

Defence Public Sector Undertakings and Exports

An Assessment

*S. Samuel C. Rajiv**

This article examines issues related to exports by the nine major defence public sector undertakings (DPSUs) under the broad categories of ships, aircrafts and sensors. It then analyses three key aspects related to research and development (R&D) expenditure, marketing partnerships and lines of credit (LoCs). Aspects relating to DPSU R&D expenditure are highlighted given that R&D plays a vital role in niche product development, which aids not only domestic procurement by the armed forces but also enhances export opportunities. The DPSUs have sought to enhance their exports through outreach activities, marketing representatives and establishment of overseas offices. The LoCs have also significantly facilitated the DPSU exports to friendly foreign countries. The article highlights some of the challenges that the DPSUs have to overcome in order to expand their export profile, including those related to competitive export markets, defence indigenisation and reducing import dependence. With the government aiming for a defence exports target of Rs 50,000 crores by 2028–29, the ability of the DPSUs to contribute to the exports pie will, no doubt, continue to be in focus.

Keywords: *Defence Public Sector Undertakings, Exports, Atmanirbharta, Self-reliance*

* Dr S. Samuel C. Rajiv is a Research Fellow at the Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA), New Delhi.

INTRODUCTION

Defence exports by India have witnessed a significant surge in recent times. In the period 2014–24, India's defence exports were worth nearly Rs 85,000 crores. Exports surged from Rs 996 crores in 2014–15 to Rs 21,083 crore in 2023–24, an increase of over 2,000 per cent. The total number of export authorisations given to defence exporters in 2023–24 stood at 1,507, as against 1,414 in 2022–23.¹ As per the Ministry of Defence (MoD), the private sector contributed 60 per cent of the total exports in 2023–24, while the public sector accounted for the rest.²

The nine major defence public sector undertakings (DPSUs) and the new DPSUs—the seven corporatised erstwhile Ordnance Factory Board (OFB) units—accounted for Rs 8,433 crores of exports in 2023–24, while the private sector defence industry accounted for Rs 12,650 crores. In 2014–15, the DPSU exports stood at Rs 970 crores, while exports by the OFB were Rs 26.64 crores. The MoD, in 2023, noted that India was exporting defence products to over 85 countries and that over 100 firms were involved in defence exports.³

This article examines issues related to exports by the nine major DPSUs under the broad categories of ships, aircrafts and sensors. The DPSUs which are being examined in this article include: Bharat Dynamics Limited (BDL); Bharat Electronics Limited (BEL); Bharat Earth Movers Limited (BEMEL); Hindustan Aeronautics Limited (HAL); Garden Reach Shipbuilders and Engineers (GRSE); Goa Shipyard Limited (GSL); Hindustan Shipyard Limited (HSL); Mazagon Dock Shipbuilders Limited (MDL); and Mishra Dhatu Nigam (MIDHANI). These nine enterprises account for the bulk of India's defence exports by the defence public sector companies.⁴

The following sections will highlight some key aspects associated with DPSU exports, related to research and development (R&D) expenditure, marketing partnerships and lines of credit (LoCs). The R&D plays a vital role in niche product development, which aids domestic procurement by the armed forces and enhances export opportunities. The article seeks to place in perspective R&D expenditure of the major DPSUs in comparison with select global original equipment manufacturers (OEMs) which have significant export sales. The DPSUs have also sought to enhance their exports through outreach activities and establishment of overseas offices. The DPSU exports have significantly been aided by LOCs to friendly foreign countries. To begin with, key statistics will place the DPSU exports in perspective.

DPSU EXPORTS: KEY STATISTICS

Some of the significant export items by DPSUs include Offshore Patrol Vessels (OPV) and helicopters to countries such as Nepal, Afghanistan, Mauritius, the Seychelles, Namibia, Ecuador and Suriname. During the 10-year period from 2013 to 2023, the value of exports (both defence and civil) executed by the nine DPSUs was Rs 12119.84 crores (see Table 1). The HAL accounted for nearly 29 per cent of all exports by DPSUs, followed by BEL at 27 per cent, BEML at 23.4 per cent and GSL at nearly 13 per cent (Figure 1).

Table 1 DPSU Exports (Defence and Civil) 2013–23 (in crores)

DPSU	BDL	BEL	BEML	HAL	GRSE	GSL	HSL	MDL	MIDHANI	Total
Value (Rs crore)	487.37	3266.3	2837.64	3483	331.15	1539.48	3.27	9.1	162.52	12119.84

Note: The data for certain DPSUs, like BEML and MIDHANI, include both defence and non-defence exports. The MIDHANI verticals, for instance, encompass space and the energy sectors, apart from defence. During 2018–23, the non-defence portion of BEL’s revenues was about 15–20 per cent of the company’s total turnover. In 2022–23, defence contributed 87 per cent to BEL’s total revenues.

Source: DPSU annual reports, Standing Committee on Defence reports; Comptroller and Auditor General of India’s performance and audit reports (various years).

