Chapter-VIII :Defence Public Sector Undertaking

BEML Limited, Bangalore

8.1 Procurement and Inventory Management

8.1.1 Introduction

8.1.1.1 Company Profile

BEML Limited (Company), established in 1964, is a listed 'MiniRatna' Central Public Sector Undertaking (CPSE) under the administrative control of the Ministry of Defence (MoD) and caters to the core sectors of the economy. The Company is engaged in design, manufacturing, marketing and after-sales-service of a wide range of Mining and Construction equipments, Defence products, Railway and Metro Rail products. The Company operates under three distinct business segments *viz.*, Mining & Construction, Defence& Aerospace and Rail & Metroand has four manufacturing complexes with nine manufacturing units located at Bangalore[164], Kolar Gold Fields[165] (KGF), Mysore[166] and Palakkad.

The Corporate office and Central Marketing Division is located at Bangalore. The Company has a nation-wide network of sales & service offices and spare parts depots.

8.1.2 Audit approach

8.1.2.1 Why we selected the topic for audit

In order to obtain a reasonable assurance on whether the commercial interests of the Company were adequately met, Audit decided to review the system of Procurement and Inventory Management in the Company during the period from 2010-11 to 2012-13. Our analysis of the decrease in profit revealed that one of the many factors contributing to this was high inventory levels impacting on the working capital.

8.1.2.2 Audit Methodology

Audit studied the procurement policies, management guidelines and directives on procurement activity, inventory control mechanism, working capital facility and their implementation by all the manufacturing units/marketing divisions. Out of 86,794 purchase orders (POs) valuing ₹9,007.68 crore placed during the period from 2010-11 to 2012-13, Audit selected 1,577 POs[167] valued ₹5,498.51 crore for audit review based on Stratified Random Sampling to size without replacement sampling method **(Annexure - XXXIX).**

[164] Rail and Metro Division
[165] Earth Moving Division, Rail Coach, Heavy Fabrication and Hydraulic & Power Line
[166] Truck Division and Engine Division
[167] Out of 1577 POs, 1217 POs were external POs placed on vendors and balance 360 POs were inter-divisional POs of the company.

Audit commenced with an Entry conference (19 July 2013) with the Management wherein the scope, objectives, criteria and methodology of audit were discussed. This was followed by review of POs files at units, collection and analysis of data, issue of preliminary observations and discussions with the management. Audit was concluded with an Exit conference (30 December 2013) with the Top Management of the Company wherein the results of audit and the audit recommendations were discussed.

The draft Audit Report issued in October 2013 was replied to by Management in December 2013. The Company accepted eight out of ten recommendations made by audit and expressed reservations/constraints on two recommendations which have been discussed in **paras8.1.3.1 and 8.1.3.4.**

We further reviewed the position for the year 2013-14 and corresponding financial figures for the year were updated.

The report was issued to Ministry in January 2015 and their reply was awaited (September 2015).

8.1.2.3 Audit Objectives

The objectives of the Performance audit were:

1. To examine whether policy and procedures of the Company for procurement are well defined, framed in compliance with statutory/Government guidelines and updated periodically;

2. To ensure that the purchase procedure is adhered to;

3. To examine and assess the effectiveness of the Inventory management system;

4. To examine and map the procedure followed in e-procurement to ensure that they are documented and are in consonance with Purchase Manual, Central Vigilance Commission (CVC) guidelines and STQC requirements.

8.1.2.4 Audit Criteria

The performance of the Company was assessed against following criteria:

- Purchase policy and procedures and instructions/guidelines issued from time to time;

- Minutes of the meetings of the Board of Directors, Audit Committee**,** Steering and Internal committees;

- Targets and achievements, Production plan and minutes of the production review meetings;

- Guidelines issued by CVC and other regulatory authorities;

- Review of Purchase orders and contracts placed on suppliers and progress of supplies, feedback from suppliers;
- Inventory norms and holding.

8.1.2.5 Audit acknowledgement

We acknowledge the co-operation extended by the Management at all levels in production of records and information, clarifications of issues and furnishing of replies.

8.1.2.6 Inventory position

The inventory position for the four years from 2010-11 to 2013-14 is as shown in **Table-53** below:

Table-53: Inventory Position

(₹in crore)

