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# Manufacturing Today

DECISIVE TOOL FOR MANUFACTURING

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## WHO DARES PROFITS

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# WHO DARES PROFITS

ALTHOUGH DISINVESTMENT IS ON THE HORIZON, THE RESOLVE SHOWN BY DEEPAK KUMAR HOTA, CMD, BEML, CONTINUES TO PUT THE COMPANY ON A HIGH-FLYING TRAJECTORY

BY JAYASHREE KINI MENDES





**LATELY, BEML HAS BEEN IN THE NEWS FOR** all the right reasons. The public sector company has been darting past new milestones that are created and quickly crossed with few realising the swiftness of its moves. Single intrepid acts may go unnoticed. But when they happen frequently, they cannot be ignored.

Recently, BEML along with IRCON International signed an MoU to to explore and address opportunities in the overseas market for large infrastructure projects in the transportation sector. In another move, it tied up with Wipro Infrastructure to work together on complex projects of aerospace industrial automation, among other things. At a time when BEML plays in a space that has far too many contenders, this and more such moves only tells you a story about a strong- and fast-growing organisation.

They are not coincidences. It is the work of a visionary and determined leader led by Deepak Kumar Hota, CMD, BEML. Since taking over as CMD in 2016, Hota has intensified the tempo of contracts gained and catapulted the company into achieving the highest sales. Today, with an order book of Rs 10,000 crore and counting, BEML has proved that Indian companies, that too a PSU, can withstand global competition and make a mark.

Despite this, the government has recently given its approval to sell 28% of its stake through strategic disinvestment. Hota says, "As a government owned company, there are certain procedural and other obligations that are absent in private companies. However, about 87% of all business that we do is against open competition. Of that 2-3% of our turnover is

spent on R&D, and 65% of current sales are products fully created through in-house R&D. As I foresee, when a larger chunk of the company becomes privatised, it may propel us to achieve heights."

#### ON A ROLL

It's not commonly known that the diversified PSU has several firsts to its credit. Hota says, "We were the first in the country to manufacture a railway coach. Over the years, we have supplied more than 18,000 to 20,000 coaches to Indian Railways alone. But with the Metro becoming the order of the day, we turned to garnering major market share in Metro car business in the country."

What makes Hota proud is the rapid transformation the company has made from manufacturing a standard Metro coach to driverless Metro trains. In September, BEML delivered the first driverless metro coach to MMRDA's Mumbai Metro project, which was launched by none other than the Prime Minister. Driverless trains call for sophisticated R&D and as

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Hota says "it involves a high level of expertise in train control and monitoring system and wheel and track monitoring; in all making it a complex affair".

In mining and construction segment, BEML has introduced high-capacity electric dump trucks in the range of 150 tonne and 190 tonne with high capacity engines with an electro drive in keeping with the latest norms on emission control. To complement the high capacity dumpers, a 180 tonne electric excavator has also been indigenously developed by BEML. Hota says, "Our strategy of new product range has even extended in the area of defence, wherein BEML rolled out a repair and recovery vehicle for Arjun Main Battle Tank, called ARRV. This kind of innovation and agility is not given to many."

It would surprise many to know that BEML, which came into existence 55 years ago was established to manufacture mainly railway products and earth-moving equipment, has also successfully forayed into the aerospace domain.

#### TREADING THE WORLD

All of this did not happen overnight. This Schedule 'A' PSU to be internationally competitive, systematically strengthened its fundamentals. Hota says, "Backed by a capable R&D team and large designing and testing facilities, an R&D centre was set up with UNDP funds in KGF (Kolar Gold Fields) manufacturing complex. A keen, proficient and motivated human resource to absorb technology, including through tie-ups with academic institutions, is the backbone of our success."



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The R&D efforts also involve filing for IPR (Intellectual Property Rights) which is spearheaded by an Innovation Cell set up at the corporate office. Hota says, "We have filed for 65 patents last year and already have 7-8 with us."

Then there are the eight manufacturing plants located at Bangalore, Kolar Gold Fields, Mysore and Palakkad which service all the three verticals (see table). Most of the manufacturing units are provided with state-of-the-art advanced automation and robotics machineries. Besides this, Hota says the company has also incorporated machine intelligence systems in its products such as opera-

2. Missiles mounted on BEML manufactured multipurpose defence vehicles.

3. Hangar for multi-utility vehicles.

1. BEML's rail & Metro delivery hangar.







4 The company has invested in extensive machinery for its manufacturing process.

5. Assembly line for multi-purpose vehicle

6. It has launched a 180 tonne electric excavator that has been indigenously developed.

tor fatigue monitoring, predictive maintenance diagnosis, and autonomous operating systems. As a market leader in dozers, the company is creating an autonomous one, which can operate smoothly and remotely in regions like Leh-Ladakh that see extreme temperatures.

