

## Sharing of best practices workshop between Defence Public Sector Undertakings (DPSUs) and Private Sector Defence Manufacturers (PSDM)

### Minutes of Meeting

<b>Date</b>	19 July 2023
<b>Time</b>	0945 hrs – 1630 hrs
<b>Venue</b>	Vigyan Bhawan, Hall 2&3
<b>Agenda</b>	To facilitate an exchange of best practices between DPSUs and PSDMs

<u>Company</u>	<u>Name of participant</u>	<u>Designation</u>
Walchandnagar Industries Ltd.	Chirag Chakor Doshi	Managing Director & CEO
Walchandnagar Industries Ltd.	Dhiraj Keskar	Business Head (Aerospace and Defence)
Tata Advanced Systems Limited (TASL)	Sukaran Singh	CEO
Bharat Forge	Col Rajinder Singh Bhatia	President and CEO, Defence BU, Bharat Forge
Bharat Forge	Maj Gen AK Channan	PVSM, SM, PhD (Retd)
Larsen & Toubro (L&T) Defence	S Ranganathan	Executive Vice President & Head - Weapon & Engineering Systems and Corporate Centre, Defence IC
Larsen & Toubro Heavy Engineering (L&T HE)	Anil V Parab	Chairman, CGSSC, L&T HE
Capital Goods and Strategic Sector Skill Council (CGSSC)	Shalini Singh	CEO
CGSSC	Sanjay Bhardwaj	Senior VP
Lockheed Martin	Partha P Roy Chowdhury	Industrial Development Director
Thales Group	Anurag Garg	CXO
Bharat Electronics Limited	Manoj Kumar	Executive Director
Bharat Electronics Limited	Sankarasubramanian R	Executive Director

<u>Company</u>	<u>Name of participant</u>	<u>Designation</u>
India Optel Limited	Tarun Khattar	Additional General Manager (Dehradun)
India Optel Limited	Anubha Aggarwal	Joint General Manager (Chandigarh)
Hindustan Shipyard Limited	N Ashok Kumar	GM (Production)
Hindustan Shipyard Limited	VGV Sadasivarao	Addl. General Manager (Engineering Complex)
Hindustan Shipyard Limited	K Sudhakar	Addl. General Manager (Ship Repairs)
Hindustan Aeronautics Limited	Praveen B	AGM (Projects)
Hindustan Aeronautics Limited	Rabi Kumar Patra	DGM (Finance)
Hindustan Aeronautics Limited	Noor UI Islam	DGM (Quality)
Munitions India Limited	Dr A S Khan	GM/HEF
Munitions India Limited	Rajat Saxena	GM
Munitions India Limited	Minhaz Ahmed	DGM
Munitions India Limited	Rajarshi Dey	DGM
Gliders India Limited	Ramgyan Singh	Joint General Manager (OPF)
Yantra India Limited	C L Rawat	Regional Director (Yantra Business Development Centre (YBDC))
Armoured Vehicles Nigam Limited	Krishna Kishore	GM/HVF
Armoured Vehicles Nigam Limited	Rajesh Khanna	Jt. GM / AVNL
GRSE	Cdr Harish Kumar, IN (retd.)	Additional General Manager
BEML Limited	Debi Prasad Satpathy	Chief General Manager-HR
BEML Limited	Vinay Kumar P	Dy. General Manager (CP)
BEML Limited	Ajeet Pratap Srivastava	Dy. General Manager (IBD)
BEML Limited	Jayanth Kumar BV	Dy. General Manager (QE)
Bharat Dynamics Limited	Cmde. A Madhava Rao (Retd.)	Director Technical
Bharat Dynamics Limited	S Murali Mohan	General Manager (Refurbishment)
Bharat Dynamics Limited	Gp. Capt. M S Pundir (Retd.)	DGM (Mktg. & BD)
Goa Shipyard Limited	Cdr. Saurabh Jain	Additional General Manager (Frigates)
BEL Academy for Excellence	Rajendra Babu D	Addl. General Manager
Institute of Learning, Dehradun	Kamlesh Kumar	General Manager
HAL Management Academy	G Srikanth Sharma	Executive Director
National Academy of Defence Production (NADP)	J P Dash	General Manager