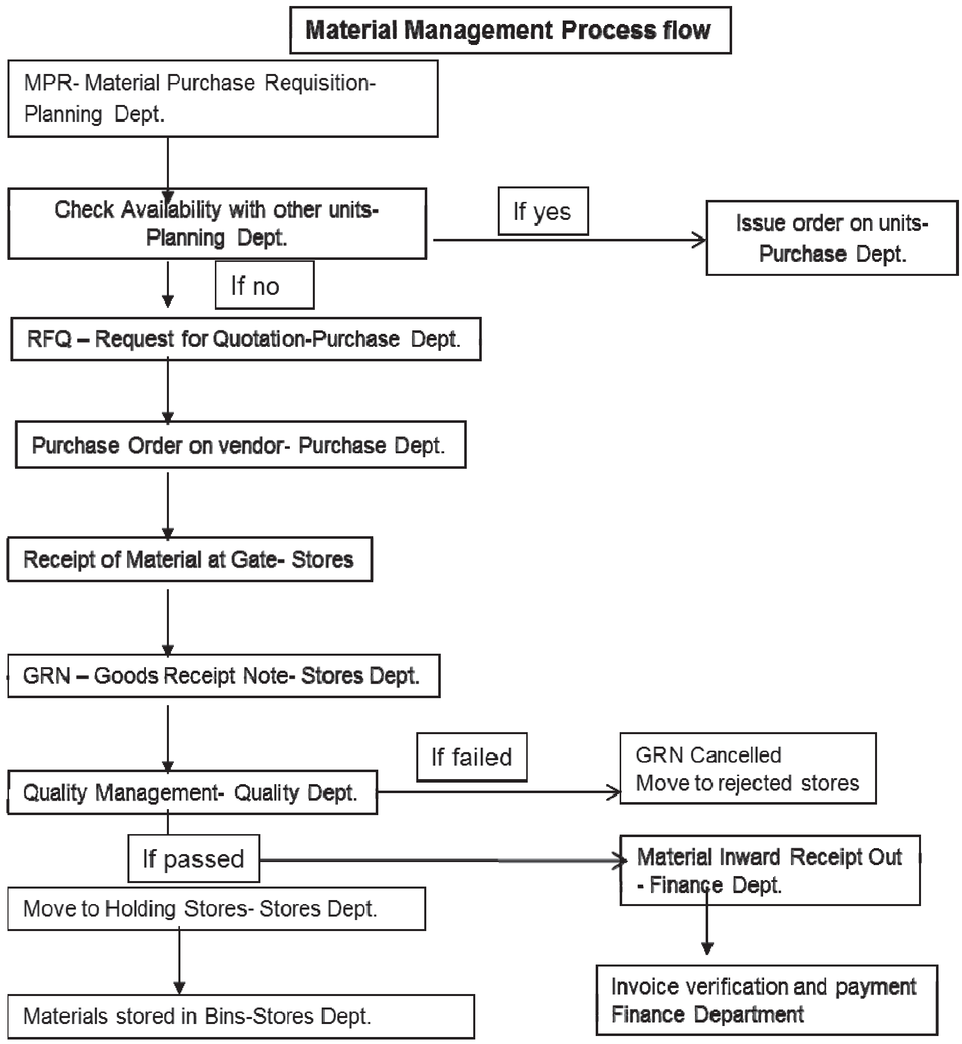
Year	2010-11	2011-12	2012-13	2013-14
Raw material & Components	553.94	656.74	624.40	439.10
Stores and Spares	27.16	26.67	23.31	22.59
Work in progress	472.10	604.97	730.29	579.29
Finished Goods	444.39	739.59	680.45	737.70
Others	391.32	394.44	397.75	373.42
Total	1888.91	2422.41	2456.20	2152.10
Inventory of raw material in terms of months' consumption	4.01	4.27	4.35	3.26
Inventory of Finished Goods in terms of months turnover	2.01	3.26	2.91	3.04

The Company had higher finished goods inventory of ₹737.70 crore at the end of 2013-14. However, the overall inventory position came down by ₹304.10 crore as at March 2014 compared to previous year mainly due to reduction in inventory of raw materials and work in progress.

8.1.2.7 Computerisation of Procurement and Inventory activities

The Company has adopted SAP for Sales and Distribution, Production & Planning, Materials Management, Finance and Controlling, Quality Management, Payroll and Human resources. The process flow of Material Management module for initiating procurement activity to accounting of received stores in SAP is furnished in **Chart-30**:

Chart-30



SAP captures the procurement and material transactions in Material management module and simultaneously captures financial entries, like advance payments to vendor, liability to vendor, final payments to vendor, *etc.* in Financial Accounting & Controlling(FICO) module. Audit observations relating to deficiencies in SAP is included in **paras 8.1.3.4, 8.1.3.6, 8.1.4.1**, **8.1.4.4, 8.1.5.4** and**8.1.5.5**.

