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Building India's Mettle

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Building India's Mettle

Deepak Kumar Hota, Chairman & Managing Director, BEML Ltd., says indigenization is key in making India a better place to live in.

By Swati Deshpande

How has been the last year for the company in terms of new projects and delivery of in-hand projects?

I am happy to share that BEML has just been awarded Mumbai Metro line 2, 2A & 7, which is around Rs. 3,000 cr. order, the biggest ever order for BEML that takes our order book value to almost Rs.10,000 cr. It also has provision for an optional order on additional 126 cars worth Rs.1000 cr. Besides the Mumbai Metro, presently we are executing orders for Kolkata

and Bangalore Metros. We are also expecting further orders from Bangalore Metro. In Defence, we have a big order of Rs. 1400 cr. for supply of Armoured Recovery Vehicles, Rs 500 cr. order for Sarvatra Bridge system. In addition, order worth Rs. 500 cr. is in the pipeline for supply of Armoured Repair Recovery Vehicles. There is a continuous surge in the demand for Defence spares to almost double compared to last year and we are gearing up to meet the requirements. Further orders worth



Rs 200 cr. are expected shortly. As far as Mining & Construction is concerned, last year was a notable one for BEML since we supplied newly developed, higher capacity dumpers to Coal India Ltd. on trial cum sale basis apart from our regular supplies. Since the mining segment is migrating towards deployment of higher capacity equipment to meet the higher production requirements, BEML has taken initiative to design and manufacture of higher capacity mining equipment such as 190-205 ton range and 150 ton electric dump trucks, 180 class electric and diesel versions of excavators and 850 hp bulldozers with in-house R&D strength.

Q How do you foresee Indian market growing in the railways manufacturing segment?

At present, Indian Railways is primarily focusing on various infrastructure augmentation viz., electrification of railway routes, track doubling for capacity augmentation and enhancement of safety & amenities for passengers. Also, infrastructure maintenance has been considered as forefront requirement for providing better services to the people.

The rail policy talks of strengthening the existing corridors and new corridors. There is also a market for sub-urban trains to move into IGBT 3 phase to run like a metro, instead of being pulled by a locomotive, which is another option for us. This is aided and buoyed up by the 'Make in India' policy of the Government of India.

Q BEML is working closely with Indian Railways. Kindly tell us about how are you helping Indian Railways in modernisation?

To support 'Mission Electrification', BEML has designed and manufactured OHE Inspection & Maintenance Vehicle, which will be put up for trials soon. Currently, BEML is working on localization of 'Wiring Train', Inspection & Maintenance of track vehicles contributing 'Make in India' policy. We are also working with global players for localization and supporting Make in India policy for various equipments viz., wiring train, track grinding & maintenance, track inspection, etc.

BEML is using its state-of-the-art manufacturing facility, for the first time in manufacturing 20 sets of LHB car

Infrastructure development such as urban rail transit systems in 2 tier-cities and expanding existing metro lines are encouraging and we envisage huge requirement in Metro business segment fulfilling our production capacities in near future.

body and bogies which will be delivered soon. Railway's thrust for augmenting LHB design coaches for its fleet will have big opportunities for BEML.

Considering our experience in coach manufacturing including the capability of manufacturing stainless steel coaches, we are executing Railway Board's order for 300 MEMU coaches with 3 Phase Propulsion system. Keeping in view the emerging requirements, new products like Light Rail Metro Cars, Medium & High-Speed Trains, Track laying machines & Safety & Maintenance related equipment have been planned. BEML is working in close co-operation with Indian Railways in their mission to make the Railways safe, secure and to offer better amenities, riding comfort, punctuality & efficiency.

Q How is India's emphasis on creating infrastructure encouraging the company?

Infrastructure development such as urban rail transit systems in 2 tier-cities and expanding existing metro lines are encouraging and we envisage huge requirement in Metro business segment fulfilling our production capacities in near future. With this, BEML expects consistent metro coach orders to the tune of more than 800 metro cars in next 2-3 years.

Q Can you please tell us about some of the prestigious projects that BEML is carrying out in the construction equipment and defence sectors?