<u>Company</u>	<u>Name of participant</u>	<u>Designation</u>
Defence Institute of Quality Assurance (DIQA), Bengaluru	N Krishna Murthy, JAG (NFSG)	Joint Director
Additional Secretary, DDP	T Natarajan	Additional Secretary
JS (PNC), DDP	Shalabh Tyagi	Joint Secretary
Capacity Building Commission	Adil Zainulbhai	Chairman, CBC
Capacity Building Commission	Praveen Pardeshi	Member (Admin.), CBC
Capacity Building Commission	SP Roy	Joint Secretary, CBC
Capacity Building Commission	Anurag Kumar	Under Secretary, CBC
Capacity Building Commission	Raj Kishore	Under Secretary, CBC
Capacity Building Commission	Ariba Ansari	DeO, CBC
Capacity Building Commission	Vishal	DeO, CBC
Capacity Building Commission	Himansu Pandey	Consultant, CBC
Capacity Building Commission	Param Veer Singh	Consultant, CBC
Capacity Building Commission	Umesh	DeO, CBC
Capacity Building Commission	Bittu	MTS, CBC
Capacity Building Commission	Amit	MTS, CBC
Capacity Building Commission	Aniket	MTS, CBC
Capacity Building Commission	Yuvika Sharma	Consultant, CBC
Capacity Building Commission	Raag Haria	Consultant, CBC
SIDM	Sameer Dogra	GM – R&D, NPD
SIDM	Maj Gen Sanjeev Grover	Def Advisor
SIDM	Aman Chatrath	
KPMG	Abhishek Verma	Partner, A&D
KPMG	Cdr. Gautam Nanda	Associate Partner, A&D
KPMG	Maj Gen Rajiv Nanda	Senior Advisor
KPMG	Cdr. Jaikumar Raghunathan	Senior Specialist
KPMG	Arjun Anand	Consultant
KPMG	Geetanjali	Intern
KPMG	Ananya Singh	Intern
Hindustan Aeronautics Limited	Amit Kumar	Chief Manager (Mktg.)
Bharat Forge	S. J. Pawan	
Hindustan Aeronautics Limited	Krishna Murthy A	DGM

## **Key discussion points**

### **A. Welcome address**

- Mr Praveen Pardeshi, CBC welcomed the participants, attendees, and panellists by presenting the objective of the workshop i.e., knowledge exchange session among PSDMs and the DPSUs.
- Mr Adil Zainulbhai, CBC discussed the motivation behind organising the CBC knowledge exchange workshop between DPSUs and PSDMs, vis, for participants to cross-learn and adopt appropriate practices for improving functional efficiency. This was aimed at increasing awareness of global best practices and steps to increase process efficiency.
- Mr Zainulbhai also highlighted the importance of “Leadership Development Programmes” which can make DPSU function more efficiently. He further informed that CBC would be also organising immersive visits, to be undertaken by DPSUs at select PSDMs/DPSU facilities, to increase cross-learning opportunities. This is in tune with the Hon’ble Prime Minister’s push to increase communication among ministries, departments, and sub-departments.

### **B. Setting the context**

- Mr Abhishek Verma, Partner, KPMG, presented an overview of the Indian defence sector including an analysis of the defence budget and global best practices for increasing efficiency/market competitiveness.
- He talked about the opportunities in the Indian defence sector highlighting programmes/schemes/policies undertaken by the government to promote indigenous manufacturing in the sector. This included:
  - Positive Indigenisation List (PIL).
  - Increasing partnerships between Indian OEMs and private entities.
  - Make in India initiatives.
  - Investment opportunities in the Uttar Pradesh Defence Industrial Corridor and the Tamil Nadu Defence Industrial Corridor.
- Industry 4.0 was introduced as an efficiency enabler through tools such as robotics, cyber security, digital twins, and many more.