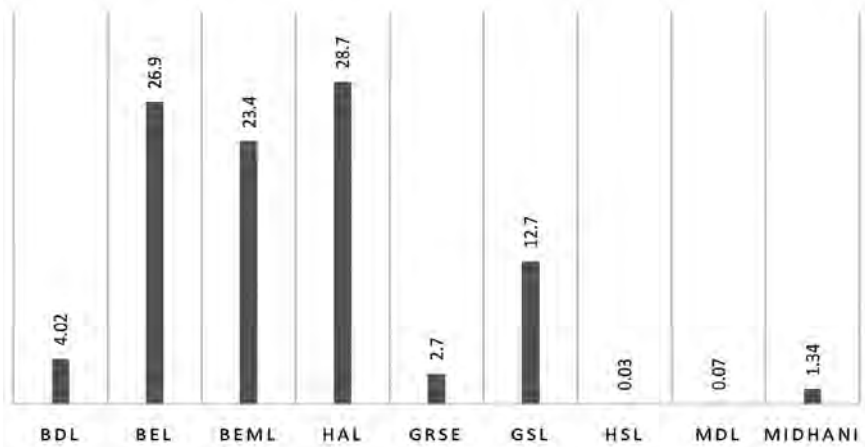


Figure 1 DPSU Exports (Defence and Civil) 2013–23: Percentage Share

Source: DPSU Annual Reports, Various Years.

The following sub-sections highlight key DPSU exports, under the broad categories of ships, aircrafts and sensors.

Ships

The export of ships has been one of the major components of India's defence exports story, with DPSU shipyards at the forefront of this effort. India has provided Fast Patrol Vessels (FPVs) to Myanmar; OPVs to Sri Lanka and Mauritius; and patrol crafts to other countries, such as Mozambique and the Maldives. As indicated in Figure 1, more than 15 per cent of all DPSU exports during 2013–23 have been by the shipyards, namely GRSE, GSL, HSL and MDL, with GRSE and GSL accounting for the overwhelming majority of exports.

The GRSE was the first shipyard to secure an export order for an OPV worth US\$ 58.5 million from Mauritius. The keel of the ship was laid in April 2012, while the ship was launched in August 2013 and delivered in December 2014. The *CGS Barracuda* was subsequently commissioned on 12 March 2015, coinciding with the National Day of Mauritius, in the presence of Indian Prime Minister Narendra Modi and Mauritian Prime Minister Anerood Jugnauth.

In 2022–23, exports at about Rs 60 crores were 2.3 per cent of the total turnover of GRSE.⁵ This included about Rs 1.3 crore from export of Bailey bridges, while shipbuilding accounted for the rest of the exports. In 2022–23, GRSE was executing export orders for six patrol boats for Bangladesh, maintenance support for an FPV to the Seychelles and seven pre-fabricated portable steel bridges worth Rs 9 crores to Bangladesh through defence LOC.⁶ In July 2021, GRSE secured an export order worth US\$ 1.82 million (Rs 13.66 crores) from the fisheries department of Bangladesh for the supply of six patrol boats. It is significant to note that the order was won after competitive bidding with companies from Singapore, Finland, South Korea, among others, in the field.⁷

While DPSU shipyards have actively participated in global tenders, they have not been able to secure some orders. The GRSE, for instance, was shortlisted for delivery of two light frigates by the Philippines Navy. It emerged as the lowest calculated bidder in the contract worth over US\$ 300 million in May 2016. A Philippines delegation also visited GRSE in April–May 2016 for post-qualification assessment and was reportedly fully satisfied with the infrastructure and shipbuilding capabilities. However, in October 2016, the Philippines gave the contract to Hyundai Heavy Industries (HHI).⁸

The GRSE chairman noted that the ‘Net Financial Contracting Capacity (NFCC) as per formula specified in procurement regulation of government became an impediment in bagging the contract’.⁹ The GRSE was ostensibly not fully compliant with working capital norms specified in the Philippines procurement rules. Daewoo Shipbuilding and Marine Engineering Company from South Korea (now Hanhwa Ocean Company Limited) and Navantia of Spain were the other contenders, apart from HHI. The GRSE also responded to a request for information (RFI) for an OPV to Malta in 2016–17, but the Euro 48.5 million contract was secured by an Italian firm in October 2018.¹⁰

The GRSE and the Transport and Harbours Department of the Government of Guyana signed a contract in January 2021 for an ocean-going cargo and ferry vessel. The GRSE was the lowest bidder and secured the contract after competitive bidding. The *MV Ma Lisha* was delivered ahead of schedule and reached the Guyanese port of Georgetown in April 2023 and was commissioned in the presence of Dr Mohammad Irfan Ali, President of the Cooperative Republic of Guyana, and External Affairs Minister S. Jaishankar. The ship was built under a US\$ 12.73 million LoC from the Government of India to Guyana.¹¹

The DPSU shipyards, such as GRSE and GSL, have exported FPVs to the Seychelles (2005, 2014 and 2021), Mauritius (2016, 2017) and the Maldives (2006, 2019). The Seychelles FPV, built by GRSE, cost Rs 100 crores, the contract for which was signed on 3 February 2021. The FPV, *SCG PS Zoroaster*, was ‘gifted’ to Seychelles as part of the Indian grant assistance programme to ‘meet its urgent requirement of strengthening its maritime surveillance capabilities’. The government noted that the move reinforced India’s ‘role as a trusted and preferred security partner of Seychelles’.¹² The ship was commissioned by PM Modi in April 2021 in a virtual event.