Keeping with the times also calls for adopting AI and IoT and Big Data that have become the norm for any manufacturing organisation to stay ahead of the curve. The company is looking at Industry 4.0 and other novel technologies, but as Hota says, "investment in these will happen when the market picks

up. However, as every year, it has earmarked Rs 100 crore per annum on capex, and will continue to invest more as and when the need arises".

Considering that most of the manufacturing is customised for different product lines with unique applications, BEML has made its forte the technology and manufacturing process related to powertrain, hydraulics, structural engineering, NVH analysis etc. Hota cites an example of how one technology used in one product is leveraged into other similar products as well. For instance, the hydro-pneumatic suspension technology used in battle-tanks are also used in mining dump trucks.

The innovative practices continue. Hota believes that it's always an advantage to foster in-house creations such as numerous jigs and fixtures, advanced manufacturing processes, robotic welding, bogey and underframe manufacturing, which will always offer an edge over the competition.

Currently, efforts are on to meet the new emission standards as it also makes engines for in-house products.

BEML believes in associating with prestigious institutions like IIT (Kharagpur), IIT (Madras), IISc and others for further honing designing, NDT (non-destructive testing) and streamlining manufacturing processes of innovative products indigenisation.

Relying on its prowess as a heavy engineering company, BEML has sought to reduce the metro coach gestation period for proto delivery anywhere between 18 and 24 months. Thereafter, the equipment would undergo multiple tests for safety factors and involves authorities like RDSO, or Rail Safety Directorate, among others.

Heavy engineering companies are also prudent in their purchases and demand generation. Following the L1 policy, Hota says that some might find the long-winding process of choosing suppliers irksome, but it's robust and meant to last. The varied number of SKUs also compels the company to carefully look at quality and pricing, and most importantly, attempt local sourcing to keep in step with the government's Make in India campaign. Incidentally, Hota says the government's campaign has worked immensely to their advantage.

A strong back-end technology enables them to discern what machine or equipment will find demand and the raw materials they need to procure. There's also a judicious mix of outsourcing that is done that gives BEML an advantage of delivering quickly.

#### THE EXPORT JUGGERNAUT

The typical nature of government organisations requires them to have an elaborate system of registering suppliers who have also withstood the test of time. BEML believes in treating its suppliers as

#### EQUIPMENT MANUFACTURED BY BEML

Defence	Mining & Construction	Rail & Metro
Tatra based high mobility trucks	Bulldozers	Integral rail coaches
Recovery vehicles	Excavators	Metro cars
Bridge systems	Loaders	AC EMUs
Vehicles for missile projects	Pipe layers	OHE cars
Tank transportation trailers	Wheeled dozers	Steel and aluminium wagons
Milrail wagons	Tyre handlers	Track laying equipment
Mine ploughs	Shovels	Utility vehicles
Crash fire tenders	Dumpers	Treasury vans
Snow cutters	Water sprinklers	Spoil disposal units
Aircraft towing tractors	Motor graders	Broad gauge rail bus
Aircraft weapon loading trolleys	Under mining equipment	



partners and are made to be a part of the overall ecosystem.

The intricate and complex nature of work in the aerospace division and its ambition to become a Tier-I supplier to global OEMs has aided BEML to seek out counterparts from the private sector and vice-versa. Hota says, "Currently, our aerospace division involves fabrication of rocket motor casings for various missile programmes like Akash, QRSAM, MRS-AM, design and development of ground handling equipment, ground support equipment for LC and Tejas, etc. Considering we have the advantage of an SEZ park in Devanahalli, we are in talks with Lockheed Martin to integrate us as part of their global supply chain and with Irkut Corporation to assemble a trainer aircraft and then of course with other aerospace and defence players such as Dassault Aviation and Boeing Global Services for various opportunities."

The company has been aggressively following up with every opportunity that could give them a chance

to prove their prowess. Catering to ISRO and HAL and BEL for their requirements is one of the ways. Then it has aligned itself with the Indian private sector like Bharat Forge, L&T, Wipro Infrastructure, and has critical global tie-ups with UK-based Pearson Engineering, Poland-based PHO, and Czech company Tatra Trucks.

Hota says it has also has strong tie-ups for rail and metro projects with Hyundai Rotem and Hitachi.

Concurrently BEML continues to up-skill its people and its training runs into 20,000-25,000 man days per annum. Certificate courses are held for employees and as and when a requirement arises, employees are promoted based on how promising they are.

While leading BEML in its complex and competitive business environment, Hota is conscious of the growing apprehension amongst the employees with respect to disinvestment. But, he continues to do what's best: Bag larger contracts and bulk-up the order book. ■

7 Hi tech multi axle assembly line.

8. Assembly line for dozers.