trap.



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The Indian government adopted a policy of permitting 100 per cent Indian private sector participation and 26 per cent Foreign Direct Investment. As of May 7, 2012, 181 Industrial Licenses / Letters of Intent were given to the private sector companies to manufacture defence items. The Indian government has been proclaiming: "The Indian Defence Industry in the private sector is now gradually assuming the role of system integrator and manufacturer of complete defence equipment and systems. This is a major shift in the role of private sector in India from its earlier supporting role to the public sector supplying raw materials and components, sub-systems etc". The government is encouraging the private sector to enter into the joint ventures to get technology and directly get into making of weapons



What is the situation in India? For the country's defence, the need for a DIB was felt by the strategic leaders of the country for a long period. In 1946, K M Panikar wrote, "No argument is required to prove that for many decades to come India will not be in a position to defend herself against a military Power organised on modern lines. Her national military strength has to be built-up slowly and with infinite patience, by careful organisation and long-sighted policy. It must derive from the latest scientific industry; and it must develop in harmony with the defence programmes of other Powers concerned in the security of the whole area of the Indian Ocean."

One of the defence ministers of the country claimed that the Indian defence industry has a history of more than 200 years. Actually, during the British period, ordnance factories were established to do some military related work. To manufacture guns and ammunition, the first Ordnance factory was set up at Cossipore in 1801. Directorate of Technical Development also played an active role in technological activities of the British Raj. Some telecommunication related activities were also undertaken. However, all the defence-related technological activities were very rudimentary in nature. The task of the post-independent India was to salvage the situation created by the British colonial masters.

Role of the public sector

Before independence efforts to begin the scientific industrial base and engineering and industrial infrastructure were actively discouraged by Britishers, though somehow the idea of Bureau of Scientific and Industrial Research came up. In 1942, the Council of Scientific and Industrial Research was set up as an autonomous body. Even this body had hardly any mandate to work on advanced defence science. In the post-Second World War period, in 1947, some technical development establishments came up. Some of these technical development establishments became laboratories of Defence Research and Development Organisation (DRDO) later. Before 1950, India had only 19 ordnance factories.

Nehru too realised the need for developing a DIB. His emphasis on industrial development, especially in heavy industry and self-sufficiency in defence may be seen as a move towards that direction. The first industrial policy of the country set the parameters for defence industry. As India was a developing country, obviously, it had to face many obstacles toward its indigenous DIB. The leading strategic analyst of India, Late Mr K Subrahmanyam explained the delay when he noted, "To develop a weapons system and deploy it is an eight-to-ten-year operation, even for an advanced industrial country. For developing countries such as ours, the time frame is even longer. Further, the weapons systems to be developed have to be effective against the systems which the potential adversaries can develop or procure." The DRDO played an important role in helping DIB develop in India. The Planning Commission of India became an important tool towards building the DIB.

At present, the India DIB refers to 39 Ordnance Factories geographically spread in 24 different Indian locations, eight public sector defence undertakings and increasing number of large, medium, small and micro undertakings from the private sector. Also, more than 50 defence laboratories are considered part of the DIB. In the future, a few more ordnance factories would join the Indian DIB.

The most important need for the Indian DIB is in strategic weapons. Nuclear weapons, ballistic missiles, cruise missiles and some specified categories of unmanned vehicles fall under the prohibition or control category. Even if some countries have liberalised their export control policy for defence cooperation, curbs continue on ballistic missiles technology transfers. The same control is also operational for the supply of any equipment and technology which may contribute to Indian nuclear weapons. The Indian DIB has demonstrated the trust reposed in it. Not only nuclear weapons but also Prithvis and Agnis have been produced by the Indian DIB to demonstrate its capability. The latest test of Agni-5 further

established the significance and credibility of Indian DIB in the strategic weapons.

Mr A K Antony, the current Defence Minister, stated: "Our aim is to have a strong defence industrial base in India, because a country like India cannot indefinitely depend on foreign suppliers for majority of our equipment. At the moment around 60 per cent of the equipment are imported, we have to reverse this trend. So we will continue to support the PSUs, but at the same time PSUs alone will not be able to meet the requirements of the Armed Forces." The increasing role of the private sector in defence production is a major issue of the India defence policy

India is on the way to modernise its armed forces. For the modernisation, it is looking for modern arms and equipment. Currently, India imports about 60 per cent of its arms and other equipment. This heavy reliance on outside has been disturbing both the policy making and the strategic communities. The vulnerability on outside suppliers has been an issue of security studies for a longer period. At the time of crisis, the suppliers may tend to add conditions to the original contract. The issue may be settled later, but the country will be adversely affected at the critical period. If it is war, it may fear losing it.

Besides, on many occasions, a supplier country creates problems for a recipient country when it refuses to supply spare parts. This refusal may come from the company and the government. In a country like the US, a number of forces determine a policy outcome. At times, these forces representing multiple interests may scuttle a particular country's supply line. The opposition could be on many grounds such as human rights and regional stability. Of course, some elements, funded by an adversary country, may also lobby against the supply of crucial spare parts. Admittedly, some trusted countries may not create such problems. Even these countries have been found raising the price tag in a monopolistic situation.

