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25

TWENTY FIFTH REPORT

COMMITTEE ON PUBLIC UNDERTAKINGS

(2007 - 2008)

(FOURTEENTH LOK SABHA)

PERFORMANCE OF ENGINE DIVISION OF BHARAT EARTH MOVERS LIMITED

MINISTRY OF DEFENCE
DEPARTMENT OF DEFENCE PRODUCTION

[Based on C&AG Report No. 9 (Commercial) of 2007]

Presented to Lok Sabha on 5.03.2008

Laid in Rajya Sabha on 5.03.2008

LOK SABHA SECRETARIAT

NEW DELHI

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(2007-2008)

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INTRODUCTION

1. I, the Chairman, Committee on Public Undertakings having been authorized by the Committee to present the Report on their behalf, present this Twenty Fifth Report on Bharat Earth Movers Limited.

2. The Committee on Public Undertakings (2007-08) took evidence of the representatives of BEML on 11.10.2007. The Committee on Public Undertakings (2007-08) took evidence of the representatives of the Ministry of Defence on 26.11.2007.

3. The Committee on Public Undertakings (2007-08) considered and adopted the Report at their sitting held on 27th February, 2008.

4. The Committee wish to express their thanks to the Ministry of Defence and Bharat Earth Movers Limited for placing before them the material and information they wanted in connection with examination of the subject. They also wish to thank in particular the representatives of the Ministry of Defence and Bharat Earth Movers Limited who gave evidence and placed their considered views before the Committee.

5. The Committee also place on record their appreciation for the assistance rendered by the officials of Comptroller & Auditor General of India. They would also like to place on record their sense of deep appreciation for the invaluable assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

6. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in Part-II of the Report.

New Delhi
27th February, 2008
8th Phalguna, 1929 (S)

RUPCHAND PAL
Chairman
Committee On Public Undertakings

CHAPTER- I

INTRODUCTORY

1.1 BEML, established in 1964, is a multi-technology Company offering high-quality products for diverse sectors of economy such as coal, mining, steel, cement, power, irrigation, construction, road building, defence and railways. In last four decades, it has come to the forefront of heavy engineering industry and established an undisputed leadership in earthmoving industry. The Company's manufacturing facilities are certified by ISO 9000 recognition. BEML's nationwide network of Marketing offices enables buyers with ready access to the wide range of products and services. Service centers and parts depots provide total equipment care and rehabilitation services. Over 38 countries, across the globe in Asia, Africa, Europe, Latin America and the Middle East use BEML machines successfully. Product range of BEML is divided into four main heads. They are:

a) **Mining & Construction**

For deployment in surface mining projects and construction projects, BEML produces machines such as Electric Shovels, Hydraulic Excavators, Bulldozers, Wheel Loaders, Wheel Dozers, Dump Trucks, Motor Graders, Pipe Layers and Tyre Handlers. Besides, Giant Walking Draglines for cost-effective operations in the open cast mines are manufactured. BEML also diversified into underground mining with products such as Side Discharge Loader, Load Haul Dumper etc.

b) **Defence Equipments**

BEML's multi-role vehicles and transportation trailers have found total acceptance with Defence Services. The Company is manufacturing entire range of value-added Tatra vehicles which are robust and suitable for operations in all terrain. These include Crash Fire Tender, Bridge Layer, Field Artillery Tractor, Medium / Heavy Recovery Vehicles and Pontoon Mainstream Bridge System. BEML also supplies Aircraft Towing Tractors, Engineering Mine Ploughs, Armoured Recovery Vehicles and Weapon Loading Equipment.

c) **Railway Products**

One of the recent innovations in the rail sector has been the manufacture and supply of hi-tech stainless steel metro coaches to DMRC. Other products include Integral Rail Coaches, Over head inspection Cars, Track Laying Equipment, Broad gauge Rail Bus, Treasury Vans and Spoil Disposal units. It also offers Electrical Multiple Units [EMU] for deployment in suburban railway services. Plans are afoot to manufacture innovative Sky-bus.

c) **Other Products**

The Company manufactures heavy-duty diesel engines, Diesel Generator Sets and Hydraulic aggregates. BEML has entered into strategic alliances with International partners for several new products which include Multi-Utility Armoured Vehicles, Mine Laying Vehicle, Longwall Mining System, tunneling equipment, Mine Protected Vehicle, Surface Miner etc.

1.2 In order to meet the requirement of engines for the production of Earth Moving (EM) equipment, the Government accorded approval in 1988 for the establishment of facilities for the manufacture of engines at the Mysore Complex of Bharat Earth Movers Limited (Company). The project was conceived with technical collaboration of Komatsu Limited, Japan. The first phase of the project was commissioned in April 1991 and second phase (with establishment of Flexible Manufacture System) in March 1998. The gross block (Fixed Assets) of the project as on 31 March 2006 stood at Rs.72.44 crore and the net block at Rs.16.81 crore. The project envisaged manufacture of 2400 engines in the sixth year of commencement of production.

1.3 When asked about the salient features of the agreement with Komatsu Limited including making of investments and sharing of revenue and the role played by the Japanese Company towards technical performance of the Engine Division, the Committee were informed that Technical Collaboration agreement

calls for transfer of technology at a cost in terms of technical know how fees and royalty and does not involve in any arrangements for investment and sharing of revenue. During the period of agreement, they have helped Engine Division in absorbing the technology. Collaboration agreement ended in 1998.

CHAPTER-II

ACHIEVEMENT OF OBJECTIVES

2.1 As per para 3.3 of the Audit Report, the Project Report of 1983 envisaged the setting up of the Engine Division to satisfy the demand for captive consumption and to overcome customers' dissatisfaction with engines being used in the Company's equipment due to:

(i) Poor engine quality resulting in high down time of the Company's equipment;

(ii) Poor performance, reliability and life of engines;

(iii) Non-availability of engine spare parts in time;

(iv) Poor after sales service of engines;

(v) Diversity in product line, such as diesel engine sets, compressors etc.

Main reasons

According to the Company the main reasons which compelled it to establish its own Engine Division were :-

- Backward integration
- Value addition
- Improving Equipment performance and Value to Customer.
- Reducing dependence on external sources including collaborators for critical component of the equipments of BEML like engine.
- Saving Foreign Exchange.
- Redeployment of trained and surplus manpower from other divisions.
- Improving bottom-line for the Company as a whole.
- Emerge as a key player in Engines so as to hold their prices which otherwise was being dictated by a few suppliers.
- Helps BEML to diversify in product oriented line;
- Assured market by way of captive utility;
- Full Control over spares and after sales service;
- Increased profit margin in spares market;

I. Objectives sought to be achieved

2.2 When asked about the objectives sought to be achieved by setting up of the separate Engine Division and what has been the extent of achievement of the envisaged objectives, the BEML in their written reply submitted :-

> "For the manufacture of Diesel Engines following objectives were envisaged:
>
> 1. Fit engine suitable for mining & construction equipments;
>
> 2.Provide the Company with higher technological base;
>
> 3. Sell engines for other applications like Diesel Generator sets.
>
> Above objectives as envisaged have been finally achieved. The Company has successfully fitted the engines not only on construction equipment but also based on the technology made available under the Collaboration equipment diversified into Mining equipments for open-cast mining. The Company has also endeavoured to develop and sell engines for other applications like Diesel Generator sets. Engine Division satisfies the demand for captive consumption of engines of 100 HP to 550 HP for earth moving equipment which were earlier sourced from other engine manufacturers."

2.3 On being asked about the type of engines being used by the BEML for their earth moving equipment prior to establishment of Engine Division and the shortcomings/deficiencies which were observed in the engines procured by the Company from other sources for its earth moving equipments, the Company replied as under:-

> "Before establishment of Engine Division, BEML were using Engines procuring mainly from Cummins, Komatsu and Ashok Leyland.
>
> Shortcomings/deficiencies observed in the engines procured by the Company from other sources for its earth-moving equipments **(**that were encountered by the customers**)** were :

- Poor Engine quality resulting in high down time of BEML equipments;
- Poor performance, reliability and life of engines;
- Non-availability of engine spare parts in time;
- Poor after sales service of engines.

- Exploitation of price by local engine manufacturers making BEML products non-competitive
- Performance of some of the BEML products like Dozers were of high standards only with these Komatsu engines. To keep up performance of products importation was only route with high input cost.

With the use of in-house produced engines, as reported by Audit, expenditure on warranty showed a decreasing trend even though the number of engines sold increased indicating better performance of BEML Engines. Further, the engine performance analysis assessed through customer satisfaction survey by getting feedback from customers relating to commissioning, maintenance, fuel and other systems, cooling systems, oil/fuel consumption etc., revealed satisfactory results. The trend analysis obtained for the years 2003-04 to 2004-05 showed the performance rating in respect of BEML Engines on 1 to 10 scale ranged between 7 to 9.
Though the sale of engines increased by 300% the major complaints reduced by 30% over the period 2002-03 to 2005-06. Thus, the performance of BEML Engines improved significantly not only over the engines procured by the Company from other sources but also over the engines of BEML over a period covered in audit."

2.4 Regarding commencement of production, the Company informed that the Engine Division started manufacturing engines from 1991 out of SKD received from M/s.Komatsu, Japan. With phased indigenization program, as on 31st March 2006, Engine Division has achieved over 90% indigenisation.

2.5 While observing that the objective of establishing the Engine Division such as avoiding competitor's engines in BEML equipments since the competitors engines were having problems like poor quality, poor performance, non-reliability, high down time, non-availability of spares and poor after sales services etc. was not fully achieved since the Company is using / offering Cummins Engines even where the Company has its own capabilities, the Company was asked to state the reasons for still encouraging competitor engines. In reply, the Company inter-alia stated:-

"BEML acquired technology from M/s Komatsu for four series engines. However, the world over the earth moving equipment manufacturers are

not producing the entire range of engines used by them for their OEM equipment. However, they either produce certain range of equipments having the volume or tie-up with those manufacturing engines for long term supplies. Further, they procure the remaining range of Engines from various customers, many a times more than one manufacturer to ensure continuity in supply and not solely dependant on a given brand of manufacturers. As regards Spares for engine, there are different types of practices whereby either the OEM Manufacturers buy the spares and sell to customers or the Engine Manufacturers themselves market and sell entire engine to their customers, seizing the entire profit for themselves. However, there are companies like Cummins, USA and MTU who are completely in the business of engine alone perhaps and manufacture and almost the entire engines applicable to Earth Moving and other applications including Defence.

Following the above said models, BEML also entered into manufacture of engines to exclusively use their captive consumption with four series engines obtained from M/s. Komatsu, Japan and the remaining Engines have been in the past procured from other suppliers including Cummins, Ashok Leyland, Kirloskar & MTU. However, BEML has been making efforts through their in-house R&D to upgrade their engines or to bring in certain modifications and technology updation to increase the engine application to various other products being diversified by BEML to the extent possible, which has, of course, helped BEML to increase its volume of Engine production along with spares and to achieve breakeven and profit of Engine Division.

In fact, BEML has developed Four-Cylinder Engines from Six Cylinder Engines using the technology of Komatsu and trying to apply the Engine for lower-end equipments such as BE-71, BL-9H and the volume is expected to be around 1000 numbers in another 2/3 years.