The GRSE has also bagged export orders for maintenance support and refit for the vessels it has exported to other countries, such as the Seychelles and Mauritius. Ship repair is an area that the shipyard is keen to focus on going forward, so as to expand its export revenue stream. As part of its civil exports, GRSE has also supplied steel bridges to countries, such as Bhutan, Myanmar and Nepal, after competitive bidding.

The recent order wins of GRSE include the June 2024 contract with the Bangladesh Inland Waterways Transport Authority (BIWTA), worth US\$ 16.6 million, to build a dredger.¹³ It secured another contract with a German shipping company for the construction of four multipurpose cargo vessels worth US\$ 54 million. The German company in September 2024 exercised the option of procuring four more multi-purpose vessels from GRSE for

US\$ 54 million, for a total order value of US\$ 108 million. The contract for the additional ships will be signed before March 2025.¹⁴ The GRSE is also executing an export order for six patrol boats for the Bangladesh fisheries department. In addition, GRSE is seeking to expand its export footprint by making a foray into building of commercial ships.

Another defence shipyard, GSL, has delivered export orders during 2015–18, including OPVs for the Sri Lankan Navy; water jet fast attack crafts and fast interceptor boats for Mauritius; and damage control simulator for the Myanmar Navy. The two OPVs to Sri Lankan Navy amounted to Rs 869.26 crores, with the export order being successfully executed in 2017–18. These are the largest ships in the Sri Lankan Navy and the biggest warships to be exported from India. During 2017–18, the contribution of exports to GSL's value of production was nearly 45 per cent.¹⁵

The GSL also signed a contract for a 4,000 tonne floating dry dock for the Sri Lankan Navy on 22 March 2022. Another contract was signed with the Myanmar Naval Dockyard in October 2021 relating to the commissioning of a propulsion plant of 81 metre (m) OPV of Myanmar Navy.¹⁶ The GSL was in the running for the building of a landing ship tank (LST), training ship and ship design and construction centre under an LoC for the Nigerian Navy. In this regard, the Nigerian Chief of the Naval Staff visited GSL in July 2018.¹⁷ However, in July 2019, the Nigerian Navy signed an agreement with the Damen Schelde Naval Shipbuilding (DSNS) for an LST, which was launched from the Damen Shipyard in Sharjah, United Arab Emirates, in 2021.¹⁸ Apart from DSNS and GSL, a Turkish shipyard Anadolu Deniz was also in the fray for the LST contract.

In recent years, GSL not only exported fast interceptor boats but also a 50m FPV to Mauritius in September 2016. It participated, in consortium with a Brazilian shipyard, INACE, in the US\$ 1.6 billion corvette programme of Brazil, with its submission incorporating indigenous systems, such as Combat Management System (CMS) from BEL and Integrated Platform Management System (IPMS) from Larsen & Toubro (L&T).¹⁹ However, another consortium of ThyssenKrupp Marine Systems, Embraer Defense & Security and Atech was chosen to construct four new Tamandaré-class corvettes for the Brazilian Navy in April 2019.²⁰ Apart from GSL, the GRSE was also in the fray for this corvette programme, along with Elbit Systems Limited of Israel and SINERGY Group.²¹ Further, during the visit of a team from GSL to Vietnam in April 2018, interest was shown by the Vietnamese in OPVs and repair of ships.²² Additionally, the GSL imparted training to personnel of foreign navies, such as Nigeria and Sri Lanka.

As for MDL, its last major export orders were in the 2012–14 period, when it exported a Multipurpose Support Vessel (MSV) to a Mexican company. The vessel was built with design assistance by a Norwegian company.²³ The export value of the vessel was Rs 280 crores.²⁴ Previously, MDL exported commercial vessels, including cargo ships, to Singapore and the United Kingdom (UK); water carriers to Iran; barges to the Middle East countries; police boats to Mozambique; and sand dredger to France, apart from an MSV to Bahamas.²⁵ In fact, the company has exported nearly 250 vessels since 1960. In 2022–23, however, revenue from export of goods/services was only Rs 573 lakhs, which was just 0.07 per cent of the total revenue from operations.²⁶

The HSL, meanwhile, has exported goods/services worth only Rs 3.27 crores during 2013–22, as seen in Table 1. The HSL's legacy liabilities have prevented it thus far from participating in open and competitive tenders/contracts. It signed a memorandum of understanding (MoU) with GRSE in April 2021 to 'mutually extend the production base by tapping domestic/export market, both in defence and non-defence sectors. This includes both "platform level" and "product level" goods and services.'²⁷

The HSL was nominated by the MoD for the Fleet Support Ships (FSS) project. The MoD signed a contract with HSL in August 2023 for the acquisition of five FSS at an overall cost of Rs 19,000 crores. The induction of these ships is expected to boost the blue-water capabilities of the Indian Navy as they can help in replenishment of naval ships at sea.²⁸ The construction of the 44,000 tonne vessels began in April 2024. The HSL posted its highest ever pre-tax revenue of Rs 1,597 crores in 2023–24, nearly 45 per cent higher than its 2022–23 revenue of Rs 1,103 crores.²⁹

