



## BEML@ Aero Show 2021

### Showcasing capabilities in Defence & Aerospace



Hon'ble RM going around BEML Stall

**B**EML showcased its niche products, at Aero India 2021, the biennial mega Aero exhibition, held at Bangalore, from Feb. 3<sup>rd</sup> - 5<sup>th</sup>, 2021, such as Transporter Landing System (TLS) and variants of Unmanned Aerial Vehicle (UAV) with 'Atmanirbharata' as the theme. At its indoor stall, BEML also displayed various equipment and critical components in the Aerospace sector.

Host of VVIPs visited BEML stall, including Shri Rajnath Singh, Hon'ble Defence Minister, Gen. Bipin Rawat, PVSM, UYSM,

AVSM, YSM, SM, VSM, ADC, Chief of Defence Staff, Gen. M M Narvane, PVSM, AVSM, SM, VSM, ADC, Chief of Army Staff, Vice Admiral MS Pawar, AVSM,



Chief of Defence Staff being briefed on BEML activities at Aeroshow 2021



CMD greeting Chief of Army Staff on arrival at BEML stall. Also seen Director, Defence Business, BEML

VSM, Deputy Chief of Naval Staff (DCNS) among others apart from high level Defence teams from neighbouring and foreign countries.

BEML's focus was to display its capability, promote Aerospace & Defence products and to interact with potential customers and also to explore collaborations. BEML signed several MoUs to enter into collaborations with major players in the Defence & Aerospace Business. BEML also used the opportunity to network with MSMEs and Start-ups to maximize its efforts of localization/indigenization.

In this issue.....	BEML at Aero Show	1
	MoUs	2
	New Products at Aero Show	4
	Rolled out of MMME-MKII eqpt.	5
	Equipment for NCL, CIL	6
	Rescue and Relief Operations/ New order	7
	Celebrations, Initiatives	8

Shri M V Rajasekhar has taken charge as Chairman & Managing Director of BEML on 1<sup>st</sup> Feb 2021, in addition to his current responsibility as Director (Mining & Construction).



## MoUs to explore & enhance the business in Defence & Aerospace

**B**EML signed MoUs with 11 entities to explore and enhance the business in Defence & Aerospace Sector in the presence of Shri Rajnath





Singh, Hon'ble Raksha Mantri, GoI, at the Bandhan Ceremony of AERO INDIA 2021. Shri M V Rajasekhar, CMD, Shri Suraj

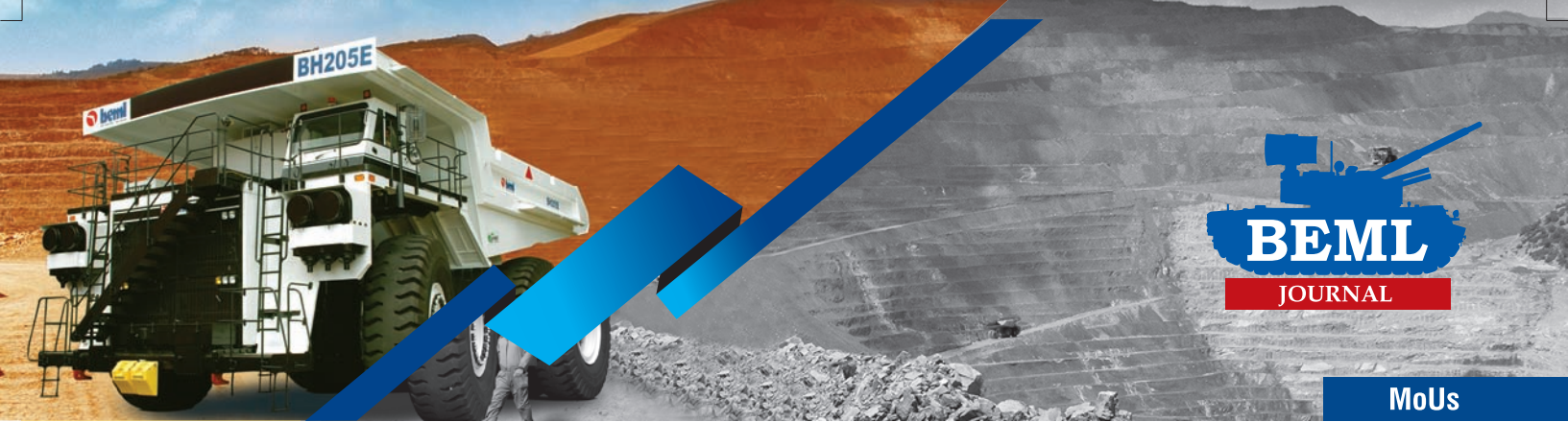
Prakash, Director (Finance), and Shri A K Srivastav, Director (Defence Business) were present on this occasion along with other senior officers.