In a nut-shell, in line with the global practices adopted not only by EM Equipment manufacturers, but also by other businesses as well, it is deemed fit that, it is not prudent and not business-wise viable to manufacture the entire range of engines by investing in Technology fee & Royalty and therefore it is advisable to restrict to certain range of engines where volume is continuously obtained for the Engines and develop the spares and services to sustain the market and business on a long term basis. It is thus technologically and operationally not advisable to diversify into entire range of Engines by incurring not only in technology but also in infrastructure substantially, as our main business is not manufacture & market the engine as core business."

2.6 Giving their response regarding overcoming dissatisfaction of customers' on account of poor performance, non-availability of spare parts, reliability of life of

engines etc., in respect of other make engines used in the equipments manufactured by BEML,is ensured, the Company submitted:-

> "This was the case 15 years back when the division was started. The setting up of BEML Engine Division triggered improvement in the engines of other manufacturer. In fact their performance has improved steadily over the years. Also, some of the other engine suppliers like Cummins have improved their service net works and other related systems to over come the issues relating to poor performance, non-availability of spares and reliability of life of engines. The customers like Coal India Ltd. prefer these engines over BEML engines. However, customers are being persuaded to accept BEML engines in case of BH 35-2 and BH 50M dumpers to obtain full satisfaction of the customers.
>
> The technology of BEML Engines as compared to the Global competitors including Cummins & MTU is definitely not advanced as BEML still has to catch up with the advanced technologies including the Electronic Fuel Pump (FIP), Engine Monitoring system and other advancement for improving efficiency of the Engine as well as fuel consumption and also meet the Bharat-II and Euro-II standards. The customers including Coal India Ltd. and the small contractors in the contract segment prefer to go for equipments with fuel efficient engine including Electronic applications and therefore even if BEML offers its engine, certain customers do not approve of and prefer such engines and would like BEML to go in for supply of the equipment with competitors engine. However, BEML is able to manage to maintain about 70-80 percent of Four-series Engines applicable to their OEM and sustain market share and service and part support. BEML is also now working with global suppliers for increasing fuel efficiency through FIP application, etc., and to achieve fuel efficiency and hope to increase volume of engines and market share of equipments having application of the Four-series engines manufactured by BEML."

2.7 When asked about the percentage utilization of Company's own engines vis-à-vis the engines of other makes in overall equipment manufactured by BEML and why this percentage utilization cannot be achieved as 100% so as to make the Company totally self reliant in respect of engines and giving a boost to Engine Division in meeting its objectives, the Company stated:

> " The equipment manufactured by BEML fall in following categories:

a. **Equipment originally with Komatsu engine**- These are manufactured 100% with BEML engine only;

b. Equipment originally with Cummins Engine falling within the range of Engine Division technology: BEML engines are engineered on these equipment and after field trials, percentage of BEML engines used on these equipment is increased gradually. Some equipments like BD 50, BD 80, BG 605 are being fitted with BEML engine only. Equipment like BH 35-2 and BH 50M are undergoing field trials with BEML engines;

Equipment originally with other make of engines beyond range of Engine Division technology: BEML engines cannot be engineered on these equipment as such BEML has to produce these equipment with engines other than BEML. Further, the very objective of establishment of Engine Division is to maximize application of BEML engine and make it viable operationally justifying the investment. Now from 2006-07 onwards, Engine Division has made profits and will continue to make profits with additional profits from Spares and remanufacturing of engines. Hence, the objective is achieved and BEML will continue increasing the volumes. "

CHAPTER-III

PRODUCTION PERFORMANCE INCLUDING UNDER-UTILISATION OF INSTALLED CAPACITY

3.1 According to para 3.7 of the Audit Report, the original project report had prescribed the production capacity of the plant as 2400 engines (4 bore sizes) per year with man power of 1500 and with the plant working in three shifts. The manpower strength of the Division as on 31 March 2006 stood at 263 (101 officers, 88 direct employees and 74 indirect employees). The Division could not achieve the envisaged capacity. The average engine production per year during the period 2000-01 to 2005-06 stood at only 356 engines.

I. Production capacity

3.2 Audit in para 3.7.1.1 has observed that according to the Project Report, the Engine Division was expected to manufacture 2400 engines of varying bore size category per year. However, since the machining facility for Cylinder Blocks was not enhanced beyond 1500, the installed capacity has been adopted as 1500 engines per year. In terms of installed capacity of the Engine division, the utilization ranged from 14 percent in 2000-01 to 42 percent in 2005-06. In this regard, giving a brief history, the BEML in their written reply dated 22nd October, 2007, submitted:-

(1) The project envisaged manufacture of 2400 Engines (of four bore sizes) in the sixth year of commencement of production with manpower of 1500 employees and the plant working in three shifts

(2) The phase-I of the project was commissioned in the year 1991 with importation of Camshaft and Castings and Forgings from collaborators.

(3) Due to severe foreign exchange constraints faced subsequently to the sanction of the project, the procurement of flexible machining system was restricted to a capacity of 1500 Engines, only with manpower of 263 people, as against the projected requirement of 1500 employees in the project report under Phase-II.

(4) Since the machining facility for cylinder blocks was not enhanced beyond 1500 Nos. the installed capacity was pegged below 1500 Engines per annum. Under Phase-III, the capacity of the Division was re-assessed as

at 1100 Nos. 140 Bore equivalent Engines, but adequate Manpower and corresponding outsourcing was done.

3.3 On the observations of the Audit that the projections made in the project report were shown on the higher side vis-à-vis the actual demand, the Company replied as under:-

> "Projection of demand for engines in DPR was based on the anticipated growth in the production of Coal, Hydro Electric power, irrigation projects etc., which on a conservative basis taken at 12% P.A. Accordingly and based on the 2690 equipments to be manufactured by 1991-92 from 970 produced in the base year of 1981-82 as well as the possibility of direct sale in the market the production of BEML engines was projected at 2400 engines. This requirement of production capacity from BEML coupled with the production capacity of Hindustan Motors was expected to fill the shortfall in the anticipated demand of 13,000 P.A. by 1984-85 as indicated by the working group on the machine building industry. Further, the only manufacturer of engines used in construction equipment at that point of time was Kirloskar Cummins and it was anticipated that the requirement justified establishment of manufacturing facilities at BEML. It may not be correct for audit to state that the demand was projected on the higher side in the DPR considering the above as well as the slump in the economy caused by general recession and tight financial conditions which could not be anticipated at the time of DPR."

3.4 Regarding the actual manufacturing capacity of the engine division of the Company and whether this capacity was fully utilized, the Committee were informed as under:-

> "The capacity of the plant has since been reassessed and the same has been arrived at 1100 equivalent engines. However, since, demand/market share of BEML for EM equipment where BEML engines are applicable has not gone up to 1100 nos, on account of various reasons including but not limited to opening up of Indian economy whereby number of market players increased the level of production of engines has been restricted to the requirement for captive consumption only [708 in 2006-07]. It is anticipated that the demand for BEML Engines which have been established as to performance in the market will go up significantly considering the strategies of the company to address the changes in the market for earth moving equipment especially in the areas of Contract mining."

3.5 About the installed capacity of the Plant and rated / estimated capacity and its utilization, the Committee were informed as under:-

> "The objective of Engine Division was to manufacture 2400 Engines with a Manpower strength of 1500 at phase-V level. As per performance levels of 2006-07 Division has achieved Phase-II level with production of 708 Engines with Manpower strength of 286. Currently, the capacity of the Division is limited by the capacity of FMS used for Cyl. Block machining . The Capacity of FMS is limited to around 700 Engines on 2 shift basis and 1100 Engines (equivalent of 140 series engines) on 3 shift basis at 90% efficiency. The division has set a target to achieve about 1000 Engines during 2007-2008 with increased outsourcing. If BEML has to produce 2400 Nos. of Engine per year, we need to have the following additional facilities :
>
> (1) FMS Units - 2 nos. : Rs. 45 crores
> (2) General purpose and CNC machines : Rs. 15 crores
>
> The above facilities will incur a capital expenditure of Rs. 60 crores.
> Besides the above, additional man power of 1200 is required to reach the annual production level of 2400 engines with the above capacity addition, the rated and estimated capacity may be achieved provided there is consistent demand for 2400 engines per Annum."

3.6 On being asked as to how the Company would justify the installed capacity of only 1500 engines and subsequently estimated to 1100 engines whereas the facility was initially created to accommodate production of 2400 Engines and how the additional Land and Buildings were being utilized, the Committee were informed as under:-.

> **"**Initially Land and building has been created for 2400 engines. Machineries has been restricted to 1500 engines which has now been reassessed to 1100. Additional land and building available at Engine Division is being utilized for manufacture of Tatra equipment to the tune of 300 trucks with VoP of around Rs.150 crore. **"**

II. <u>Under-utilization of the installed capacity</u>

3.7 The audit has pointed out that the company did not utilize its engines in all its equipment manufactured resulting in under utilization of the manufacturing capacity of engines. The Company had been purchasing Cummins engines and utilizing the same for manufacture of equipment. Except in 2004-05, the number of equipment fitted with the company's engine was less than 50% of the total

number of equipment manufactured. In spite of the availability of capacity in the Engine Division, the Company did not use its engines in all its equipment manufactured. An audit analysis in this regard revealed that fitting of the Company's engines in the equipment supplied to the major customers viz., Coal India Limited and its subsidiaries ranged between 15 and 45 percent only. In this regard the comments of the Company were as under:-

> "The Company is not in agreement with the observations of audit which are not tenable considering the number of equipments not falling under the range of engines manufactured by Engine division. Considering the equipments falling under the range of BEML engines the percentage of BEML engines fitted on the equipment is as under (Annexure-B) which are in the range of 68 to 100% in case of Mysore Complex and 88 to 100% in case of KGF Complex which are much higher than the 50% reported in audit.:-

ANNEXURE-B

NUMBER OF ENGINES PRODUCED AND UTILIZED				
SL NO	**YEAR**	**NO.OF ENGINES PRODUCED**	**NO.OF ENGINES UTILIZED**	**DG ENGINES**
1	2005-06	625	623	2
2	2004-05	480	479	1
3	2003-04	331	272	59
4	2002-03	217	216	1
5	2002-03	215	215	0

> The company had implemented the decision to use only BEML Engines wherever technically feasible and commercially viable even during the period covered in audit as evidenced by 100% in four out of six years in case of Mysore Complex and two out of six years in case of KGF Complex.
>
> The original project when sanctioned in 1988, the capacity of the plant was estimated at 2400 Engines based on the demand and supply figures which were available from the working group on consumer goods and light engineering industries set up for the 7th year plan of

1985-1990. However, due to severe foreign exchange constraints faced subsequently to the sanction of the project, the procurement of FMS was restricted to a capacity of 1500 engines only. Even though the building and other infrastructure facilities are available for 1500 engines, employment of manpower was restricted based on the production envisaged. Accordingly, only 263 people were engaged as against 1500 (subsequently revised to 1050) for the current level of production. The Engines manufactured are presently only for captive consumption in earth moving equipment wherever direct application of these engines are possible. Hence, depending upon the requirement of EM equipment, the production was planned and achieved. Hence, full production level of 1500 was not planned till date. The capacity of the plant has since been reassessed and the same has been arrived at 1100 equivalent engines.

However, since, demand/market share of BEML for EM equipment where beml engines are applicable has not gone up to 1100 Nos, the level of production of engines has been restricted to the requirement for captive consumption only. In case of EM equipment also, since, some of the equipment like Dumpers were originally engineered with Cummins Engines, the re-engineering of the same with BEML Engine took some time and hence the production of engines was not achieved to the level of available capacity. However, it may be seen that over a period of time the production of engine is showing an increasing trend and has gone up from 215 during 2000-01 to 708 during 2006-07."