Aircrafts

India's aircraft exports primarily relate to various versions of the Dhruv helicopter to different countries, like Ecuador, the Maldives, Mauritius and Nepal; maritime patrol aircraft to Sri Lanka, the Seychelles and Namibia; light transport aircraft to Mauritius; and Cheetal helicopters to Afghanistan, among others. As shown in Figure 1, HAL accounted for nearly 29 per cent of DPSU defence exports during 2013–23. With an export footprint in more than 20 countries, covering South Asian Association for Regional Cooperation (SAARC), Southeast Asia, Indian Ocean Region, Africa and Latin America, the company's exports as a percentage of the total turnover during 2023–24 was around 1 per cent.³⁰

As per the Arms Transfers Database of Stockholm International Peace Research Institute (SIPRI), Indian aircraft and helicopter exports include: three Cheetal light combat helicopters to Afghanistan; six Dhruv helicopters to Ecuador; a Dhruv and a Dornier-288 (Do-228) maritime patrol aircraft to the Maldives; four Do-228 and one Dhruv to Mauritius; a maritime patrol aircraft and light transport aircraft to Myanmar; four Dhruv helicopters to Nepal; two Do-228 to Sri Lanka and the Seychelles; and Chetak light helicopter to Suriname.³¹ Apart from helicopters and patrol aircraft, HAL exports include engines, avionics and structural work packages to major aerospace majors, like Airbus, Boeing, Israel Aerospace Industries (IAI), Rolls Royce, RUAG, Turbomeca (Safran Helicopter Engines) and Safran Aircraft Engines.

The HAL supplies steel forgings to aviation major Boeing's 787 aircraft programme; main landing gear box assemblies to Boeing's 777 aircraft; Hawk structural assemblies, including nose wheel doors, to BAE Systems; aero structures, including passenger doors, for Airbus A320 programme; gun bay doors and wire harness to Boeing's F-18 fighter aircraft programme; indigenously designed and developed avionics (radar computers, mission computers, display processors) to Su-30 aircraft; rolled rings for Rolls Royce engine programme; among others. The HAL has carried out these exports, successfully meeting the stringent reliability, quality and delivery specifications of the aerospace majors. Some of these exports have been carried out as part of the various offset contracts secured by the company. The HAL has also carried out overhauls of aero engines for the Namibian Air Force and Mauritius Police Force.³²

In order to expand its global export footprint, HAL has been actively responding to the RFIs. India's light combat aircraft (LCA), Tejas, was shortlisted by the Royal Malaysian Air Force (RMAF). In August 2022, HAL even offered Malaysia a package deal, which included maintenance of RMAF's Su-30MKM aircraft, setting up of local maintenance, repair and overhaul facilities and opening an office in Kuala Lumpur.³³ The HAL had also signed an MoU with Metals and Minerals Trading Corporation of India as channelising partner for import of palm oil, for likely countertrade for sale of LCA Tejas to RMAF.³⁴ The RMAF, however, chose the Korean FA-50 aircraft in early 2023, in a deal valued at over US\$ 900 million for 18 aircraft.³⁵

In July 2020, the LCA was also offered as lead-in fighter trainer (LIFT) configuration to Australian Department of Defence. Currently, the Royal Australian Air Force (RAAF) uses the BAE Systems Hawk to train Australian

pilots, with engine upgrades to be incorporated by 2025.³⁶ This aircraft, however, is set to be replaced by 2031. The HAL had offered the LCA LIFT powered by F404 engine. The company, meanwhile, unveiled the Hindustan Lead-in Fighter Trainer (HLFT-42) aircraft at Aero India 2023. Analysts note that it is not clear if the HLFT-42 can be ready for demonstration purposes for the Australian requirement, with the RAAF set to decide on the aircraft by 2026–27.³⁷

The HAL offered Do-228 aircraft to the US Navy in July 2020, in response to their global RFI for multi-engine trainer aircraft programme. The company also received interest from the Philippines Coast Guard (PCG) for procurement of seven advanced light helicopters (ALHs) and eight Do-228 aircraft through Government of India LOC.³⁸ The HAL is up against the Airbus Panther AS565 for the PCG contract.³⁹ Reports note that the Philippines test pilots have flown the Dhruv in India and a series of discussions have been held by HAL with its counterparts.⁴⁰ A delegation led by Admiral Artemio Manalo Abu, Commandant, PCG, visited Goa in August 2023 and undertook a Customer Demonstration Flight (CDF) on the ALH Mk-III helicopter.⁴¹ The Indian Ambassador to the Philippines, Shambhu Kumaran, also met President Ferdinand R. Marcos, Jr, in November 2023. The president was cited as stating that India's offer of the Dhruv helicopters to the PCG will be 'a big contribution for PCG's maritime operations'.⁴²

Sensors

India's defence exports in this category primarily relate to radars, including artillery locating radars to Armenia; air search radars to Myanmar and Sri Lanka; and maritime patrol aircraft radars to the Seychelles. The BEL accounted for the second-largest percentage of DPSU exports during the period under review, 2013–23, at about 27 per cent (see Figure 1). The company has exported equipment like hull-mounted sonars (for Myanmar frigates), naval surveillance radars, hand-held radios, radar warning receivers, combat airborne surveillance systems, coastal surveillance systems, passive night sights, sub-systems of radars and electronic warfare systems, to many countries.