Shri MV Rajasekhar, CMD, Shri AK Srivastav, Director Defence Business, after signing MoUs with several Companies under 'Bandhan' in the presence of Shri Rajnath Singh, Hon'ble Defence Minister, Shri Raj Kumar, Secretary, Defence Production, Gen. Bipin Rawat, Chief of Defence Staff, Gen. MM Narvane, Chief of Army Staff

### MoUs

 <p>UP Expressway Industrial Development Authority</p>	<p>UP Expressway Industrial Development Authority (UPEIDA) to explore the opportunities for establishing warehouse storage for parts and activity center for servicing cum overhauling of BEML products (MRO).</p>
<p>Advance Navigation Positioning Company (ANPC) for joint manufacturing of transponder landing system (TLS) for Indian armed forces, Airport Authority of India (AAI) and Oil exploration companies.</p>	
	<p>Primico UAV SE, Czech Republic for manufacturing of '150 kg class' Surveillance UAV for Indian as well as global requirements such as Intelligence based agriculture, Remote mapping, Pipeline Monitoring, Mining Support, Security &amp; Intelligence, Disaster Management &amp; Surveillance.</p>
<p>IIT Kanpur for joint development and manufacturing of 25 kg class Tactical UAV for Armed forces.</p>	



## MoUs

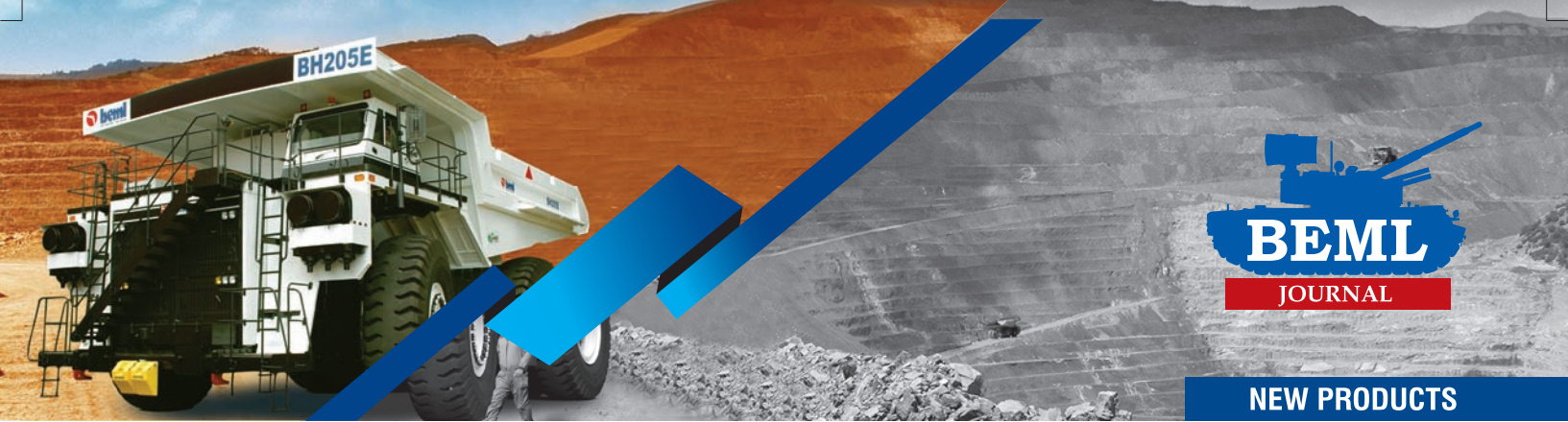
	<p>Torus Robotic Pvt Ltd, Chennai for joint development Artificial intelligence (AI) based unmanned ground vehicle (UGV), Robotics, Light weight, Ingenious electric power drive system for defence and commercial applications.</p>
	<p>Council of Scientific and Industrial Research (CSIR)-National Aeronautics Laboratory (NAL) to develop in the areas of advance composite and autoclaves, Mini unmanned aerial vehicles, Design &amp; analysis of aircraft structure and systems.</p>
	<p>Outdu Mediatech Pvt. Ltd., Bangalore for Artificial intelligence based vision system and face recognition system for surveillance &amp; monitoring applications.</p>
	<p>SKAT Systems, Russia for joint manufacture of High Altitude UAVs for Indian and Global requirements.</p>
	<p>Hacklab Solutions Pvt Ltd, Bangalore for AI Based Lightning System (headlamps / fog lamps) on Heavy Earth Moving Machinery (HEMM) current and future products in order to make more competitive.</p>
	<p>JSC 'Rosoboron' Export, Russia for projects such as infantry combat vehicle 'Boomerang', light armoured vehicle 'Strela', Auxiliary power units for T-71 / T-90 tanks, Air Defence Systems.</p>
<p>SYOMKA S VOZDUHA, Russia (Shooting from Air) for manufacturing of Marine Drones and Anti Drone Systems.</p>	
	<p>Adani Defence Systems &amp; Technologies Limited to provide mobility systems for armed vehicles such as wheels armoured personal carriers, infantry combat vehicles and main battle tanks. Apart from development and production of Jigs and fixtures for UAVs, Air borne structures, ground handling and ground support equipment for Airports.</p>