3.8 Regarding expansion plans for increasing the production of Engines, the CMD of the Company during evidence before the Committee on 11 October, 2007, submitted:-

"I would like to submit that as far as we are concerned, we have gone in for diversification of engines, in addition to ARI, in defence application. We are supplying almost closer to about 500 to 600 heavy trucks in collaboration with M/s Tetra, Slovakia. They are willing to give technology transfer which we will take and produce for Euro Engines. We would be producing about 400 to 500 engines and the remaining one-third space we are going to increase the capacity and build that engine. Those engines will be exported in addition to fulfilling the Indian needs. Recently, we are working with another company for defence application. There are about 2600 machines working in the country in the T-72 tanks. The Army now wants to upgrade those engines from 678 HP to 1000 HP so that it can go faster. We have configured those engines in the T-72 engines. We have offered them on trial to the Army and if these are accepted, then we would be producing 2600 engines in another five years. We are going to produce

the assembled engines in the Mysore complex so that our entire capacity is going to increase and our turn over also will go up further."

III. Non-fitment of own Engines in BEML equipment

3.9 On the observation of the Audit that in some of the earth moving equipment, the Company itself was fitting Cummins engines instead of their own engine, the Company was asked to justify this in the light of having its own engine division. The reply of the Company was as under :-

"As earlier stated, Engine division was established to manufacture engines coming in the range of 100 HP to 550 HP which are suitable for use on equipment manufactured with Komatsu Collaboration like Dozers, Excavators, Loaders, Motor Graders etc Equipment for which engines of higher / lower HP required is being outsourced from Cummins and other engine manufacturers (Eg. BH-85, BH 100 etc) Dumpers were manufactured with American Collaboration and Cummins engines. Efforts have been made to develop engines of lower / higher capacity and succeeded in developing such engines. Engines so developed are being fitted in the EM equipment."

3.10 The above comments of the company were countered by the Audit by observing that in respect of BH50M (210M) the company has fitted one equipment with BEML engine in 2001-02 itself whereas the Company supplied only 4 equipments each with BEML engine during 2005-06 and 2006-07 respectively out of total 77 & 90 equipments supplied during those years. Similarly, in respect of BH35-2, the company successfully commissioned 4 equipments with BEML engines during 2003-04 itself. However, it is observed that out of 203 and 162 equipments supplied during 2005-06 and 2006-07, the company fitted only 2 & 16 equipments with BEML engines respectively. The Company was asked to offer their comments on the above observation of Audit. In their written reply, the Company stated:-

"the engine introduction involves:

- Design modification;
- Proto type development;
- Field trial;
- Corrective action;
- Small batch production;

- Component / Vendor development;
- Progressive ramping of and Mass production.

The above activities involve a time period of two to three years. Simultaneously, customer confidence building exercise and winning away the customer from user friendliness of competitor engine, spares bank of competitors engine with the customer is a time consuming process. However, BEML is not leaving any stone unturned towards achieving a higher percentage / share of business for BEML engines and all out efforts are made since 2003-04. Although in the past it was not done aggressively and whole-heartedly."

3.11 The Company was asked to explain the rationale behind fitment of Cummins engines in the BEML equipment and whether any market survey conducted prior to procurement of Engines from M/s. Cummins. In this regard, the detailed reply of the Company was as under:-

"BEML do carryout the market survey on Engine availability as any other product but in an informal way. In India, there are only few higher power Off Highway Equipment Engine manufacturers at present . BEML being a member of Indian Diesel Engine manufacturer's association, it has up-to date information about the other manufacturers. The major manufacturers are Cummins, BEML and Caterpillar. Since, Caterpillar is a major competitor, question of adopting its Engine does not arise. Two other major manufacture with reasonable service network are BEML and Cummins India Ltd., Engine is an integral part of an Equipment and it requires full integration with the vehicle. The performance of the Equipment is greatly dependant on the Engine. Engines having same power and overall specification do have different configuration, size, shape, weight, accessories like Radiators , coolers etc., and call for different pipes, mountings, coolers, and frame structures etc., Engines need to be coupled, aligned and synchronized with Transmissions for the equipment. Every Equipment with engine, transmission, coolers, pipes, electrical harness and engine management system is tested to prove its suitability, performance and durability. New Engine selection involves an elaborate procedure and necessitates design modifications in many components and assembly layouts. After assembly, the equipment is tested under simulated conditions and field trials, so as to confirm the suitability of the Engine and various performance parameters. Normally, these trials are carried out as a practice jointly by the Original Equipment Manufacturers, Engine Manufacturers and the Customer to validate the use of particular new engine. The selection processes and validation process can extend somewhere between six months to one year. This in turn involves a lot of efforts and huge cost**.** So, until and unless there is a major up-gradation and benefits in

terms of fuel efficiency or major advantage, the Original Equipment Manufacturer does not change the Engine make / source. This is the governing principle applicable from Aircraft to Automobiles. In addition to this, since Engine is the prime mover, it requires Service support from the Engine manufacturers at site for proper maintenance and systems. This carries weight during the selection process of Equipment. Cummins has been the original Engine supplier to almost all equipments of BEML, prior to start of Engine Division.

Normally, as per the Tendering System followed by Coal India Limited the time given for delivery of equipment is one month. Within this short period, it is not possible to tender out for a new Engine, validate and adopt for Equipment. Hence, only proven Engines are offered to the Customer. The following choice has been limited to Cummins / BEML engines :

Public Sector Undertaking including BEML follows similar purchase procedure viz.,

(a) Public tender for new product.

(b) Limited Tender among those already short listed for the given product or short-listed by low evaluation of capacity to supply the specific products or aggregates and

(c) Proprietary purchase from vendor identified, based on indepth analysis of product capability and after-sales-service.

We have followed the third method for the purpose of zeroing Cummins Engine, as such, specifications sought for by one of the Coal India Subsidiaries, aptly meets the specs of Cummins.

There have been instances where BEML has offered BEML Engines at lower cost than Cummins Engines, but Customer has preferred Cummins Engine. Reasons are such as (a) Commonality of Engine make with their existing fleet of Equipment (b) Cummins having long term arrangement with many customers for service and parts support, (c) stocking of spares at customer location and (d) familiarity of Engine operation & maintenance etc., and (e) any other reasons best known to the Customer.

Recently, M/s.NCL wanted to adopt MTU (Imported) Engines into 85 Ton Dumpers for better performance. BEML has integrated MTU Engines and joint validation process is going on at NCL. This has taken almost 10 months involving design, modifications, import, and procurement, of more than 150 items. Hence, it is customer who is the King deciding the Engine make for his equipment and not BEML.

In order to increase the share of BEML Engine on our products, the Company has successfully engineered BEML engine on products such as BH40, BH60, BH35-2, BH50M, BE 220, BE200, BE70 & BL9H. In addition to the above, the Engine Division has developed Diesel Generating Sets using BEML engine."

3.12 On being specifically asked whether Coal India Limited is specifying any specific brand of Engine or only Engine specification in the Notice Inviting Tender and if not, why BEML is quoting Cummins India Limited Engines in the Tender, the BEML replied as under:-

"Coal India Ltd. is not specifying any specific brand of Engine and is specifying the engine technical requirements in the equipment NIT, except in one case, where one of the Coal subsidiaries which tendered-out purchase of Dozers, specifically mentioning Cummins Engine. However, in the eligibility criteria, proven models only need to be offered and any change in the scope, Coal India Ltd., needs trials and performance evaluation and BEML Machine will be liable for rejections.

35 Ton and 50 Ton classes of Dumpers are manufactured by BEML from 1970s, which are originally designed by our collaborators with Cummins engine (initially LW taken over by Dressers and then by Komatsu). These Engines are having eligibility in Coal India tenders because of first introduction. We have engineered BEML engines on these equipment in the year 2002-04 and subsequently we have been offering BEML as well as Cummins engines. Now equipment with our engine are also eligible technically in Coal India tenders. Accordingly, Coal India has been considering both the engine options for purchase of equipment depending on commercial terms offered by BEML.

As explained above, even though the Customer is not specifying make of Engine (except in one case as above), Cummins is a world leader in Engines and is a Long Term performing supplier for suiting CIL specifications."

3.13 As per the audit, it has been stated by the Management that it took some time to re-engineer the earth moving equipment which were originally engineered with Cummins engines with the Company's own engines. Since the engine division of the Company was freshly established the Company was asked to justify the non-compatibility of engines manufactured by it with its own earth moving equipment and what advance planning was done in this regard while

switching over from Cummins engines to their own engines. The Company in their written reply stated as under :-

..

> "Originally, BEML had collaboration agreement with M/s.Komatsu to manufacture engines suitable for 7 applications [equipment] viz., BD 65, BE 300, BG 825, BE 650, BD 155, BD 355 and BE 1000. Later, five more applications viz, BL 200, BE 220, BG 605, BH 40 and BH70 were added to the agreement. Subsequently, application engineering was done by Engine division for other equipment like BH 35-2, BH 50M, BH 60 etc. and as at present, engine division is catering to the engine requirement of 30 equipments manufactured at both Mysore and KGF which were originally engineered with engines from Cummins.
>
> The company had to reengineer the equipments for BEML engines since the equipments were fitted with engines of other makes including Cummins engines. The switch-over from Cummins to BEML engines is a design and development process that is continuous and as such cannot be envisaged before implementation of the project or without being based on firm market requirements."

3.14 In the above context, the Company were asked to state about the steps which were taken by it during the last few years to modify/upgrade upon their engines to suit the equipment being manufactured and for avoiding under utilization of available capacity and the initiative taken towards the research and Development activities and the investments made thereupon. The reply of the Company was as under :-

> "As stated earlier, collaboration agreement with M/s.Komatsu was to manufacture engines for 12 applications. These engines were modified suitably by R&D of Engine division to match the other applications. With this, Engine division is able to cater to the engine requirement for 30 models of equipment manufactured by BEML. No further investment has been made for above application engineering made by R&D of Engine division."

3.15 The Company was asked to state about its major customers to whom the earth moving equipment is supplied and how many equipments so supplied were fitted with Company's own engines and how many with the others during

the last 5 years. The Company while stating that Coal India Limited is the major customer for BEML Earth Moving Equipment, furnished the information (Annexure –D) as under:-

ANNEXURE-D

MAJOR CUSTOMERS (SALES OF EQPT MADE DURING LAST 5 YEARS WITH BEML/OTHER ENGINE)

2002-2003						
SLNO	CUSTOMER	TOTAL EQPT	EQPT SOLD WITHIN PRODN RANGE OF ENGINE DIVN.	EQPT SOLD WITH BEML ENGINE	EQPT SOLD WITH OTHER ENGINE	%
1	COAL SECTOR	231	171	94	77	55%
2	DEFENCE	106	106	1	105	1%
3	STEEL CO,	27	27	10	17	37%
4	CEMENT CO.	6	5	4	1	80%
5	POWER	13	13	5	8	38%
6	OTHERS	155	141	115	26	82%
		538	463	229	234	

2003-2004						
1	COAL SECTOR	182	144	61	83	42%
2	DEFENCE	122	122	41	81	34%
3	STEEL CO,	67	67	17	50	25%
4	CEMENT CO.	10	9	7	2	78%
5	POWER	19	19	19	0	100%
6	OTHERS	159	142	128	14	90%
		559	503	273	230	

2004-2005						
1	COAL SECTOR	299	280	126	154	45%
2	DEFENCE	55	55	55	0	100%
3	STEEL CO,	25	25	7	18	28%
4	CEMENT CO.	24	23	9	14	39%
5	POWER	23	23	21	2	91%
6	OTHERS	324	297	258	39	87%
		750	703	476	227	

2005-06						
1	COAL SECTOR	471	426	144	282	34%

2	DEFENCE	36	36	35	1	97%
3	STEEL CO,	22	22	18	4	82%
4	CEMENT CO.	13	13	9	4	69%
5	POWER	21	20	18	2	90%
6	OTHERS	258	222	197	25	89%
		821	739	421	318	

2006-2007						
1	COAL SECTOR	329	271	119	152	44%
2	DEFENCE	136	136	136	0	100%
3	STEEL CO,	51	51	27	24	53%
4	CEMENT CO.	69	68	22	46	32%
5	POWER	40	39	39	0	100%
5	OTHERS	441	331	258	73	78%
		1066	896	601	295	

3.16 The Committee desired to know the justification of the Company to the observation of the audit that the Company itself was offering a competitor brand viz. Cummins engines as an alternative in preference to their own product thereby defeating the aim of establishment of Engine Division. In this regard, the response of the Company was as under:-

> "The company is not in agreement with the observations of audit to the extent that the offers of Cummins engines or BEML engines were made as per NIT Specifications with a view to get the order for equipments either with or without BEML Engines. This way, the company has increased the order booking for equipments rather than losing the order based on NIT Specifications or Customer preference for Cummins engines."