A significant portion of export of sub-systems and systems, like radar sub-assemblies, relates to offset orders for OEMs, like Thales, SAAB and Boeing. The BEL's offset order book was US\$ 13 million in 2012–13 and reached as high as US\$ 73.65 million in 2019–20. The DPSUs export order book was US\$ 94 million in 2012–13, which increased to US\$ 269 million during 2021–22 and stood at US\$ 295 million as on 1 April 2023.⁴³ In

2021–22, BEL received a big export order from Airbus Defence and Space (US) for the manufacture and supply of radar warning receiver and missile approach warning system under the C-295 aircraft programme worth US\$ 93.15 million.⁴⁴

An indigenously developed naval air surveillance radar, RAWL 02 Mk-IIA, was exported to Myanmar's frigates for the first time during 2015–16. Anti-submarine warfare hull-mounted sonars and air search radars have also been exported to equip Myanmar's frigates. Another significant export by BEL has been the Swathi artillery locating radars to Armenia, four of which have been exported at a cost of US\$ 40 million, as per media reports.⁴⁵ India, in April 2024, also decided to post a defence attaché (DA) to Armenia, along with 15 other new countries, to enhance defence engagements with these countries.

Meanwhile, BDL accounted for around 4 per cent of DPSU exports during 2013–23 (Figure 1). Significant exports by BDL in recent past include light-weight torpedoes to a friendly foreign country. A US\$ 21 million contract was signed in November 2021 for a countermeasure dispensing system (CMD5) with Airbus, Spain.⁴⁶ In December 2020, the government created a mechanism, headed by the defence minister and consisting of the external affairs minister and the national security adviser, to fast-track approvals for exports of weapons platforms, like the Akash surface-to-air missile (SAM), made by BDL.⁴⁷ The BDL's *Annual Report 2022–23* noted that the company received its highest-ever export order of US\$ 255.4 million for SAMs and US\$ 27 million for anti-tank guided missiles from friendly foreign countries.⁴⁸ As of 1 April 2023, the total export order book of BDL stood at Rs 2,586 crores.⁴⁹

KEY ISSUES

The Standing Committee on Defence (SCOD) and other experts have consistently flagged the need for the DPSUs to invest more in R&D. This will not only help develop niche products indigenously to cater to the requirements of the armed forces and reduce import burden, but also enhance the export potential of these equipment. According to Defence Secretary Giridhar Aramane, technology transfer and access to technology will help Indian public and private sector defence companies to export more.⁵⁰ The need for DPSUs to have greater focus on marketing of equipment/products has also been highlighted. Significant DPSU defence

and civil exports have also been facilitated by LoCs. Some key aspects related to DPSUs and R&D, DPSU marketing partnerships and LoCs and defence exports are examined next.

DPSUs and R&D

The DPSUs have, no doubt, been investing in R&D efforts. Most DPSUs have tie-ups with academic and research institutions, such as the Indian Institutes of Technology. The BEL has more than 300 collaborative R&D partners, including with more than 150 medium, small and micro enterprises (MSMEs).⁵¹ As of 2022–23, BEL, MIDHANI and BEML have been granted 46, five and 12 patents, respectively.⁵² Figures 2 and 3 show the R&D expenditures of DPSUs which accounted for majority of DPSU exports during 2018–23 and the R&D expenditure as a percentage of value of production/sales turnover, respectively. In 2022–23, BDL, BEL and HAL had R&D spend greater than 6 per cent of sales. The HAL’s R&D expenditure in 2022–23, at Rs 2,494 crores, was in fact close to 10 per cent of its turnover.

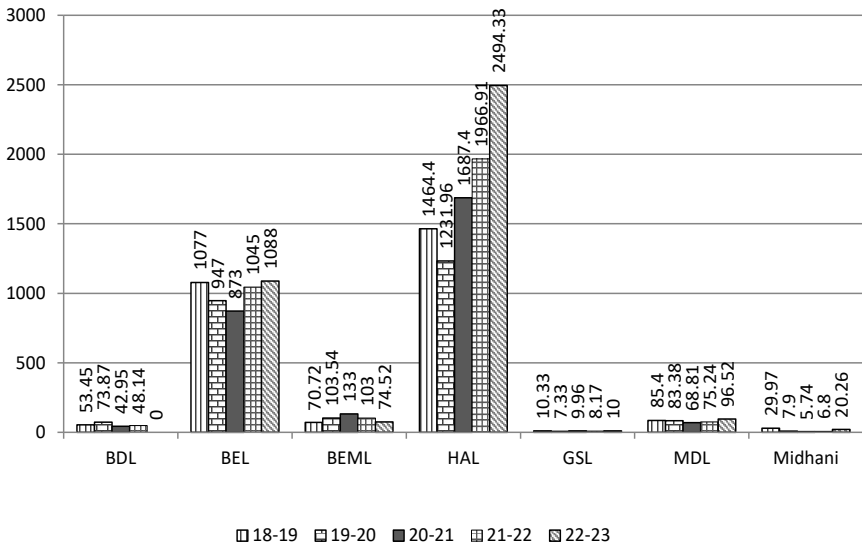


Figure 2 DPSU R&D Expenditure: 2018–23 (in crore)

Source: Annual reports, various years.