Shri MV Rajasekhar, CMD, BEML along with Shri A K Srivastav, Director, Defence Business and Shri R Venkatesh, Director Business Development, NAL (CSIR - NAL) displaying with the copies of the MoUs



Shri A K Srivastav, Director, Defence Business exchanging the copies of MoU with Shri Ashish Rajvanshi, Managing Director, Adani Defence Systems & Technologies Limited in the presence of Shri MV Rajasekhar,



## BEML Products at Aero Show 2021

### Transponder Landing System (TLS)

TLS is a Ground-based precision landing system, which can improve access to Airports where terrain or land constraints make instrument landing system (ILS) installation unfeasible or cost-prohibitive. TLS works over any terrain, using directional antennas and can be installed even on short runways ending with water / obstructions. It would be manufactured in India by BEML in collaboration with Advanced Navigation and Positioning Corporation, USA.



*Transponder Landing System*



*BEML Primoco*

### Unmanned Aerial Vehicle

BEML Primoco UAV- 'One 150', the state-of-the-art UAV designed for civilian and also military uses was one of the centre pieces at BEML Stall. It is built to take off and land autonomously also in poor weather conditions. It can fly continuously for 15 hours and has a 200 kms radio range. This UAV can be used for surveillance, monitoring, border patrolling and law enforcement. Primaco UAV is planned to be built in India in Collaboration with Primaco, Czech Republic.

### Tactical Unmanned Aerial Vehicle

Also on display was the 25 kg Class Tactical UAV being developed indigenously in collaboration with Indian Institute of Technology, Kanpur. The UAV is intended to carry versatile payloads of 3.0 kg, such as day & night cameras. It can take off and land in short runways, fly continuously for 8 hours and has 50 kms radio range.



*Tactical UAV*

## Mechanical Minefield Marking Equipment by BEML - (MMME – MKII)

An 'Atmanirbharta' Product

**B**EML rolled out the first prototype of Mechanical Minefield Marking Equipment Mk-II, built on BEML TATRA 6x6 an 'Atmanirbharta' product, developed through TOT from R&D Engineers, DRDO.

The virtual roll out was performed in the presence of Shri M V Rajasekar, CMD, BEML and Shri V. V. Parliker, Director, R&D (Engrs), DRDO. Also present were Shri Kiran Jadhav, CMD Accurate Group, other valued partners from Dynalog (India) Ltd, Electro-pneumatics & Hydraulics (I) Pvt Ltd and Adroit System Pvt Ltd and BEML team headed by Shri AK Srivastav, Director Defence.

BEML signed LAToT during the 'Bandhan' event in presence of Hon'ble Raksha Mantri during DEFEXPO 2020 and is executing the project by partnering with number of MSMEs.

Mechanical Minefield Marking Equipment MK-II developed by R&DE (Engineers) would greatly benefit Indian army to mark/fence minefields. The MK II is designed for marking



the mine fields at faster rate, semi-automatically with minimal human intervention.