3.17 On being further probed by the Committee about the initiatives taken by the Company to remove the misconception in the minds of clients such as Coal India Limited and other mining customers that BEML engines are inferior to Cummins engines, since BEML itself was offering Cummins engines, the Company stated :-

> "As clarified hereinabove, BEML equipments were powered with engines of other makes before establishment of engine division of BEML. The Customer requirement for Cummins engines is on account of various reasons including standardization, operation, maintenance and replacement of equipments. This preference cannot be attributed to the inferior quality of BEML engines. As a matter of fact, the penetration of BEML engines in to the market share of Cummins is in evidence of the quality and performance of BEML engines."

3.18 To a pointed query whether the intervention of the Ministry of Defence was ever sought to take up this issue with the Ministry of Coal so as to impress upon the Coal Companies for fitment of BEML Engines in the equipment supplied to them , the Company stated:

> "CIL has preference for Cummins and reluctance for BEML Engines. On day-to-day basis, business issues between Coal companies and BEML are handled at BEML level only. BEML Management has taken up with the Chairman of Coal India and its subsidiaries regarding acceptance of Equipment with BEML Engines. Ministerial intervention has not been sought in these specific cases as it relates to marketing and competing for tender / orders which are routine."

3.19 To a pointed question as to whether any programmes have been proposed by the Company to replace Cummins engines with BEML whenever the EM equipments come for re-fitment, the Company submitted :-

> "Wherever possible, we are persuading customers for refitment with BEML engines for the equipment supplied earlier with Cummins engines. We have taken up fitment of BEML engines for BD50 and BD80 Dozers in respect of DGBR Orders".

3.20 According to Audit, with regard to Company's reply that the production and utilization of its engines was with reference to number of equipments falling under production range, the Chairman BEML had stated in the 238th Board meeting held on 22nd January 2003, that a policy decision had been taken to offer all the equipments with BEML engines effective from 1st April 2003 wherever engines manufactured were within the range of the equipment manufactured by the Company. In this connection audit observed that the company did not fit

BEML engines on equipments manufactured by them even though they were in their range of production but fitted engines of other makes. On being asked whether the Ministry are aware of the above decision of the Board taken on 22nd January 2003 and If so, whether any interventions has been made by the Ministry for ensuring implementation of the decision., the Ministry submitted that BEML has taken steps to implement the decision taken in the Board, however, certain deviations as reported in the Audit Report were made due to specific requirement of the users/customers. On the same issue, the reply of the Company was as under:-

> "From 2003-04 onwards, Management has, as a policy, decided to introduce BEML engines on all equipment falling within the range of engines manufactured by BEML. The said decision was implemented 100% wherever the engines manufactured by BEML matched the original engine exactly. In respect of equipments designed with Cummins engine by the collaborator of the equipment, the Cummins engines [BH 35-2 and 210M] were being used, as indicated in para 1(i), the development process is time consuming and in right earnest, the induction process is done progressively. In this area also, BEML R&D has engineered some of the engines wherever possible. For eg., BD 50,BD 80 and BG 605 equipments were fitted with Cummins engines and these were being supplied to Director General Border Roads (DGBR).
>
> Subsequently, BEML engines were engineered on these equipments and trials successfully completed at DGBR at various locations ranging from Himalaya to Rajasthan desert as per their procedure. After this, these equipments are being fitted with BEML engines only.
>
> Similarly, the field trials with Coal India Limited are under progress for BEML engines engineered on BH 35-2 and BH 50M dumpers where the equipment designer had designed the equipments with Cummins engine. After successful field trials, gradually,
>
> maximum number these equipments will also be manufactured with BEML engines only unless the customer including CIL is convinced of engine performance with fuel efficiency, they may not agree to switch totally to BEML engine. Part is now being supplied and will improve further in time."

3.21 In the above context , it was brought to the notice of the Committee by the audit that BEML submitted in June 2006 two separate response to one and the same tender No. 17 dt. 19-04-2006 of South Eastern Coal Fields, Bilaspur, for supply of ten 35-T dumpers. Strangely, though both letters bear the same number and date, one offer was to fit Cummins engines and the other offer to fit BEML engines. This provided evidence that the Chairman's assurance to the Board (January 2003) is being circumvented and the company still offers to fit Cummins engines in BEML equipment. This also confirms that the Company has not followed the statement made to its Board in January 2003 as narrated above. In this regard, the company responded:-

> "BH 35-2 (35-T) dumper was designed originally with Cummins engine by the designer. Subsequently, BEML has engineered the said equipment with BEML engine. As this is a new combination, as per Coal India norms, field trials are to be completed before bulk supplies. In view of this, had BEML offered to SECL equipment with BEML engine only, it would have got a trial order for few numbers only and there would have been a business loss even though proven model with Cummins engine was available to meet the tender requirement. As such BEML had to offer both the options.
>
> To meet competitor price range, a new value engineered version of BH 35-2 involving major structural changes of the equipment was introduced in 2006-07 which also extended the introduction of BEML engine mass production and stabilization period. Company has sincerely adhered to the commitment made by the Chairman to the Board of Directors."

3.22 Regarding strategies and programmes formulated by the Company to increase the production of viable models of engines instead of production and stacking engines of unviable model the Committee were informed that :-

> "Engines for all the equipments which are coming under the production range of Engine division has been re-engineered with BEML engine. This is evidenced by the increase in production quantity from 215 during 2000-01 to 708 during 2006-07. Division has stopped manufacturing unviable model of engines and the stock available at engine division relating to unviable models have been converted to viable model during 2006-07".

3.23 Regarding the steps taken and time frame fixed by the Company to re-engineer dumpers with BEML's engine, the Committee were informed that while the company has started supplying BH 35-2 Dumpers and BH 50M Dumpers with BEML engines during 2006-07 after successful field trial earlier, 85 Ton and above dumpers need engines which are beyond the range of technology available with Engine division.

IV. Marketing strategies and performance of BEML Engines

3.24 When asked whether any evaluation had been done regarding performance of BEML Engines and the feed backs received from the users of BEML Engines, and the remedial steps, if any, taken on the basis of feedback so received , the Company inter-alia stated as under:-

> "As reported in Audit, expenditure on warranty showed a decreasing trend even though the number of engines sold increased indicating better performance of BEML Engines. Further, the engine performance analysis assessed through customer satisfaction survey by getting feedback from customers relating to commissioning, maintenance, fuel and other systems, cooling systems, oil/fuel consumption etc., revealed satisfactory results. The trend analysis obtained for the years 2003-04 to 2004-05 showed the performance rating in respect of BEML Engines on 1 to 10 scale ranged between 7 and 9."

3.25 The Committee were also informed that performance rating is based on various parameters like delivery, initial commissioning, performance of engines during initial period, performance during entire warranty period, promptness in offering after sales service support, supply of spares etc. The rating is given by BEML team.

3.26 In view of the above reply, the Company was asked about the mechanism available with them to ascertain the customer's satisfaction and obtaining feed backs from the users. The Company stated as under :

> "Company has got regional and district offices at the door steps of customers providing after sales service in time. Local BEML marketing personnel interact on day-to-day basis and give feed back to head quarter regarding customers' satisfaction. The service reports regarding performance of equipment also carry customers' endorsements about

their feelings. Customers also write directly to Regional Manager / Head quarter regarding their needs/feelings. Periodical visits by senior official from head quarters to customer sites also generate feedback on customer feelings."

3.27 Regarding the efforts initiated by the company to impress upon the customers to accept BEML engines instead of Cummins engine, the Committee were informed that :-

"Special efforts are being put through various forums and levels for adoption of BEML engines into customers fleet being pursued on continuous basis.

Special drive is being made through re-inforcement service net work, Warranty spares supplies, storing of adequate spares close to customers are few actions already taken and continuous improvement is being pursued."

3.28 On being asked whether the feed-back so obtained has ever been utilized to further improve the performance of BEML engines, the Committee were informed that feedbacks obtained as above are examined periodically by cross-functional teams consisting of representatives from Design, Quality, Service and Production. Corrective action for improvement of performance of BEML engines is taken based on above interaction.

3.29 To a specific query about the efforts being made by the Engine division to increase the compatibility of BEML engines to suit present generation of earth moving equipment, the company in their written reply stated***:-***

"All out efforts are being made by engine division R&D to maintain the competitive edge of BEML engines by adopting to the contemporary requirement through:

- Development of High power density engine;
- Up gradation of ARAI, Pune to meet environmental norms requirement;
- Development of CRDI system for one range of engines.
- Develop electronic system to make electronic engines."

3.30 On the issue of marketing strategies being adopted to increase the market for BEML engines, it was stated that:-

"Company is contemplating to

- increase in supply of equipment with BEML engines;
- meet increase demand of float / recon engines;
- Spare engines for repowering the customer fleet;
- Diversify into Defence Engines, Gensets, Gas Engines and Spares.

These will create a demand for doubling the engine production to more than 2000 engines per annum by the year 2010 with additional capital expenditure."

V. Manpower Utilization

3.31 The committee desire to know about the manpower deployed during the last 5 years in the Engine division and the criteria followed in determining the same. The company in their written reply submitted as under:-

"The total man power for the last 5 years has been 283, 286, 279,270 & 272. As per project report, manpower required for manufacture of engines is 1500 employees. During the last five years, the actual production of engines ranges from 215 to 708 nos. with the manpower ranging from 270 to 286 which is well within the manpower envisaged in the project report. No fresh employment was made for engine division up to the year 2005-06 and was managed with the existing manpower strength there by increasing the manpower utilization."

3.32 On being asked as to whether the manpower so deployed is sufficient to carry out the work load or is there any under / over utilisation of the manpower, the Committee were informed as under:-.

"The man power deployed is sufficient to manufacture engines up to 700 nos. at increased level of off-loading and will be increased based on the increase in production plan. As at present, man power is being utilized to optimum level."