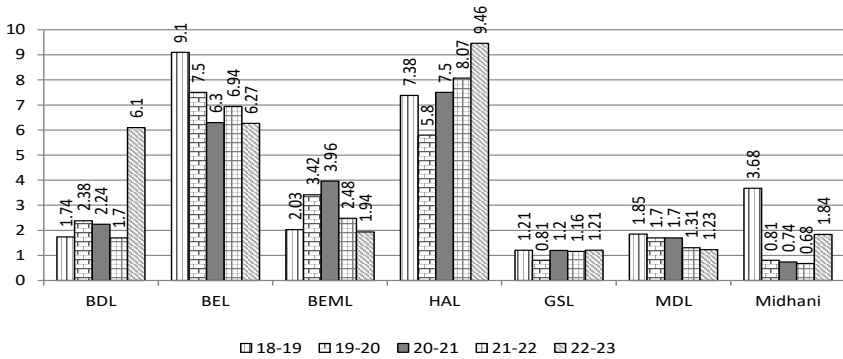


Figure 3 DPSU R&D Expenditure as Percentage of Value of Production/Sales Turnover: 2018–23

Source: Annual reports, various years.

It is pertinent to note that BEL and HAL are part of the SIPRI Top 100 defence companies in the world: HAL was at 41st position with sales of US\$ 3.46 billion, while BEL was at 63rd with sales of US\$ 1.9 billion.⁵³ For purpose of illustration, Figure 4 gives the R&D expenditure of Israeli OEMs, Elbit Systems and IAI, which are also a part of the SIPRI Top 100 list of companies. Elbit’s sales in 2022 amounted to US\$ 4.96 billion, making it the 24th biggest company in the world, and IAI was at the 35th position with sales of US\$ 4.1 billion. While the R&D expenditure of some of the major DPSUs are commensurate with global majors who have significant export sales, similar or even higher R&D expenditures by the other DPSUs will no doubt enable them to gain technological edge, aid indigenisation efforts as well as gain greater export market share.

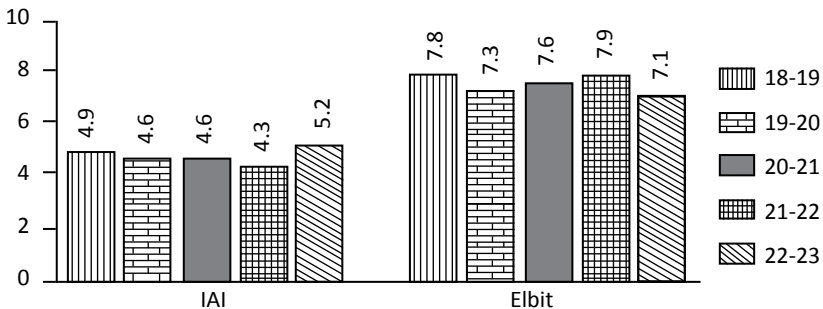


Figure 4 R&D Expenditure as Percentage of Total Sales: 2018–23 (IAI and Elbit)

Source: Elbit Systems, available at <https://elbitsystems.com/>, accessed on 20 May 2024; Israel Aircraft Industries, available at <https://www.iai.co.il/>, accessed on 20 May 2024.

The R&D expenditure of MIDHANI, as a percentage of its value of production in 2022–23, for instance, was only 1.8 per cent. Its annual report of 2021–22 notes that there were 14 R&D employees on its rolls. The MIDHANI is a niche manufacturer of products/equipment that involve critical material. Some of its exports, no doubt, relate to material or products that have been explicitly developed for specific export orders. Cobalt-free special steel, for instance, was developed for the first time and supplied against an export order during 2021–22.⁵⁴ The company, while affirming that it ‘highly’ prioritised the value and significance of R&D in driving the organisation’s growth and success,⁵⁵ launched a mission-driven initiative to motivate employees to file patents for their innovations. As a result, during 2022–23, 28 patents were filed, as against 11 in the previous year. Overall, 52 patents were filed by MIDHANI during 2013–23.⁵⁶ As on 31 March 2022, five patents had been granted.⁵⁷ Going forward, such focused efforts, along with enhanced R&D expenditures, will no doubt add to the quality of MIDHANI’s products and further aid their export potential.