The equipment is capable of marking/fencing at a minimum rate of 1.2 km/hr with inter-picket spacing of 15 m. The system has capability to place the pickets at 10 – 35 meters spacing in the step of 5 m. The picket can be driven to a maximum depth of 450 mm by this system.

MMME Mk-II system is designed to operate in plains of Punjab, as well as semi-desert &

desert of Rajasthan, in all weather conditions. The system can store 500 numbers of pickets and polypropylene rope of 15 km in length.

The main sub systems which are to be integrated on to the vehicle are Carrier vehicle, Mechanical sub system, Pneumatic sub system, Electrical sub system and Electronic sub system with selected sub-vendors. Sourcing of subsystem from industries established during development phase is being followed by BEML. The superstructure is being built by sub-vendors and supplying to Accurate Group for integration onto BEML HMV.

On this occasion, Shri Rajashekar said, "We are proud to be a partner with this project in our quest to achieve 'Atmanirbharta'. The equipment will greatly benefit the Indian Army during operations. I am sure that this project would be the harbinger for many more projects to come."

BEML is expected to receive the orders of more than 55 systems from MoD after the successful trial evaluation.





## NCL Nigahi Project gets BEML BH205E Dump Truck 'Under Atmanirbharta Mission'



Shri Jai Prakash Dwivedi, GM, NCL, receiving the Dump Truck

**B**EML successfully commissioned the BH205E – 190 Ton Rear Dump Truck at Northern Coal Fields (NCL) coinciding with Company's 58<sup>th</sup> Foundation Day, May 11<sup>th</sup>, 2021. At a function held at Nigahi Project, NCL, Singrauli Shri Jai Prakash Dwivedi, General Manger, received

the Dump Truck. The electric Drive truck is India's Largest Indigenous Atmanirbharta Dumper, source of great pride for BEML & its R&D, Production and Marketing team, This is the 2<sup>nd</sup> Dump Truck in line with supply of 8 no on trial order basis.

The BH205E Has a high power to weight ratio gives ample reserve power for increase engine life. Its major merit are higher volumetric capacity and a low loading height ensured higher productivity.

The Demand for larger Mining trucks in India is increasing rapidly, especially coal over burden haulage, as the industry looks to efficiency. BEML is expecting more order of this in the years to come for large scale mining operations.

It may be recalled that BEML already handed over India's first dump truck which is individually designed, developed and produced by BEML. It was commissioned during 2018 December. The Truck is already crossed 10,000 hours and availability of the equipment is around 86 %.



State-of-the-Art BH205E Dump Truck

## BE1800D Excavator to CIL

BE1800D Hydraulic Excavator Diesel version in 180 Ton Class of Excavator was indigenously designed & developed by BEML for the first time in the country under 'Aatmanirbhar Bharat' was handed over to Shri Binay Dayal, Director (Technical), Coal India Ltd at KGF Plant recently.



BE1800D Hydraulic Excavator to CIL



BE1800D Excavator



## BEML @ rescue & relief operations

**B**EML's BD50 Dozers demonstrated its usefulness in search, rescue and relief operations to help the people in distress at the site of the recent glacier burst at the Tapovan Hydel Project tunnel in Uttarakhand's Chamoli district.

Designed and developed by BEML's in-house

R&D team, BD50 Dozer is truly Aatmanirbhar product. These Dozers are fitted with 90 HP Engine and Power Angling & tilting blade.

These Dozers were also supplied to various regiments of the Indian Army and government agencies which are presently working at ambient temperature of -20

degree to +55 degree and at an altitude of 3500 mt. above MSL.

It may be recalled that BEML Dozers are in operations at strategic border locations such as Leh, Kargil, Tawang Ghati, Arunachal Pradesh and Karponang in Sikkim.



*BEML Dozers working during rescue operations at Uttarkhand*

## Orders from Cameroon & Bangladesh

**NEW ORDER**

**B**EML bagged orders to supply construction equipment to Cameroon and Bangladesh.

The order for Cameroon has been received from Ministry of Economy, Planning & Regional Development (MOEPRD), Government of Cameroon for supply of 71 units of construction equipment, consisting

of Bulldozers, Excavators, Wheel Loaders, Motor Graders and Compactors for Cassava Farm Projects.