CHAPTER IV

Cost of Production and Financial Performance

I. High production cost

4.1 The audit in para 3.7.2 has observed that the Engine Division incurred loss every year. The loss of the Division during the year 2002-03 was Rs. 15.97 crore but came down to Rs. 4.40 crore in the year 2005-06. The progressive improvement in the financial results could be attributed to increase in the Volume of production (217 nos. in 2002-03 to 625 nos. in 2005-06). The manufacturing cost was higher mainly due to high cost of raw materials and components, under utilization of installed capacity and low volume of production for captive consumption. The Company was asked to give justification on the above – mentioned observation of the audit. Further keeping in view the Production cost of engine which is considerably high due to high cost of raw materials, it was asked to state the action taken by the Company to bring down the cost of procurement which will result in bringing down the cost of production. The Company in their written reply submitted :-

> "As stated in query, the loss at Engine Division has come down from Rs.15.97 crores during 2002-03 to Rs.4.40 crores during the year 2005-06. The profitability indicated is based on the Transfer price adopted by the Company. In this connection, it may please be noted that the transfer price for the engines produced by the Division was fixed based on prices of comparable models of engine available in the market at that time. Wherever prices were not available, prices were fixed considering Horse Power on pro rata basis. Prices so fixed are retained since 2000-2001. This was adopted as a strategy to impress upon the Division to reduce the Cost of production on a continuous basis."

II. Indigenisation

4.2 Further, the audit in para 3.7.2.3 has observed that even though the Engine Division achieved import substitution by indigenising certain portion of material and components, the material cost could not be brought down significantly as the division was unable to achieve economies comparable to

those of the multinational companies. The Company was not in a position to secure the most economic prices since the quantity of raw material procured was low and production was not commensurate with installed capacity. There was competitive Research and Development (R&D) in EM equipment and the related business being complex needed heavy investments. The Company was therefore asked to state about the constraints being faced in indigenisation of EM equipments and action taken by the Company to overcome them besides taking up the matter with the Board of Directors and the Administrative Ministry. In reply, the Company stated as under:-

"In spite of general inflation and other adverse market condition, the material cost has actually come down which is on account of the continuous indigenization and finding alternate sources:

	Material Cost (Rs. Lacs)			
Engine	**2001-02**	**2005-06**	**Reduction**	**% Reduction**
ATT	**4.01**	**2.43**	**1.58**	**39.40 %**
BE 220	**3.41**	**2.37**	**1.04**	**30.49 %**
BD 65	**6.49**	**5.47**	**1.02**	**15.71 %**
BD 80	**7.26**	**6.31**	**0.95**	**13.08 %**
BG 605	**6.40**	**5.80**	**0.60**	**9.37 %**
BG 825	**8.33**	**6.54**	**1.79**	**21.48 %**
BD 155	**10.26**	**8.98**	**1.28**	**12.47 %**
BD 355	**11.61**	**8.88**	**2.73**	**23.51 %**

It may be seen from the above that the reduction of material cost has been made in the range of 10% to 40% during the period from 2001 to 2006**.**

Further indigenization and development of alternate sources will bring down the material cost. With increase in the volume of engines produced, the overhead element in the cost of engines will come down there by resulting in the reduction of engine cost**.** Matter for additional capital expenditure towards additional machinery / overhead to improve productivity has been under favourable consideration of Board of Directors during 2007-08."

III. Cost reduction measures

4.3 Regarding reducing the cost of production, the audit in para 3.7.3.1 has observed that the Company made efforts to offload conventional process for cost saving activities related to turning, milling, drilling, boring, tapping, grinding and keyway slotting, etc. However, it was seen that offloading was less than 10 percent of the total purchases made during the last six years and such outsourcing had also resulted in non-utilisation of available capacity. In this context, the Company was asked about the steps taken to offload routine jobs and develop alternate sources and get the job done on economic rates. The reply of the Company was as under:-

> "As per the original project report the plant is established to manufacture only 7 critical components in-house and remaining components were to be bought out or obtained through off-loading. Accordingly, the off-loading activities are resorted to based on the production requirement for the component which cannot be machined in house. It is reiterated that the machines installed at Engine Division are dedicated to only seven critical components. If all the components, which are required to be off-loaded, are to be machined in-house, it would require huge capital investment and manpower. The present manufacturing trend is mainly an assembly plant and outsource as much as components, as possible, in view of the up gradation in the manufacturing technology of SSI and medium scale industries. It is further stated that value of off-loading purchase orders does not include material cost. Hence, comparison of the value of off-loading purchase orders with the total value of purchases is not on like to like basis."

4.4 On being asked as to why the Company is restricting its manufacturing capacity to captive consumption only and not promoting engine sale as a separate aggregate to increase the volume of production to achieve benefits of economies of sale, the Company submitted as under :-

"In addition to satisfying captive demand, Company had made efforts to produce engines for other applications viz.,

- Repowering of Euclid dumpers with BEML engines at Syria;
- Repowering PES 100 gensets with Indian Army with BEML engines;
- Repowering of MTU boat for defence with BEML engines.

> However with present spurt in demand for BEML equipment with BEML Engines will consume entire capacity of Engine Division for captive consumption during 2008-09. This will also achieve benefits of economies of scale. Further, it need to be mentioned that part of the Engine Division hangers are utilized for Tatra range of equipment and other defence equipment to optimize the Company's overall resources, Gas Engines, Gensets will be purely outside applications."

4.5 In view of the observation of Audit that the production costs of engines are considerably high mainly due to high cost of raw materials and low volume of production, the Company was asked about the action taken by them to increase the volume of production to bring down the unit cost of production. The response of the Company was as under :-

> "Cost impact due to lower volume demand for off-highway application engines will remain a concern. However, focusing in contractor segment equipments like BL 9H is likely to create larger volume demand on 4D-105 engine which will support higher volume. During 2003-04 Company has taken a decision to expand application of BEML engines on BEML equipment. This has resulted into increase in demand, which has been met with increased volume of production. With this, the engine production has gone up from 217 in 2002-03 to 708 during 2006-07.
>
> Further, we propose to produce 1,000 Nos. BE220 Hydraulic Excavators (current level of production 200) and BL9H Backhoe Loaders to 1,000 Nos. (current level of production 100) in next 2 to 3 years, which will help increasing the engine production beyond 2,400 Nos. including spares and re-manufactured engines, of course with application of capital expenditure (CAPEX)."

IV <u>Dependence on single supplier</u>

4.6 The audit in para 3.7.3.3 has further observed that the dependence on single source supplies for raw materials and components by the Division was high. Percentage of purchases made on single tender basis ranged between 30.1 and 59.2 percent. The procurement of materials and components on single tender basis resulted in denial of the benefits of competitive pricing with resultant higher cost. The Company was asked to offer their comments on this observation of audit besides stating the steps taken to develop alternative source of supply to

get a competitive price in procuring raw materials and components. The comments of the Company were as under:-

> "If number of items is considered instead of value of purchase order for the purpose of arriving at the percentage of purchase order placed on single tender, it would work out to 34% during 2005-06. It is may please be noted that

- the vendor development of alternate source is inhibited due to low volume;

- single tender is limited to the procurement of
  - Proprietary / performance related items;
  - Casting / forgings involving high development cost;
  - Non-project items / consumables
  - Other items like Bi-metal bearings / bushes & critical items involving fast cycle tests

- Proprietary items are aggregates or critical functional items which have got bearing on the performance of the engines. It is a universal practice to procure these items from specialist manufacturers who retain the know-how. Hence, for these items, Engine Division is going for single tender;

- Items like castings and forgings specially developed for us for which we have already incurred the development expenditure. In order to go for alternate source, division has to spend huge development cost again for the same items. Further, the manufacturers of forgings and casting generally call for minimum order quantity, which would cater to the whole year requirement of the division. In view of the above, division resorted to single tender;

.

- on-project items like machinery spares, special cutting tools are being procured from OE manufacturers of machines for which division has to go for single tender;

- Consumables like Diesel and Lubricants are being procured from Public Sector units viz., IOC;

- Some of the components of engines are critical and tolerance limits specified by the collaborator are stringent. In those cases, items have been developed with lot of involvement of our quality and purchase department. In view of this, though no development cost has been paid, division has gone on single tender considering the difficulties and time involved in developing second source. However, alternate source are being developed in such cases.

Development of alternate source is a continuous process and the division is putting all out efforts to address the monopolistic act of the totally dependent single vendors. In this direction, a vendor development cell has also been formed to address the cost, delivery schedule and quality, so that our engines will be cost competitive, as part of vendor modernization (the concept of extended partner)."

4.7 On being asked as to what action has been taken by the Company to achieve economies in the purchase of materials, it was submitted:-

- Change in supply chain strategy;
- Outsourcing of components for low end engines;
- Develop Alternate sources;
- Grouping of component family so as to enhance order value and reduction of vendor base consequentially leading to lower processing and follow up cost;
- Standardization;
- Implementation of ERP to optimize procurement and balanced inventory control;
- Aggressive indigenization has resulted in bringing down material cost. Eg.

- Indigenization and other efforts have resulted following results

Rs. In lakhs

Engine	01-02	06-07	% of Redn.
ATT	4.01	1.85	53.86
BE 220	3.41	1.93	43.40
BD 65	6.49	4.39	32.35
BD 80	7.26	5.00	31.13
BG 605	6.40	4.91	23.28
BG 825	8.33	6.05	27.37
BD 155	10.26	8.40	18.12
BD 355	11.61	8.10	30.23

The transfer price to other division for BEML engine was fixed in 2000-01 based on Cummins price available at that time. Since then, it has been retained to encourage division in cost reduction. It will now be re-fixed on year-to-year basis."

V. Sales of spares and after sales service

4.8 On the issue of sales of spares and after sales service, the audit in para 3.7.5 has observed that the Company had been earning income from sale of spares. The loss in manufacturing engines at higher cost was expected to be compensated by marketing of spares. The Engine Division continued to incur losses in all the years and it could not cover the losses incurred in the sale of engines through the margin in the sale of spares. In this regard, the Company was asked to shed lights on aspects such as - efforts made to bring down the cost of manufacture of engines and to increase the volume of sale of spares to restrict its losses; monitoring after – sales- service of engines to bring down the time required to repair the engines; and efforts made to improve sales of spares by effective marketing. In their written reply, the Company stated as under:-

> "All out efforts are being made to bring down the cost of material by indigenization, Value Engineering and finding alternate sources. As earlier stated, material cost of engines has progressively been brought down over the years. It may also be noted that the production of engines has increased considerably from 215 nos. during 2000-01 to 708 nos. during the year 2006-07 without increase in fixed cost. In view of this, overhead distribution per engine has come down considerably. Due to increase in sale of equipment with BEML engines, sale of engine spares also has increased considerably. Supply of engine spares from Engine Division has been increased from Rs.19 crores during the year 2005-06 to Rs. 41 Crores in 2006-07. BEML has got service centers in all the major regions where BEML equipments are deployed. After sales and service of engines are being effectively carried out by the skilled engineers available in Service centers and Regional / District offices who visit the site as and when required by the customers. With increased sale of equipments with BEML engines and supply of spares within short duration and improved response to after sale service, sale of spares have been increased considerably over the years."

VI Turn around plans

4.9 When asked about the challenges being faced by the Company in implementing certain turn around plans for improving the performance of its Engine Division and the steps proposed to be taken to convert such challenges

into opportunities including the future plan, if any, the Company submitted as under:-

> "Engine Division has achieved break-even already based on cost reduction initiatives. The Company expects to reach higher volume of production of engines based on various strategies to achieve significant growth in turnover of earth moving equipments as part of Corporate Plan to double the turnover by 2013-14. Various business initiatives towards Product and applications development is expected to significantly improve the operating levels whereby the Cost of Production will substantially come down. The indigenization and alternate source developments will be substantially facilitated based on higher volumes of Production in the coming years resulting in making the Engine Division more profitable in the long run."