Since the mining segment is migrating towards deployment of higher capacity equipment to meet the higher production requirements, BEML has designed and developed higher capacity mining equipment such as 190-205 ton range and 150 ton electric dump trucks, 180 class electric and diesel versions of excavators and 850 hp bulldozer with in-house R&D strength.

In our defence portfolio, we have developed the new products in the recent past, they include the Arjun Armoured Repair and Recovery Vehicle (ARRV) and the Medium Bullet Proof Vehicle (MBPV). ARRV trials have been successfully completed and order for 10 units worth Rs. 500 cr. is in the pipeline. The supply of Sarvatra Bridging System and 204 units ARVs to Ministry of Defence (MoD) will add substantial revenue to the defence business vertical.





R&D is central to our operations where in over 56% of the turnover comes from R&D developed products in an environment where 80% of orders are secured through competitive bidding.

BEML's defence business is venturing into new platforms viz., Combat Vehicle Segment, Mounted Gun Systems, Light/Medium Armoured Vehicles, Futuristic Infantry Combat Vehicles (FICVs) etc. as listed below:

- Integration of Missiles from the current activity of manufacture of modules for Missiles.
- Overhauling of Armoured Recovery Vehicles & BEML Tatra vehicles.
- Manufacture of Bullet proof and Mine Protected Vehicles to meet the requirements of Armed forces and MHA.
- Manufacture of variants of Main Battle Tank to serve the needs of the Indian Army.
- Development of 1500 HP engine for Defence application

As a part of future business potential and to supplement the production of OFB, BEML is developing critical aggregates for battle tanks like Hull, Transmission, Engine, and other aggregates. Further, BEML has signed MoU with OFB for development of Mounted Gun Systems.

Presently, discussions are ongoing with global aerospace companies for manufacture of Ground Support Equipment and Aerospace components against offsets. MoUs are expected to be signed with a couple of companies in the near future.

There is huge competition from foreign players in the segment of railways & metros and construction & mining equipment manufacturing. How do you look at it?

We believe that boost in competition is beneficial for the Nation's development. Government's focus on infrastructure development and 'Make in India' policy enables BEML to work on par with the global suppliers and enhances the localization of global technology in Rail & Metro segment.

Similarly, stiff competition from overseas suppliers for Mining equipment like High capacity Dumpers, Dozers, Rope Shovels and Walking Draglines. Coal India has projected huge demand for the next 3 to 4 years for high capacity equipment.

BEML is operating in intense competitive business environment across all its business verticals and is pitted against MNCs to win sale orders.

Can you please tell us about BEML's global footprint?

BEML has sizable market share in export market with more than 1200 units of mining and construction equipment to 68 countries across the globe.

The company has exported Railway products to Bangladesh and Sri Lanka and Defence products to Suriname and Honduras. BEML has exported its equipment to various projects under Indian Line of credit including Buyer's Credit NEIA (National Export Insurance Account) Scheme of EXIM Bank to Malawi, Srilanka, Senegal, Bangladesh, Zimbabwe, Ethiopia and Honduras.

Our focus is on Africa, Middle East and SAARC market segments for mining and construction segments that have contributed to around 85% of the total export business of BEML. In order to scale-up revenue from exports and the thrust given by the Government of India for exports performance by CPSEs, recently new distributors have been appointed by BEML in 10 countries viz., Nepal, Ghana, Syria, Bangladesh, Zimbabwe, Oman, Kenya, Tunisia, Myanmar & Angola. BEML has plans to export the following new products:

(a) **Defence:** High Mobility Vehicles, Air craft towing tractor, Armoured Personnel Carrier vehicles, Crash Fire Tenders, Mine Ploughs, Backhoe Loaders, Excavators, Bulldozers

(b) **Rail & Metro:** Rail coaches, Stainless Steel EMU, Catenary Maintenance vehicles., Wagons, Metro cars

(c) **Mining & Construction:** Bulldozers, Wheel Loaders, Excavator, Dump Trucks, Motor Graders, Pipe Layers, Water Sprinklers.





BEML is concentrating on export of defence equipment to neighbouring countries such as Sri Lanka, Myanmar, Bangladesh, Nepal, Bhutan, etc. to increase the export turnover as well as meet the demand in those countries.

Q Can you please tell us about BEML's manufacturing capacities & capabilities facilities?