**C. Panel 1: What does it take to sell/export globally: achieving cost-effectiveness and market competitiveness**

- On the topic of developing capabilities required to achieve global export competency, Col Rajinder Bhatia, Bharat Forge highlighted the need for a skilled and quality workforce. He also discussed the potential of employing people from Tier 2/3 cities and training them to flourish as experienced engineers.
- Mr Manoj Kumar from BEL highlighted the need to improve and progress in the market using partnerships with Indian OEMs.
- Mr Anil Parab from L&T HE emphasised the importance of cultural transformation, world-class quality of deliverables, transparency in processes coupled with a customer-centric approach, global safety standards and global practices, which are essential to achieve global market competitiveness. He also highlighted the importance of 'cost leadership' to stand out in the sector.
- Mr Chirag Doshi, Walchandnagar Industries added that cost leadership and innovation should go together, and that innovation should not be compromised to pursue inexpensive product development. He talked about the merits of customer service, in addition to manufacturing and export, to establish a strong customer connection.
- Mr Shalabh Tyagi, Joint Secretary (P&C), DDP presented the vision of the Government of India for increasing the national defence production to INR 1,75,000 crores by the end of 2025. He also discussed the need for state-of-the-art simulated testing facilities for equipment and encouraged the PSDMs in the panel to work on the same, he also indicated that a 75% grant was being provided from the government for this initiative.

**D. Panel 2: Efficiency enablers and best practices to integrate with the global supply chain**

- In this panel, the major topics covered were the practices that are to be adopted by DPSUs to integrate themselves into the global supply chain of international manufacturers.
- Mr Partha Roy Chaudhary, Lockheed Martin initiated the discussion by highlighting key factors that a company would consider namely product, quality, integrity, ethics and diversity.
- Mr Anurag Garg, Thales, added the importance of a strong product portfolio. He discussed that global competitiveness can be enhanced by adopting technology

- absorption capability and efficiency. He suggested co-development of products and partnering with Indian companies under the Make in India initiative.
- In the later part of the discussion, Industry 4.0 and its implementation in the industry were discussed. Mr S Ranganathan, L&T illustrated their innovations in the field wherein they used automated processes to shorten cycle times.
  - Mr Murli Mohan, BDL concurred about the importance of Industry 4.0 implementation in manufacturing where using tools of Industry 4.0 they were able to significantly improve the field deployment.
  - Cdr Saurabh Jain, GSL highlighted the initiatives undertaken such as design labs, virtual reality centres and ERP implementation to make the process of the shipyard efficient. He also shared their experiences in AI capability building, predictive maintenance, and designs of platforms/systems. whilst mentioning certain limitations to automation. Further, the modernisation of the shipyard through block assembly shops and robotic welding reduced the time and intensity of certain tasks.
  - BDL shared their experience in using conceptual model generation and aerodynamics modelling which enabled them to reduce the testing timeline of missiles.
  - Cdr Jaikumar Raghunathan, KPMG discussed secure technologies to remain connected to various vendors and customers through the internet or closed/restricted wide area networks. He added that companies like MDL, GRSE and Warship Design Bureau (WDB) are already progressing towards connectivity through a product data model/product life cycle model operating on a Wide Area Network (WAN). He discussed the future scope of such models and added that system integrators can extend this product development management /products lifecycle management framework to also include supply chain stakeholders/ vendors / sub-contractors, with layered security protocols/ controlled access/viewing while also being able to add required inputs in the required data formats and leverage complete data interoperability.
  - To achieve this, going forward, he indicated that it would be imperative for the Indian industry in general and DPSUs to embrace efficiency enablers such as connected enterprises/networks and an Integrated Product Data Environment (IPDE) using a robust product/Platform Work Breakdown Structure (PWBS) as a backbone.
  - Thales discussed their capability with multi-faceted solutions to cybersecurity using encryption and security on both a hardware and a software level.

- Mr Abhishek Verma, KPMG added to this point by discussing the layers of cyber security at the people level, wherein they need to be trained regularly to identify new and emerging threats.

#### **E. Breakout rooms**

- In breakout rooms, the DPSUs engaged in a conversation with the PDSMs on strategies employed and the way-ahead for the DPSUs.
- Mr Sukaran Singh, TASL discussed the possibility of creating competition among MSMEs through diverse supply nodes and upgrading vendor capacity through expert interventions. He also added that engaging multiple vendors facilitates a self-correcting culture. Further, the Government of India should formulate policies which could foster experimentation by DPSUs through limited/relaxed audit processes. Lastly, the need to standardise and optimise processes before digitalising them and implementing Industry 4.0.
- The breakout rooms further discussed and concluded with the below points:
  - Role of intellectual property rights in exports Sharing of the best practices through immersion workshops
  - Role of training and skill improvement of the workforce
  - Role of quality, cost, and timely delivery for defence exports
  - Role and importance of ERP for Industry 4.0
  - Digitisation of quality parameters
  - Cyber security
  - Engaging third-party competency testing agency for internal assessment of employees
  - Create competition during the procurement and development process by diversifying the vendor base
  - Adoption of Industry 4.0 in a graded and phased manner

#### **F. Closing remarks**

- On the several topics discussed during the workshop, Mr Praveen Pardeshi, CBC, proposed the following points to foster the development of the A&D sector in India:
  - To resolve the issue of delay in getting export clearances, it is proposed that a green list consisting of identified friendly African and Latin American countries for defence exports may be published, to whom DPSUs/other defence manufacturers are free to export without taking any prior approval.