CHAPTER V

DIVERSIFICATION ACTIVITIES

5.1 In order to optimise the capacity utilisation and also to normalise the cost of production the Division intended to extend the application of the Company's engines to other products and also to sell them independently as separate aggregate. Accordingly the Division took up the manufacture of engines for diesel generator set applications and K- 300 engines for compressor applications to private customers.

I. Manufacture of diesel engines for Diesel Generator Sets

5.2 Audit in para 3.7.4.1 has observed that as a part of production programme for the year 1998-99, anticipating demand for Gensets, the Company proposed to manufacture 24 Diesel Generator (DG) sets and accordingly procured raw materials required for the purpose. However, the Company could manufacture in 1999-2000 only two numbers each of 548 KVA and 358 KVA DG sets at a total cost of Rs.65.57 lakh and Rs.38.82 lakh respectively and finally sell in 2000- 04 three DG sets (two numbers of 548 KVA and one 358 KVA) for a total value of Rs.46.29 lakh. On account of the Company's inability to market DG sets, the programmed manufacture of 24 DG sets could not be continued and the unsold DG sets (one number) alongwith the raw materials procured for the purpose had to be devalued in 2000-03 based on prevailing market prices resulting in a loss of Rs.1.69 crore. Subsequent efforts made by the Company through value engineering and indigenisation did not yield the desired results and thus the Company's plan to enter DG sets market could did not materialize. The Company's subsequent effort made in March 2003 to enter into the marketing of DG sets through an agreement with a private firm M/s Jeevan Diesel & Electricals Limited, Bangalore (JDEL) was also not successful and the Company had to incur a loss of Rs.2.49 crore besides huge accumulation of unsold stock valued at Rs.3.14 crore lying with the Division as on 31 March 2006 (after devaluation) on account of non-lifting of diesel engines by JDEL. It was observed in Audit that the Company had taken up in 2003- 04 the manufacture of 59 diesel

engines at a cost of Rs.6.39 crore even before the receipt of any order as required under the terms of the agreement and financial commitment by the firm. Finally, JDEL lifted only three diesel engines (value Rs.1.6 crore) and paid only 20 *per cent* of the sale value. JDEL insisted for conversion of the purchased engines to different ranges and the balance payment of 80 *per cent* had not been received so far (as on November 2006) pending conversion as required by them. The Management stated in November 2006 that with a view to finding out suitable distributors who could market engines for DG sets an agreement was entered into with JDEL, for marketing DG engines based on indications given by them, but the same could not materialise as envisaged and JDEL were reluctant to adhere to the agreement. Efforts were being made to persuade JDEL to lift the engines. In case of failure by JDEL to lift, it was proposed that the engines would be rebuilt for use in other equipment. It was claimed that the development of DG engines may be viewed as a marketing strategy and that the expenditure was product development (R&D) expenditure in anticipation of sales and not wasteful expenditure against the sale contract dishonoured by the party. Further the manufacture of DG engines had been taken up to use the existing capacity and to educe the financial loss. However, the fact remains that the manufacture of DG engines on a large scale without any firm commitment from JDEL and continuance of manufacturing without ensuring the delivery/receipt of DG engines by the customer on a regular basis had resulted in an avoidable loss of Rs.2.49 crore besides accumulation of non-moving finished stock valued at Rs.3.14 crore.

II. Manufacture of K-300 engines for use in compressors

5.3 Similarly, Audit in para 3.7.4.2 has observed that the Division took up the manufacture of a prototype diesel engine (K-300) for use in compressor applications at a cost of Rs.13.40 lakh. The engine was sent in May 2004 to Kirloskar Pneumatic Company Limited, Pune (KPCL) for testing on compressor application and the test was successful. In August 2004, the Division took up manufacture of 10 engines for marketing at a cost of Rs.1.1 crore. The Division delivered one more engine in September 2004 on request by the customer i.e.

KPCL without finalizing the commercial terms with the firm. The customer intimated in September 2004 the purchase price of Rs.4.75 lakh at which it was interested in buying the engines along with the terms of delivery as ex-works Pune, with 90 days credit and warranty period of three years or 6500 hours from the date of commissioning. There was no settlement of the commercial terms with the customer. The material cost of the Company's engines itself was Rs.7.34 lakh as against the indicative price of Rs.4.75 lakh. In December 2005, the matter of price was again discussed with the customer and the customer finally agreed to pay Rs.7.5 lakh as a special proto price for the first proto type engine accepted by them. However, the customer subsequently informed that the market for K-300 compressor had collapsed and there was no demand for this range of compressors. Thus the diversification effort of the Division in marketing engines for compressor application had failed. Manufacturing of products without determining the commercial terms, proper market feed back regarding cost of production and market price led to failure of diversification efforts and blocking of Rs.1.10 crore. The Management stated in November 2006 that while entering into a new area it may not be always possible to follow a strict pricing policy and market could be penetrated only by taking certain business risks. However, all the K-300 engines had since been converted and used in Earth Moving equipment.

5.4 The Company was asked to state the justification on the above-mentioned audit observations indicating failures on its part in carrying out properly its diversification activities and the effective action taken to diversify and capture markets for diesel engine, with the overall objective of improving capacity utilisation. In their written reply, Company stated as under:-

> "Considering the huge demand for captive power generation through lower capacity DG sets, a decision was taken to enter the field of manufacturing DG sets. However, due to a large number of players both in organized and unorganized sectors in the market the Company could not make much head way in marketing the DG sets. Efforts were made to find out suitable distributors who can market the engines for DG sets. The Company, accordingly entered into an agreement with M/s. Jeevan Diesels for marketing of the engines and based on the indications given by them, the manufacture of DG engines was

taken up. However, the same could not materialize as envisaged, M/s. Jeevan Diesels were reluctant to adhere to the agreement based on changed market requirements.

The development of DG engines has to be viewed as a marketing strategy and should not be considered as a regular production venture. In our opinion, this has to be treated as R&D activity till the said engines stabilize in the Market.

It may be noted here that the fourteen DG engines relating to 237 KVA have been converted to PES 100 and supplied to Defence during the year 2006-07. Further, 14 nos. of DG engines relating to 105 series have been converted to regular model of engines during the year 2006-07. DG engines of 360 KVA available in stock as on 31st March 2007 would be converted to regular models of engines during the year 2007-08."

5.5 On being asked as to why the Company continued manufacturing DG sets for M/s.Jeevan Diesels, in the absence of confirmed commercial terms and why was the production not stopped when M/s. Jeevan Diesels had not lifted the first lot of 10 DG sets, the Committee were informed:-

"DG set Engines were manufactured as per agreement with M/s.Jeevan Diesels after agreement. As the material was already procured to meet the requirement of Jeevan Diesel, production continued hoping that the party will lift these engines within summer season to meet increased demand for Gensets."

5.6 When asked why the Company failed to safeguard its interest so as to legally bind the private customer in case of backing out, it was stated :-

"BEML initiated manufacturing action against the customer order initially and subsequently supplied these engines to Defence and the rest used on our equipment. Company has now formulated guidelines for entering into agreement with private customers to safe guard Company's interest."

5.7 Regarding the steps now being taken by the Company to diversify and capture markets for diesel engines, with the overall objective of improving capacity utilisation, the Committee were informed as under:-

"The market for DG set is dominated by the players with cost advantage due to economies of scale and calls for large volumes of production. With the spurt in demand of BEML equipment with BEML engine, the entire capacity of Engine Division will be effectively utilized for captive consumption.

After introduction of any engine along with equipment, the combination is subject to field trial for a reasonable period of time [around 6000 to 7000 hours (approximately 2 years time) to achieve confidence of product combination of both structure and the engine and this is essential part of any integration process to collect feed back and carryout necessary modification on the product design. On successful trial, pilot batch procurement of five to ten numbers including supplier development exercise is carried out {modification involves more than 100 parts both in structure and auxiliary parts, mountings]. After proving out, mass production will start and volume will be increased subject to satisfaction of the customers. Hence, after introduction of BH 35-2 engine during 03-04, two engines in 05-06 and 16 equipment in 06-07 is not abnormal. Hence, the production process is being ramped up progressively and it need be appreciated that product development, vendor development to meet the design requirement is time consuming progress because of low volume. Similarly for 210 M equipment, proto equipment was manufactured during 2001-02. "

CHAPTER VI

MONITORING ROLE OF THE MINISTRY

I. Government of India approval

6.1 BEML set up its Engine Division in 1991 for the manufacture of Diesel Engines for fitment in Equipment manufactured by it. As per the information furnished by the Company, the Government of India approval was obtained in 1988 for its establishment. In this regard, the Ministry was asked to state the salient features of the project report on which the approval was given by the Government. The reply of the Ministry of Defence was as under:-

" Salient features of the project report were:
i. Establish engine manufacturing division to manufacture engines suitable for equipment manufactured by BEML;
ii. Provide the Company with higher technological base;
iii. Sell engines for other applications like Diesel Generator sets."

On being asked about the factors taken into consideration by the Government while giving the approval, the Ministry stated :

"The factors considered by the Government for giving approval were:

Poor quality of competitors engine;
Poor performance, reliability and life of competitors engines
High downtime of BEML equipments due to poor performance of engines;
Non-availability of engine spares in time;
Poor after sales service of engines;
Performance of BEML products like Dozers were of high standard only with Komatsu engines;
Increased value addition to BEML if own engine is used in the equipment;
Saving Foreign Exchange;
Redeployment of surplus manpower from other divisions;
Improving bottom line for the Company as a whole;
Full control over spares and after sales service;
Increased profit margin in spares market

6.2 On being enquired about the conditions imposed by the Ministry on the BEML while giving the approval, it was submitted by the Ministry that as per the

MoD letter of July 1988 conveying approval of the project, specified that 'the entire capital cost of Rs. 30.06 Crs (with a foreign exchange content of Rs.8.75 crore) at the Companys own land in Mysore should be met by BEML out of its internal resources and the project should be completed over a period of 5 years from now.

II. Monitoring by government

6.3 On being asked about the mechanism available with Ministry to monitor the performance of the Engine Division of BEML or whether any guidelines/ directions have been issued by the Government to the Company in pursuance of such monitoring and whether the Government played any monitoring role in subsequent implementation of the project by the Company or whether the Government has identified shortcomings in some areas that could have been handled more appropriately, the stereo-type response of the Ministry was that BEML is a profit making and Board managed Company and performance of each division and projects under the division are reviewed by the Board and necessary directions/ contributions are made by the Ministry's representatives on the Board and Ministry was kept informed through monthly reports.