We have plants located Bangalore, Kolar Gold Fields, Mysore and Palakkad manufacturing equipment for Defence land systems, Rail & Metro rolling stock, Construction & Mining equipment. The capabilities cover the entire spectrum including production of engines, transmissions, axles, hydraulics and structures. The complexes are equipped with Plate shop, Fabrication shop, Machine shop, Gear shop, Heat treatment shop, Tool room and assembly shops. Laboratories for material testing and Metrology are available to support the production activities. Test track and testing grounds are available for evaluation assembled equipment.

We also have one of the best infrastructures for manufac-

turing stainless steel rail / metro coaches with the installed capacity exceeding 300 vehicles per annum. Specifically, we have trained manpower resources, streamlined manufacturing processes with facilities such as Laser cutting machines, Robotic welding machines, Jigs & fixtures, Electro-mechanical testing, etc. Also, BEML has well maintained regional / district offices to enable easy networking and services.

Q Research & development plays an important role in the manufacturing sector. Tell us about your R&D efforts?

BEML has well established Research & Development (R&D) centre to provide complete technical solutions for supplying the Rail & Metro vehicles. R&D is central to our operations where in over 56% of the turnover comes from R&D developed products in an environment where 80% of orders are secured through competitive bidding.

Innovation cell in BEML has galvanized the Intellectual property related awareness among the R&D engineers and training has been organized on patenting which has led to filing of eight patents till date. Another ten patents are under drafting to secure the IP rights for the company.

Structured discussions with leading academic institutions like IISc are in progress for engaging them in the development of new technologies required for Noise reduction, Explicit analysis, Computational fluid dynamics, Clutch simulation, etc. This is expected to yield significant breakthrough in development of critical aggregates and import substitution products. IIT- Kharagpur have been engaged for cooperation in the areas of bogie design, three phase propulsion system controls, EMC/EMI studies, alternate car body material.

BEML has entered in to MoU with ARAI, Pune for execution of projects in the area of Emission reduction and Noise control and has become a member of ARAI with access to their test facilities. Close cooperation with research laboratories of DRDO like CVRDE, VRDE and R&D Engineers is maintained for joint development of products and systems.

Q How do you foresee Indian market in the defence manufacturing sector growing in coming years?

Make in India policy aims to strengthen the defence-industrial base through measures like reforming the cap on FDI. Public-private partnership in defence in the country is being encouraged to step up arms exports and licensing system has been liberalized. Our proactive and concerted approach has resulted in indigenization level of 100% in Pontoon Bridge System, to more than 80% in case of high mobility heavy duty trucks.

BEML's overall business strategy is to transform itself into a system integrator by outsourcing a substantial part to Indian vendors by leveraging the strengths especially of the MSMEs. The indigenization drive aims to gain competitive edge by moving towards the goal of 'pushing the boundaries with innovation, technology and indigenization'. The growth of BEML vendor base in the last 3 years has been to the tune of 5-6% annually.

Highlights of BEML's R&D efforts

- R&D expenditure has been increased from 2.01% in 2015-16 to 3.08% in 2017-18.
- Major products developed by in-house R&D namely BH150E & BH205E electric drive dump trucks bagged trial orders from customers and are working at customer site.
- Major R&D product - BE1800E electric excavator has successfully performed at customer site and was awarded Raksha Mantri award for design effort during May 2017. Further orders for supply of BE1800E from Coal India Ltd. are in process.
- R&D products developed against customer specifications having latest features that are at par with global players have performed well during trials by customer agency i.e. DGBR & have been qualified for future supplies.
- R&D successfully completed the ARR V prototypes for CVRDE and were delivered after testing. This opens up the possibility for more orders for ARR V for which BEML will be the production agency.
- Developed Medium Bullet Proof Vehicle (MBPV) for inland security applications for agencies like CRPF & CISF, etc. and show cased at DEFEXPO 2018.
- Developed Mounted Gun system prototype jointly with Ordnance Factory Board and showcased at DEFEXPO 2018.
- Developed BL30-1 Wheel loader, which opens up the market for 5 ton class wheel loaders for the company.
- Developed Diesel Electric Tower cars (DETC) for Indian Railways.
- Was awarded one patent each during the years 2015-16, 2016-17, 2017-18 and eight patents have been filed during 2018-19 so far.