The DPSUs are also actively taking steps to enhance their R&D footprint and have entered into strategic alliances with not just other DPSUs but also with private sector companies such as L&T and Mahindra Defence Systems Limited, apart from foreign OEMs. In April 2018, for instance, GRSE signed an MoU with M/s Elbit Systems, Israel, for indigenous development and supply of Unmanned Surface Vessels (USVs). In February 2020, GRSE signed a tripartite MoU with BEL for the ‘development and customization’ of Elbit’s USVs for the requirements of the Indian Navy.⁵⁸ During 2019–20, it also signed MoUs with M/s Kongsberg, Sweden, for manufacture and assembly of water jets used in the propulsion system of marine vessels and another MoU with M/s BERD, Portugal, for exploring design support to manufacture next-generation modular portable bridge solutions.⁵⁹ The GRSE signed an MoU with Rolls Royce in January 2023 to manufacture MTU S4000 marine diesel engines at its plant in Ranchi.⁶⁰ These engines, used in FPVs and fast attack crafts built by the GRSE, were being imported.

DPSUs and Strategic/Marketing Partnerships

The HAL tied up with the Israeli aerospace major, IAI, in 2004, to jointly market the ALH.⁶¹ The ALH Dhruv had Ecuador as its first export customer in 2008. Most of the Dhruv’s subsequent customers have been in India’s neighbourhood or extended neighbourhood. It is not clear, therefore, how effectively such strategic partnerships can be leveraged to penetrate the global

markets, especially for platforms like ALHs, which have critical imported components, such as avionics and airframe material, among others.

The BEL has been at the forefront of opening marketing offices abroad. A marketing office was established in Vietnam during 2017–18, while in the subsequent year, marketing offices were established in Muscat (Oman), Colombo (Sri Lanka) and Yangon (Myanmar). The BEL has additional marketing offices in New York and Singapore. Apart from marketing offices, BEL also has overseas representatives in 12 other locations.⁶² The DPSU shipyards, such as GRSE, have posted/hired marketing representatives in countries in Southeast Asia (the Philippines and Myanmar), apart from Bangladesh. Other DPSU shipyards, such as GSL, have appointed management representatives for promoting its product lines in foreign markets.

The BEL has also proposed strategic alliance with foreign OEMs ‘to address global markets by offering the best value proposition’.⁶³ The BEL’s marketing agreement with SAAB, dating July 2018, relates to the marketing of the L-Band 3D air surveillance radar, RAWL 03, co-developed with SAAB. The MoU with Israeli companies, like Controp and Meproflight, is for marketing of night vision and laser equipment; and co-production of laser range finders and day sights for small arms. The BEL has an MoU with Beretta, Italy, for supplying reflex sights and night vision devices for assault/sniper rifles. Raksha Mantri Rajnath Singh opened HAL’s regional office in Kuala Lumpur, Malaysia, in July 2023. These efforts will no doubt help the DPSUs exploit export opportunities as they expand their regional and global footprint.

In April 2024, India decided to post DAs to 16 new countries, including Armenia, the Philippines, Poland, Ethiopia, Ivory Coast, Mozambique, among others, in a move to strengthen and broaden its defence engagement and strategic footprint.⁶⁴ A key facet of the DA’s work profile in recent years has related to the promotion of exports of indigenous defence equipment. Indeed, since 2019–20, the DAs were provided financial support for undertaking outreach activities and market studies. During 2023–24, Rs 3.76 crores was allotted to the DAs posted in 64 countries for export promotion activities of indigenous defence products of both public and private sectors.⁶⁵

DPSUs and LoCs

Most of the major platform exports by DPSU shipyards have been as a result of Government of India extending LoCs. A number of countries like Bangladesh, Sri Lanka, Mauritius and Suriname, have used defence LoCs to

source Indian defence equipment. The GRSE, for instance, supplied steel bridges worth nearly Rs 9 crores to Bangladesh as part of defence LoC in 2022–23.⁶⁶ The GRSE's latest export order, meanwhile, relates to the construction of an ocean-going tug for Bangladesh worth Rs 176 crores, secured in July 2024. Reports note that this was the first major defence deal signed as part of the US\$ 500 million LoC that was operationalised in 2023.⁶⁷ The HAL's latest export order was related to the supply of two Do-228 aircraft to the Guyana Defence Forces, as part of a defence LoC, which were delivered in April 2024. The Guyanese president had visited HAL's Kanpur division in January 2023 and expressed a keen interest in the aircraft.⁶⁸

Since 2001 till 2023, the government has provided nearly US\$ 28 billion in LoCs to finance the purchase of equipment, or developmental works, for countries in the neighbourhood as well as in Africa. Out of this amount, about US\$ 1.7 billion is related to purchase of defence equipment, primarily naval ships and helicopters.⁶⁹ It is instructive to note the rising share of defence equipment in the pipeline LoCs. As of July 2024, around US\$ 730 million out of US\$ 3.56 billion pipeline LoCs (20 per cent) related to procurement of defence equipment from India by various countries, such as Angola, Armenia, Comoros, Madagascar, Sri Lanka, Uzbekistan and Vietnam.⁷⁰

The need to exploit emerging export opportunities in the defence and commercial shipbuilding space 'through competitive approach' is recognised by DPSU shipyards, such as GRSE.⁷¹ As noted earlier, some of the significant export orders of GRSE, such as the ocean-going ferry-cum-cargo vessel for Guyana and patrol boats for Bangladesh, were indeed secured after competitive bidding. Even as LoCs can continue to be leveraged to finance the export of defence equipment to friendly foreign countries, securing competitive orders will no doubt help expand the DPSU export footprint.