6.4 To a pointed query as to whether the approval of Government was obtained in re assessing the engine manufacturing capacity from 2400 to 1500 engines and subsequent to 1100 engines, it was submitted by the Ministry that :

> "No approval was obtained. However, Company has re-assessed the capacity due to following reasons:-
>
> (i) Due to severe foreign exchange constraint, faced subsequently to the sanction of the Project the procurement of Flexible Manufacturing System (FMS) was restricted to the planned Capacity of 1500 Engines only with Manpower of 263 employees, as against the projected varied capacity with 2400 engines per annum and requirement of 1500 employees in the project report in the Phase-II.
>
> (ii) The machining facility for Cylinder Blocks was not enhanced beyond 1500 Nos, the installed capacity was pegged to at around 1500 Engines per annum. During subsequent internal reviews and by external agencies such as Indian Institution of

> Production Engineers, the capacity was pegged at 1100 engines per annum as constrained by machines and other installation. However, the Company is trying to increase its outsourcing and to catch capacity with 1500 engines in 2 to 3 years. "

6.5 On the observation of the Audit that the Engine Division has not fully achieved its objectives and also many shortcomings such as low utilization of installed capacity (14 to 42%), offering equipment fitted with engines of other makes in spite of having its own capability, low % of utilization of BEML Engines in its own equipments, high cost of production, suffering continuous losses, failure of diversification efforts etc. observed in the performance of the Engine Division, the Ministry were asked to state whether they were aware of the deficiencies pointed out by the Audit and if so, the steps taken by the Ministry by way of any guidance or instructions to the Undertaking as corrective measures. In this regard, the Ministry submitted :-

> "Yes. The performance of Engine Division was included in the C&AG report of 2007. BEML was asked to comment on the same and they have accepted Audit recommendations and have taken steps to implement."

6.6 In response to a specific query of the Committee as to when did the Ministry become aware of this non-performance or non-realization of the objective and whether it was prior to the audit report or after the audit report, the representative of the Ministry during evidence before the Committee, submitted "We have seen the details only after the audit report has been circulated."

III. <u>Role of government Directors</u>

6.7 The Committee desired to know from the government representative on the Board of Directors of BEML who was also present during evidence before the Committee about the reporting mechanism to the Government and also the role of the Government in taking the follow-up action. In this regard, the Committee were informed that "Sir, that when we attend a meeting, after return, we submit a report to the Reporting Officer." He further submitted that :-

> "I would like to submit a few points. There is a Cost Advisor's report which comes every year in addition to the C&AG's Report. the basis of that Report, our Advisor (Costs) goes to the factory and suggests ways and means to improve things. The Cost Advisor visits different Divisions and submits from time to time reports and suggestions to improve the performance of individual Divisions. In this case also the Cost Advisor has visited twice in the last four years, which I am aware of. On the basis of the Cost Advisor's report, cost target groups were formed in the Company so that for those components of the Engine Division which are creating non-competitive costs value engineering takes place and the cost cutting can be realised. That is why you will see that in the last four-five years this Engine Division has not only improved the capacity utilisation but has also turned from a loss-making Division to a profit-making Division."

6.8 On being asked whether the decisions based on the Cost Advisor's report were taken at the Government level, he submitted :-

> "Cost Advisor is a part of the Ministry. He goes from here and then he submits his report. On the basis of that report the Government Director takes up the issue in the Board of Director's meeting and suggests what action management has taken or is likely to take on the bases of certain recommendations."

6.9 To a pointed question about the role being played by the Government representative on the Board of Directors of BEML, the Ministry submitted that necessary advice are being given to the Company in the Board Meetings by Government's representatives to improve and that accordingly the production of engines increased from 215 in 2000-01 to 708 in 2006-07. Hence, the consequential improvement.

6.10 The Committee noted that the performance audit of Engine Division of BEML covered the period from 2000-01 to 2005-06. which presented a very dismal picture of the overall performance of the Engine Division. In this regard, it could easily be concluded that during the period not covered by the Audit i.e., from 1991-1992 to 1999-2000, the performance of the Engine Division could have been even more pathetic. In this context, the Ministry were asked to state whether the Ministry were aware of the performance of Engine Division during

the period from 1991-92 to 1999-2000 and If so, the details thereof. The reply of the Ministry was as under:

> "Yes, through the monthly progress report of the Company. However, a comprehensive Audit of the Company as a whole was conducted by C&AG where the performance of Engine Division covering the period 1991-1998 was also noted and report submitted to the audit and government."

6.11 To a specific query as to whether any meetings were held at the level of Government for reviewing the performance of the Engine Division of BEML and if so, what has been the effect of such meetings in improving the Company's performance, the Ministry submitted :-

> "No special review meeting for the Engine Division has been done, however, the same is done through the monthly reports of the Company's performance. Also in the Board meetings, the review is done through MoD representatives on the Board. Accordingly, Division has taken up the task of resolving the various issues and taken corrective action which is indicative of the improvement in the performance in the last three years."

6.12 Regarding the monitoring role played by the Corporate office with regard to bringing improvements in the functioning of the Engine Division, the reply of the Company was as under:-

> "The Performance of Engine Division is being regularly monitored by Corporate Office especially in the areas of Cost reduction, Development of alternate sources, Productivity of Direct Labour, Machine utilization especially with reference to high cost CNC Machines etc. Various decisions including implementation of incentive scheme are under implementation. Consequent to this it is expected that not only break-even performance of the division will be maintained but also the profitability levels will be improved in the near future."

PART- B

RECOMMENDATIONS /OBSERVATIONS OF THE COMMITTEE

Non-achievement of objectives

(Recommendation No. 1)

The Committee note that the BEML set up its own Engine Division in 1991 in order to meet the requirement of Engines for captive consumption for its Earth moving equipment. The said objective included manufacturing of engine suitable for mining and construction equipment, achievement of higher technological base besides avoiding use of the engines of the other make which were having problems like poor quality, poor performance, non-reliability, high-down time, non-availability of spares and poor after sales services etc. The other factors like vertical integration for maintaining the overall quality of the equipment, control from the Company side over the supplies of spares/engines and having a better after-sales service were also considered by the Company for establishment of its own Engine Division.

In the above context, the Committee note with concern that even after sixteen years of establishment of its own Engine Division, the Company has failed to fully achieve the objectives mentioned above. The Company has continued to offer the equipment manufactured by them fitted with the engines of other make even during the period upto 2006-07 as pointed out by the audit in their

latest findings. The Committee are not convinced with the justification advanced by the Company that business-wise it was not viable to manufacture the entire range of engines and secondly the customers of BEML equipment have preference for the engines of other make.

The Committee find the above stand taken by the Company contrary to the basic objectives which inspired it to establish its own Engine Division. The Committee fail to understand that even after lapse of 16 years the Company has not been able to produce, if not the entire range of engines atleast the major varieties required for its own earth moving equipment. In the opinion of the Committee the very purpose for which the Company started its own Engine Division has been defeated to a great extent.

After going through the explanation/ arguments given by the Company, the Committee find that it is a glaring example of lack of vision, poor planning and improper execution of their policy of establishment of its own Engine Division. While deprecating the failure on the part of the Engine Division in meeting its objectives, the Committee recommend that the Company must undertake a thorough examination about the lapses in the matter and come out with a proper review of the causes of failure to achieve the objectives and accordingly take corrective steps. The Committee further recommend that the persons responsible for such serious lapses be

identified and accountability be fixed and the action taken thereon may be communicated to the Committee.

Poor production performance and under-utilisation of installed capacity

(Recommendation No.2)

The Committee note that according to the Project Report, the Engine Division was expected to manufacture 2400 engines of varying bore size category per year with manpower of 1500 and with the plant working in three shifts. However, since the machining facility for cylinder blocks was not enhanced beyond 1500, the installed capacity was adopted as 1500 engines per year and subsequently re-assessed at 1100. According to audit, in terms of installed capacity of the Engine Division, the utilisation ranged from 14 *per cent* in 2000-01 to 42 *per cent* in 2005-06. Further, the Company did not utilise its engines in all its equipment manufacture resulting in under utilisation of the manufacturing capacity of engines. The Company had been purchasing Cummins engines and utilising the same for fitment in the equipment manufactured by them. Except in 2004-05 the number of equipment fitted with the Company's engine was less than 50 *per cent* of the total number of equipment manufactured. In spite of the availability of capacity in the Engine Division, the Company did not use its engines in all its equipment manufactured. An audit analysis in this regard revealed that fitting of the Company's engines in the equipment supplied to the major customers viz. Coal India Limited and its subsidiaries ranged only between 15 and 45 per cent.

According to the justification furnished by the Company, due to severe foreign exchange constraints, the machining facility was not enhanced beyond 1500 with manpower of 263 people as against the projected requirement of 1500 employees. Further, since the engines manufactured are only for captive consumption in the earth moving equipment, the production was planned and achieved in accordance with the demand/market share of BEML which has not gone up to 1100. Regarding fitment of other make engines, the Company has come out with the reply that the manufacturing range of the Engine Division was in the range of 100 HP to 550 HP and the engines of other ranges were outsourced from Cummins.

The Committee are not convinced with the justification advanced by the Company towards poor production performance and under-utilisation of the installed capacity. First of all, the Committee find that the projections made in the detailed project report for establishment of the Engine Division were projected on the higher side vis-à-vis the actual demand. Secondly, the Engine Division has failed to utilize even the re-assessed installed capacity of 1100 engines. Thirdly, as per the latest information furnished by the audit, even after sixteen years of its inception, the Company has continued to offer their equipment fitted with the engines of both BEML as well as that of other makes in contravention with the policy decision taken by the Board itself on 22nd January, 2003 to offer all

equipment only with BEML engines w.e.f. 1st April, 2003 wherever engines manufactured were within the range of Engine Division. The Committee note from Ministry's reply that performance rating of BEML engines is high and feed-back on customers satisfaction has revealed satisfactory results. The Committee however note with concern that despite this high performance rating, the percentage of equipment fitted with BEML engines sold to its major customers has actually declined. For Coal sector it has declined from 55% in 2002-03 to 44% in 2006-07 and for Cement sector from 80% in 2002-03 to 32% in 2006-07.

The Committee find the performance of the Engine Division appalling in terms of low productivity and under-utilisation. For this purpose the Committee recommend that the Company may take all necessary steps like adoption of suitable marketing strategies, development of appropriate infrastructure, finding appropriate diversification activities for the purpose of extension of the product range for various types of applications, continuous work on research and development to improve the engines making them at par with international standards, and finally formulating strategies and programmes to increase the production of viable models of engines instead of production and stacking engines of unviable models.

High cost of production and Financial performance (Recommendation No.3)

The Committee note that since its inception, the Engine Division has incurred losses every year and its poor financial performance can be attributed broadly to the factors namely , high cost of raw materials and components; under-utilisation of installed capacity; and dependence on single source supplies for raw materials and components.

In the above context, the Committee note that the Company had made efforts to introduce certain cost saving measures by outsourcing some conventional activities like turning, milling, drilling, boring, tapping, grinding and key-way slothing etc. which was 10% of total purchases made during last 6 years in order to get the jobs done on economic rates. The Committee also note that the Company had made efforts to bring down the cost of production by earning profits through increased sale of spares and after sale service of engines. As regards dependence on single source supplies, the Company has advanced the justification that Engine Division is resorting to single tender on certain proprietary items which are critical functional items having bearing on the performance of the engines and also in those cases where the suppliers are specialized.

Having noted the fact that the losses of the Engine Division over the years are coming down gradually mainly because of increasing production level of engines, the Committee would like to emphasize the need for further speeding up of the production level instead of going for purchased engines of other makes. The Committee recommend that the various strategies proposed by the Company to achieve the targeted double turn over of the earth moving equipments by 2013-14 as per their Corporate Plan be put in place expeditiously so that the demand for the engines is also enhanced accordingly. Further, the manpower utilisation be matched with the installed capacity with a view to achieve optimum production. The Committee further recommend that the issues like exploring development of alternative source of supply to get competitive price in procuring raw materials/ components and requirement of capital expenditure towards procuring additional machinery and other overheads to improve production level of the engines be urgently addressed by the Board.