- Currently, only Chennai port is cleared for handling explosives, thereby increasing logistic costs. It is proposed to allow an alternate port on the country's west coast for explosive exports, thereby reducing logistics costs of DPSUs such as Munition India Limited (MIL) and allow them to capture and fulfil large orders from Western countries.
  - Creating an 'innovation fund' in each DPSU for developing new products and platforms. This fund should not be covered under normal audit procedures as this fund is meant to catalyse innovation, experimentation and accommodate failures, if any.
  - To develop the capacities of the workforce, experts should be hired on a fixed contract-basis instead of investing in reworking the HR policies of DPSUs. This practice has already been adopted by other PSUs.
  - Recruiting apprentices, especially shopfloor workforce, from Tier 2 or Tier 3 universities/colleges and helping them grow on the job. This can increase the retention rate of DPSUs. This is already practiced by leading private defence manufacturers.
  - To enhance quality of goods/services provided by MSMEs, it is suggested that DPSUs should invest in long-term mentoring of MSMEs which are integral to their manufacturing supply chain. This would also help MSMEs get access to essential testing and prototype facilities.
- Mr T Natarajan, Additional Secretary (DDP) elaborated upon the government provisions that can enable DPSUs to meet industry requirements. He also discussed the need to increase R&D spending and to create a level playing field for the DPSUs to make a mark in the global supply chain. Further, he elaborated that the R&D fund should be used by DPSUs to experiment and develop new technologies, without a looming "fear of failure" or audit objections.

### **Next steps**

- DPSUs will discuss the learnings from the session with appropriate authorities within their enterprises and the respective Boards of Directors.
- CBC and DPSUs are to coordinate immersive visits to leading private sector firms to further develop their understanding on best practices. The visit particulars are annexed in the table below.



- CBC to also visit of DPSU Siemens center in Mumbai to understand implementation of Industry 4.0.

Immersion learning between DPSUs and private sector				
#	Firm	Type	Areas of excellence that can be considered for immersion of DPSU personnel	DPSU that may be considered as immersion
1	L&T Defence	Indian private manufacturer	Supply Chain and procurement process management, ERP and digital interventions, multi-location-multi specialisation project management	Armoured Vehicles Nigam Limited, Hindustan Shipyard Limited, Indian Optics Private Limited, Bharat Earth Movers Limited
2	L&T Heavy Engineering	Indian private manufacturer	Global price competitiveness, Marketing and Business Development for exports, Digital and data driven manufacturing	Armoured Vehicles Nigam Limited, Advance Weapons and Equipment India Ltd, Midhani, Goa Shipyard Limited, Bharat Dynamics Limited
3	Walchandnagar Industries Ltd.	Indian private manufacturer	Quality control and quality assurance processes	Yantra India Limited, Advance Weapons and Equipment India Ltd
4	Bharat Forge	Indian private manufacturer	Partnership, JVs and international collaborations, procurement process management	Munition India Limited, Advance Weapons and Equipment India Ltd
5	Tata Advanced Systems Limited (TASL)	Indian private manufacturer	International Collaborations, Absorbing ToT, Strategy for entering and sustaining presence in supply chains of global OEMs,	Gliders India Limited, Troop Comforts Limited (only for understanding international collaboration and strategy to enter global market)
6	Aeque Aerospace	Indian private manufacturer	International Collaborations, Absorbing ToT, Strategy for entering and sustaining presence in supply chains of global OEMs,	Munition India Limited, Gliders India Limited (only for understanding international collaboration and strategy to enter global market)
7	Dynamatic Technologies	Indian private manufacturer	International Collaborations, Absorbing ToT, Strategy for entering and sustaining presence in supply chains of global OEMs,	Munition India Limited, Troop Comforts Limited (only for understanding international collaboration and strategy to enter global market)