CHALLENGES

The article brings to attention the export profile of the DPSUs, as well as some key issues relating to R&D, marketing efforts and LoCs. Given that the defence exports focus of the government is a relatively recent phenomenon, meeting ambitious exports targets is indeed challenging. Even in February 2015, for instance, the government informed the Lok Sabha that while it has taken some steps to facilitate defence exports, there were no fixed targets for export of military stores to other countries.⁷² The export target of Rs 35,000 crores highlighted subsequently in MoD documents, like the Draft Defence Production Policy, 2018 and the Draft Defence Production

and Export Promotion Policy, 2020, is, therefore, significant as it shows a change in outlook and philosophy towards defence exports. It is pertinent to note that the defence sector itself was only opened to the private industry in 2001.

The DPSUs also face a highly competitive export market for defence products. They are no doubt actively participating in RFIs and requests for proposal (RFPs), as well as making use of LoCs. The MDL, for instance, as of December 2021, had responded to over 30 RFIs and RFPs, involving nearly 200 vessels.⁷³ The MDL, though, is cognizant of highly competitive markets, changing technology, stringent quality criteria, increased expectations of the customer and low pricing of the products from North-East Asian countries as challenges that need to be overcome.⁷⁴ The GSL too highlights 'stiff price competition' in international markets, rapid advancement of technology, as well as supply chain disruptions due to geopolitical uncertainties as 'threats' in its strengths, weaknesses, opportunities and threats (SWOT) analysis.⁷⁵

The DPSU shipyard HSL still cannot participate in tenders for export orders given the company's negative net worth due to legacy issues. As the HSL continues to make a turnaround—as evidenced by its 2023–24 financial performance—and as it executes the FSS contract, it can hopefully expect to bid and win export tenders in foreign markets, going forward. The HSL notes that the negative net worth of the company as on March 2023 was Rs 478 crores and that it was striving to achieve positive net worth by March 2025.⁷⁶ This will enable it to bid for foreign tenders where positive net worth is a prerequisite.

For HAL, the February 2021 Rs 48,000 crores (US\$ 6 billion) order for 83 LCA Tejas Mk-II by the Indian Air Force is a significant milestone. The government, in March 2017, had approved a proposal for expansion of production capacity of LCA at HAL from eight aircraft per year to 16 aircraft per year. Currently, 30 aircraft can be produced at the two assembly lines, while there are plans to build another unit at Nashik.

The HAL, therefore, notes that it can easily execute an export order of 10–15 aircraft and believes that a breakthrough order for the Tejas is around the corner, given world demand for LCA and HAL's capabilities.⁷⁷ Argentina and Egypt, meanwhile, are the latest countries to show interest in the LCA aircraft programme. The HAL signed a letter of intent with the Argentine MoD in July 2023 for cooperation in the acquisition of light and medium utility helicopters. As for trainer aircraft, HAL will continue to have stiff competition from global aerospace majors with their T-50 (KAI and Lockheed Martin), T-7A (Boeing and SAAB) or M-346 (Leonardo).

As for helicopter exports, critical systems are still imported from other countries, such as the UK, France and Israel. The French engine manufacturer, Safran, for instance, powers the ALH, the light combat helicopter and the light utility helicopter; and more than 1,500 Safran helicopter engines are currently in service. A positive, though, is the fact that HAL is now co-developing helicopter engines with foreign partners. The HAL's joint venture with Safran, for instance, relates to co-development of engines for the air force's Indian Multi-Role Helicopter (IMRH) programme.

The DPSUs, in recent years, have also taken up indigenisation efforts to reduce import dependence. The HAL established an indigenisation fund in 2022–23, by transferring 3 per cent of operating profits after tax. It uploaded nearly 20,000 items on the Srijan indigenisation portal for the Indian industry to indigenise these items.⁷⁸ The GRSE ran a comprehensive five-year indigenisation plan from 2019 to 2024 for developing project-specific equipment. By 2024–25, it expects to indigenise Rs 750 crores worth of equipment that was hitherto being imported. As of 2023, it had indigenised 27 items out of the 70 items it had uploaded on the Srijan defence indigenisation portal.⁷⁹

In 2018, PM Modi exhorted the central public sector enterprises to try to achieve at least 25 per cent of their turnover from exports. India's defence production crossed the Rs 1,00,000 crore mark for the first time in 2023–24, and stood at Rs 1,26,887 crores. The DPSUs accounted for nearly 74 per cent of the total defence production.⁸⁰ As per the 2018 Draft Defence Production Policy, India aimed to achieve a defence production value of Rs 170,000 crores and exports of Rs 35,000 crores by 2025.

In February 2024, Raksha Mantri Rajnath Singh stated that by 2028–29, while defence production was expected to touch Rs 3,00,000 crores, defence exports were expected to touch Rs 50,000 crores.⁸¹ India's defence exports push is part of its effort to become part of the global defence value chain and one of the leading countries in the defence sector. The DPSUs are some of the biggest defence companies in the world in terms of sales. With the government's stress on *atmanirbharta* and ambitious targets relating to defence exports, the ability of the DPSUs to contribute to the exports pie will, no doubt, continue to be in focus.

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