Related is the issue of the foreign exchange drain. If a country like India

spends so much money to buy foreign equipment and weapons, it may affect its modernisation plan. Should it mean that the country should solely rely on indigenous DIB? Though India has a policy of self-reliance and self-sufficiency in defence production, it may have to make a judicious mix of indigenous production and outside procurement. Certainly, the maximum indigenisation is the real answer. In fact, Mr A K Antony, the current Defence Minister, stated: "Our aim is to have a strong defence industrial base in India, because a country like India cannot indefinitely depend on foreign suppliers for majority of our equipment. At the moment around 60 per cent of the equipment are imported, we have to reverse this trend. So we will continue to support the PSUs, but at the same time PSUs alone will not be able to meet the requirements of the Armed Forces. So now we are formulating a new policy."

Private sector participation

In fact, the increasing role of the private sector in defence production is a major issue of the India defence policy. The Indian DIB will have public sector and private sector players both. Pranab Mukherjee as the defence minister remarked: "Going by the ethos of that era, the Government had placed production of Defence items in the Reserve List making it mandatory for production to be taken up only by the public sector. There has been a very significant expansion of public sector in Defence Production since the 1960s." Immediately after he assured, "In the expansion of facilities for Defence Production under the public sector, ample opportunities have also been provided to the private sector in supply of various raw materials, components and sub-assemblies as input material for production in the Ordnance Factories and Defence PSUs. Behind this effort of expanding Defence Production was the need to attain high degree of self-reliance in defence preparedness."

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Intent were given to the private sector companies to manufacture defence items. The Indian government has been proclaiming: "The Indian Defence Industry in the private sector is now gradually assuming the role of system integrator and manufacturer of complete defence equipment and systems. This is a major shift in the role of private sector in India from its earlier supporting role to the public sector by supplying raw materials and components, sub-systems etc." The government is encouraging the private sector to enter into the joint ventures to get technology and directly get into making of weapons.

One question that emerges: Is government encouraging competition between the private sector and the public sector? In certain sectors, competition between two sectors is inevitable; however, the government seems to push the complementarity between two. Both are encouraged to develop their areas of specialisation. Mr A K Antony remarked: "Earlier we took a decision (that) hereafter no more nominations to the shipyards, on nomination basis. Both public sector shipyards will have to compete with the Indian private shipyards to get projects for the Indian Navy. So all the Indian Navy's procurements in future will be from 'Buy Indian, Make Indian.' ... So they will have to compete ... So 'Buy Indian and Make Indian' is going to be the major component of our procurement policy. That will help us to have a strong defence industrial base in India".

Technically skilled people are required for advanced technology intensive industry. The need of this workforce is felt more in the Research and Development (R&D). The DRDO, the main institution for the task has been complaining of human resources crunch for long. As research in critical areas is going to remain with the government organisation and its low pay structure, the country will continue to face this problem. Actually, a public-private partnership in this area would significantly enrich Indian DIB.

Reliability of the supply of major systems is yet another issue. This fact has been highlighted not only by armed forces but also by the Indian

defence minister. The moment the Indian industry does not deliver on time, the government will have to look towards outside suppliers to meet country's security requirements in the fast technologically induced security environment. This may defeat the entire plan to rely 70 per cent of defence items on indigenous defence industry by 2015.

India is expected to spend US\$ 80 billion on Capital expenditure by 2015. The Indian government is also encouraging other measures such as export and technology spin-off to boost DIB of the country. In 1998, the DefExpo was conceptualised to advance defence exports from India and display the capabilities of Indian Defence R&D and production. In recent years, though the government has been encouraging the private sector, yet, it has been giving financial support for the modernisation plans of Defence PSUs and Ordnance Factories. Offsets are expected to bring technology to Indian defence industry.

Over the years, DIB boasts of product design, configuration and customisation with creativity, assured quality and value addition etc. It is expected to emerge as 'fast developing into a manufacturing hub.' Indian DIB has certainly done commendable work in armaments and munitions, state-of-the-art equipment and support systems in telecommunications and surveillance. In other areas, too, it has contributed immensely. These are the Light Combat Aircraft, transport aircraft, helicopters, including Advanced Light Helicopter, submarines, frigates, destroyers, small arms and ammunition, armoured and transport vehicles, troop comfort items, opto-electronics and special aluminium alloys, engines, avionics and system equipment etc.

The Present Scientific Advisor to the Defence Minister said that the future "goals would focus on Space and Cyber Security, Hypersonic Vehicles, Directed Energy Weapons and Smart Materials, Composites and MEMS (Micro-Electromechanical Systems)-based Sensors." For a robust DIB, the country will have to develop economically as it is doing now. It may have to overcome obstacles which are many today. **DSA**