Monitoring role of the Ministry

(Recommendation No.4)

The Committee note that the Government of India accorded approval for establishment of Engine Division in 1988 and thereafter the Engine Division was established by BEML in 1991 for manufacture of engines for captive consumption. The main factor which was considered by the government in granting such approval to BEML was that the engines which were being used by the BEML in the equipment manufactured by them were suffering from many shortcomings. In addition to this, some other factors like increased value addition to BEML if own engine is used in the equipment, saving foreign exchange, redeployment of surplus manpower from other divisions, improving bottom line for the Company as a whole, full control over spares and after sales service, and increased profit margin in spares market were also taken into consideration by the Government.

The Committee note that as per the audit findings, the Engine Division has not fully achieved its objectives in rectifying the shortcomings faced by it prior to its establishment. The Committee do not subscribe to the view of the Ministry that BEML is a Board managed Company and its performance is reviewed by the Board periodically. The Committee feel that there has been lack of constant monitoring on the part of the Board. The Committee are of the view that the concerned Ministry cannot absolve itself of its responsibility by coming out with

such an irresponsible reply because the representative of the Ministry serves as an important link between the Company and the Government. As such, there is a need for strengthening the monitoring mechanism which would definitely improve the performance of the Engine Division.

Failure in the diversification activities

(Recommendation No.5)

The Committee note that in order to optimise the capacity utilisation and also to normalise the cost of production, the Engine Division intended to extend the application of the Company's engines to other products and also to sell them independently as separate aggregate. Accordingly the Division took up the manufacture of engines for diesel generator(DG) set applications and K- 300 engines for compressor applications to private customers. As per the audit findings, the diversification efforts made to manufacture and sell the Company's engine for use in Diesel Generator sets were not successful resulting in loss of Rs 2.49 crore. Besides, the Company was left holding an inventory of finished stock of Rs 3.14 crore.

In this regard, the Committee note that according to the Company, considering the huge demand for captive power generation through lower capacity DG sets, a decision was taken to enter the field of manufacturing DG sets. However, due to a large number of players both in organized and unorganized sectors in the market the Company could not make much head way in marketing the DG sets. So the Company made efforts to find out suitable distributors who can market the engines for DG sets. The Company entered into an agreement with a private party, namely M/s. Jeevan

Diesels for marketing the engines and based on the indications given by them, the manufacture of DG engines was taken up. However, the envisaged objective could not materialize as the said party was reluctant to adhere to the agreement based on changed market requirements.

The Committee are not convinced with the performance of the Engine Division in the course of its diversification activities. The committee are constrained to note that the Company continued manufacturing DG sets for same party without any acceptable commercial terms and the production continued even though the concerned party had not lifted the first lot of 10 DG sets. The Company failed to safeguard its interest by not legally involving for the said private customer in case of backing out nor the Company formulated any guidelines for entering into marketing agreement with private customers to safeguard its interests, particularly when new products were being launched. The Committee therefore strongly recommend that effective steps should now be taken by the Company to diversify and capture markets for diesel engines, with the overall objective of improving capacity utilization of the plant and a better market share. The Committee further recommend that the Company should carefully draw the terms and conditions of agreements with the customers to fully safeguard its own interests. The Committee also recommend that responsibility be fixed on the persons concerned for

drafting inappropriate terms and conditions in the agreement entered into with private party regarding marketing of DG sets thereby resulting in substantial loss to the Company and action taken thereon may be intimated.

New Delhi
27th February, 2008
8th Phalguna, 1929 (S)

RUPCHAND PAL
Chairman
Committee On Public Undertakings

Annexure - I

Report No. 9 of 2007

MINISTRY OF DEFENCE
CHAPTER III

Bharat Earth Movers Limited

Performance of Engine Division

Highlights

Despite availability of in-house capacity, Bharat Earth Movers Limited (Company) resorted to manufacture of equipment with engines of other make.

(Para 3.7.1.1)

The Engine Division (Division) could utilise only a maximum of 42 *per cent* of installed capacity for captive requirements indicating that there had been an unrealistic forecast of the demand for engines at the project.

(Para 3.7.1.1)
Though the annual production targets ranged between 15 and 57 *per cent* of the installed capacity, the Division could not achieve the target in 2003-04 and 2005-06 when the shortfall was 23 and 27 *per cent* respectively.

(Para 3.7.1.1)

The Company could not recover even the material cost in 9 out of 20 models of engines produced during 2005-06. The excess cost worked out to Rs.2.09 crore.

(Para 3.7.2.2)

The Division placed purchase orders based on single tender. Such orders accounted for between 30 and 59 *per cent* of the total value of purchase orders placed during the period of review.

(Para 3.7.3.3)

Diversification efforts made to manufacture and sell the Company's engines for use in Diesel Generator sets were not successful resulting in loss of Rs.2.49 crore; besides, the Company was left holding an inventory of finished stock of Rs.3.14 crore.

(Para 3.7.4.1)

Another diversification effort made to use the Company's engines in compressor application was also not successful.

(Para 3.7.4.2)

Annexure – II

MINUTES OF THE 10TH SITTING OF THE COMMITTEE ON PUBLIC UNDERTAKINGS HELD ON 11th OCTOBER, 2007

The Committee sat from 1130 hrs to 1230 hrs.

CHAIRMAN

Shri Rupchand Pal

MEMBERS, LOK SABHA

2. Shri Gurudas Dasgupta
3. Shri Francis K. George
4. Dr. Vallabhbhai Kathiria
5. Dr. Rameshwar Oraon
6. Shri Shriniwas Patil
7. Kunwar Jitin Prasada

MEMBERS, RAJYA SABHA

8. Shri K. Chandran Pillai
9. Shri Dinesh Trivedi

SECRETARIAT

1.	Shri J.P. Sharma	Joint Secretary
2.	Smt. Anita Jain	Director
2.	Shri N. C. Gupta	Deputy Secretary
3.	Shri Ajay Kumar	Deputy Secretary-II

OFFICE OF THE COMPTROLLER & AUDITOR GENERAL OF INDIA

1.	Ms. Bharti Prasad	Chairperson, Audit Board
2.	Shri A.K. Awasthi	Director General (Commercial)

REPRESENTATIVES OF BHARAT EARTH MOVERS LIMITED

1.	Shri V.R.S. Natarajan	Chairman & Managing Director
2.	Shri Gautam Sen	Executive Director (Finance)
3.	Shri S.K. Das	Executive Director (TD)

2. At the outset, the Committee had a briefing by the officials of the C&AG about the audit findings contained in Chapter III of C&AG's Report (Commercial) No. 9 (Performance Audit) of 2007 regarding review of performance of Engine Division of Bharat Earth Movers Limited which has been selected as a subject for examination during the year 2006-2007.

3. Thereafter, the Committee took up oral evidence of the representatives of Bharat Earth Movers Limited on the above-mentioned subject. The Chairman welcomed the representatives of BEML and drew their attention to Direction 58 of the Directions by the Speaker relating to evidence before Parliamentary Committees. The CMD, BEML made his presentation on the audit findings contained in C&AG Report. Thereafter, Members raised queries on various aspects pertaining to the subject and the explanations/ clarifications on the same were made by the representatives of BEML. On certain points raised by the members, the Committee directed the CMD to furnish a detailed note within a fortnight.

4. The Chairman then thanked the representatives of BEML for providing the material/information on the subject matter as desired by the Committee.

5. A copy of the verbatim proceedings has been kept on record separately.

6. The witnesses then withdrew.

7. The Committee then adjourned.

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MINUTES OF THE 11th SITTING OF THE COMMITTEE ON PUBLIC UNDERTAKINGS HELD ON 26th NOVEMBER, 2007

The Committee sat from 1500 hours to 1600 hours.

PRESENT

Chairman

Shri Rupchand Pal

Members, Lok Sabha

2 Shri Ramdas Bandu Athawale
3 Smt. Sangeeta Kumari Singh Deo
4 Shri Francis K. George
5 Dr. Vallabhbhai Kathiria
6 Ch. Lal Singh
7 Shri Shriniwas Patil
8 Shri Kashiram Rana

Members, Rajya Sabha

9 Shri Ajay Maroo
10 Shri Pyarimohan Mohapatra
11 Shri K. Chandran Pillai

Secretariat

1	Shri S.K. Sharma	Additional Secretary
2	Shri J.P. Sharma	Joint Secretary
3	Smt. Anita Jain	Director
4	Shri N.C. Gupta	Deputy Secretary
5	Shri Ajay Kumar	Deputy Secretary-II

Office of the Comptroller & Auditor General of India

1.	Shri A.K. Awasthi	Director General (Commercial)
2.	Shri Naveen Kumar	Principal Director (Commercial)

Representatives of Ministry of Defence (Department of Defence Production)

1	Shri P.K. Rastogi	Additional Secretary
2	Shri Satyajeet Ranjan	Joint Secretary
3	Shri Narendra Kumar	Director (B&E)
4	Shri V.R.S. Natrajan	CMD (BEML)

2. The Committee took oral evidence of the representatives of Ministry of Defence (Department of Defence Production) in connection with examination of C&AG's Report (Commercial) No. 9 (Performance Audit) of 2007 regarding review of performance of Engine Division of Bharat Earth Movers Limited.

3. At the outset, the Chairman welcomed the representatives of Ministry of Defence (Department of Defence Production) and drew their attention to direction 58 of the Directions by the Speaker relating to evidence before the Parliamentary Committee. Then, the Chairman expressed unhappiness over non-intimation of the leave and the absence of Secretary, Department of Defence Production. The Secretary-in-charge explained that the Secretary is on leave and he is acting as the Secretary-in-charge. Thereafter, the Chairman with the consent of members condoned the absence of the Secretary.

4. Then, Members raised queries on various aspects pertaining to the subject and the explanations / clarifications on the same were made by the representatives of Ministry. The Committee raised some questions with specific reference to the performance and achievement of objectives of the Engine Division of BEML which could not be replied by the Ministry to the satisfaction of the Committee. The Committee directed the Ministry to furnish a comprehensive note to the Committee.

5. The Chairman then thanked the representatives of Ministry of Defence (Department of Defence Production) for providing all the material/information on the subject matter as desired by the Committee.

6. The witnesses then withdrew.

7. A copy of the verbatim proceedings has been kept on record separately.

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MINUTES OF THE 16th SITTING OF THE COMMITTEE ON PUBLIC UNDERTAKINGS HELD ON 27th FEBRUARY, 2008

The Committee sat from 1500 hours to 1530 hours.

PRESENT

Chairman

Shri Rupchand Pal

Members, Lok Sabha

2 Shri Ramdas Bandu Athawale
3 Shri Francis K. George
4 Dr. Vallabhbhai Kathiria
5 Ch. Lal Singh
6 Shri Kashiram Rana

Members, Rajya Sabha

7 Prof. Ram Deo Bhandary
8 Shri Mahendra Mohan
9 Shri Ajay Maroo
10 Shri K. Chandran Pillai

Secretariat

1	Shri S.K. Sharma	Additional Secretary
2	Shri J.P. Sharma	Joint Secretary
3	Shri Ajay Kumar	Deputy Secretary-II

Office of the Comptroller & Auditor General of India

Shri A.K. Awasthi Director General (Commercial)

2. The Committee took up for consideration the draft Report on Chapter III of C&AG's Report (Commercial) No. 9 (Performance Audit) of 2007 regarding review of performance of Engine Division of Bharat Earth Movers Limited. The Committee adopted the Report with some modifications.

3. The Committee authorized the Chairman to finalize the Report for presentation.