The order for Bangladesh is from Ministry of Roads & Highways Department, Government of Bangladesh for supply of construction equipment consisting of Wheel Dozer, Repair

and Maintenance of Road and Infrastructure projects in Bangladesh.

Valuing at around US\$ 23 million, these equipment will be having more than 90% indigenous content and will be manufactured at BEML's KGF and Mysore Plants, signifying the true spirit of 'Atmanirbhar Bharat'.



BG605I Motor Grader



BL30-1 Wheel Loader

## 75<sup>th</sup> India's Independence Anniversary Celebration

**A**s part of commemoration of 75 years of India's independence under 'Aatmanirbhar Bharat' theme, BEML took several activities to highlight the contribution made on self-reliance from 2<sup>nd</sup>-08<sup>th</sup> April, 2021.

Shri Raj Kumar, Secretary, Defence Production, GoI, launched 'BEML Product Visualisation' brochure as a part of India 75<sup>th</sup> celebrations. He lauded BEML's Management and Industrial Designed Centre (IDC) for their efforts in highlighting the company's achievements.

BEML's contribution under CSR- energy conservation a documentary film was released. With a theme of - 'Go Green', the film show cased BEML's windmill and solar power plant projects to support 'National Energy Mission' of GoI.

Lecture programmes were organised on the theme 'Skill requirements for Trade Apprentices & how it will benefit them and 'Entrepreneurship opportunities for the new generation talent under 'Atmanirbhar Bharat'

by external faculty from RDAT & BoAT (SR).

Webinars were conducted for MSME vendors on 'Indigenisation & Quality improvement' in the supply chain at all its units.

BEML felicitated skilled competition with pre-defined problems and task by Trade Apprentices groups. Debate, slogan, extempore competition on 'Aatmanirbhar Bharat' by various Trade Apprentices were also held.

A documentary on 'BEML's Capability and Contribution towards India's economic growth by launching Aatmanirbhar products' was released.

BEML also published an online Coffee Table Book – 'The Journey of BEML since 1964' highlighting the company's contribution towards a self-reliant India.



Shri Raj Kumar, IAS, Secretary, Defence Production, GoI, releasing book on 'BEML Product Visualisation'

This was uploaded on website and other social media platforms. (can be viewed –[www.bemlindia.in](http://www.bemlindia.in))

### INITIATIVES

## Oxygen Generating Units by BEML

**B**EML has always been at the forefront when it comes to dealing with national crisis. The Covid-19 pandemic has adversely affected every sphere of life. In the wake of this 2<sup>nd</sup> wave of Covid pandemic and to mitigate the oxygen shortages in the country for Covid patients, BEML has successfully started manufacturing 960 LPM Medical Oxygen Plants at its KGF complex in record time under a ToT agreement with M/s. Defence Bio-Engineering Electro Medical Laboratory (DEBEL), Bengaluru under DRDO.

The first set of Medical Oxygen Plant has been rolled out and successfully generating Medical Oxygen at Koppal Institute of Medical Sciences, Koppal, Karnataka. BEML has received orders for 100 nos. from M/s DEBEL in May 21, under 'PM Cares' fund and the same is expected to be supplied by end July 2021.

In co-ordination with District Level Medical Authorities, BEML is also establishing a 960 LPM Capacity Medical Oxygen Plant in one of the designated hospitals in Karnataka, under CSR.

### Initiatives to Fight Covid

BEML is making dedicated efforts to extend all possible assistance to the Govt. bodies, Medical units and front-line workers apart from taking care of employees and their families in combating this pandemic. The Company contributed Rs.50 lakhs to DRDO towards opening of a 500 bedded Hospital for Covid Patients.

To provide immediate medical attention, the Company has set up COVID Care Centers at its KGF and Bangalore Complexes. Fever Clinic also been established for examining the suspected COVID cases at KGF Complex.

To boost the government's effort in vaccination, BEML has conducted Vaccination camps at its Complexes for the employees, their dependent family members, retired employees, contract workers and others.

Moreover, to contain the spreading of the virus, BEML has also undertaken various preventive



measures on war footing with prime focus on the health and safety of the employees. Various initiatives such as distribution of Food, medicines, masks, food provisions etc. and massive awareness campaign are organized with the involvement of stake holders and local authorities to demonstrate its commitment towards employees and local public.

BEML has not only stood strongly to fight against the pandemic but also extended support to the government during this difficult situation.