The Company has also adopted Supplier Relationship Management (SRM) add-on module of SAP covering e-procurement functions like tendering (all types of tenders *viz.*, Single, Proprietary, Limited and Open tenders), receipt of bids, short listing of bids and reverse auctions. Audit observations relating to deficiencies in SRM module is included in **paras 8.1.6.1** to**8.1.6.3.**

8.1.3 Procurement System and Procedure

Audit Objective:*To examine whether policy and procedures of the Company for procurement are well defined and updated periodically and framed in compliance with Statutory/Government guidelines;*

8.1.3.1 Post-tender negotiations held in deviation to CVC guidelines and Purchase Manual

As per the CVC guidelines (March 2007), post-tender negotiations with L-1 should be held only in exceptional situations as it could often be a source of corruption. The Purchase Manual of the Company also stipulates that negotiations with L-1 should be an exception and heldonly in the case of proprietary items, items with limited source of supply and for item where there is a suspicion of a cartel formation. The Purchase Manual also specifies that the justification and details of such negotiations are duly recorded and documented without loss of time and convincing reasons are recorded while recommending for negotiations. Negotiations are to be minuted and signed by all the members of the negotiation committee along with bidders with schedule of delivery.

Audit observed that the Company resorted to negotiations in case of 717 POs (59 *per cent)* out of 1217[168] POs reviewed. Exceptional circumstances warranting such negotiations were not recorded.

Management in its reply stated (December 2013) that CVC guidelines did not bar price negotiations in totality. Negotiations were conducted to obtain best competitive price particularly with bidders where possibility of cartel formation among the vendors was suspected.

Audit observed that negotiations were held in more than 50 *per cent* of the POs placed indicating that negotiations were held as a practice and not as an exception. Further, the reply was silent regarding non-recording of exceptional circumstances warranting such negotiations.

8.1.3.2 Bank Guarantee amount not in accordance with CVC guidelines

CVC guidelines (February 2011) stipulate that Bank Guarantee (BGs) for an amount equivalent to at least 110 *per cent* of advance amount is to be obtained to ensure recovery of interest and principal in the event of default. Audit observed that the Purchase Manual stipulated acceptance of BGs equivalent toadvance amount which was being followed by the Company.

Management stated (December 2013) in reply that due care wastaken to protect Company’s interest by stipulating payment of only interest bearing advance with acceptance of BGs for an equivalent amount (100 *per cent*).

Reply is not factual as the Company had made payment of interest free advances in three[169] cases against the BG for equivalent amount. The reply has to be viewed in the background of provision in the Purchase Manual which clearly stipulated that advance payment was to be interest bearing as per CVC guidelines. Moreover, CVC guidelines do not distinguish between interest bearing and interest free advance. Thus, accepting of BGs equivalent to

[168] excluding 360 STOs/internal POs out sample of 1577 POs

[169] ₹0.11 crore each in respect of POs 4580067427,4580067428 and ₹0.16 crore in respect of POs 4580070003

amount of advance was not in accordance with CVC guidelines and did not protect the interests of the Company.

Audit further observed that there was no monitoring of bank guarantee as detailed below:

a) CVC guidelines (December 2007) stipulate that in the organisation/unit, one officer should be specifically designated with responsibility for verification, timely renewal and timely encashment of BGs. However, receipt and acceptance of BGs in the Company was being handled by multiple departments and no officer was designated for verification, timely renewal and encashment of BGs as stipulated in the CVC guidelines.

b) CVC guidelines also stipulate that it should be insisted upon the contractors, suppliers, *etc.*, that BGs to be submitted by them should be sent to the organisation directly by the issuing bank and in exceptional cases where the BGs are received through the contractors, suppliers, *etc.*, the issuing bank should be requested to immediately send an unstamped duplicate copy of the BG to compare with the original BG and confirm that it was in order. While the BG register maintained by the Company contains Name of the vendor, PO reference, BG reference, bank reference, amount, date of expiry, date of sending for confirmation and date of receipt of confirmation, details such as mode of receipt, dates on which BGs were received and purpose for which accepted were not being entered in the BG register. Mode of receipt was required to comply with CVC guidelines, the date of receipt was to ensure that the BG was received before the payment of advance to protect Company's interests and the purpose was to ensure that the relevant BG only was returned after completion of the contract in cases where multiple BGs were received from the same vendor. Audit further observed that though SAP hadfacility to capture and monitor the transactions relating to BGs, the Company hadnot utilized it.

Absence of above monitoring mechanism has the inherent risk of non-encashment of BG in event of non-performance by vendors, holding expired BGs due to non-renewal in time, *etc.*, thus exposing the Company to risk of loss.

Management stated (December 2013) in reply that instructions would be issued to streamline the system of monitoring of BGs.

8.1.3.3 Documentation of Purchase Records not in accordance with CVC guidelines

CVC guidelines (January 2002) stipulate that proper documentation should be maintained for all the activities relating to procurement. The Purchase Manual of the Company specifies that every PO file should be page numbered. A test check of 1217 POs revealed the deficiencies likenon-availability of copy of Material Purchase Request (MPR), noting, correspondence with vendors, proprietary certificate *etc.*, in the PO files. It was also observed that date indicated in the ERP system was different from actual date of approval and issue of POs.

Management stated (December 2013) in reply that necessary instructions for proper documentation would be issued.

Audit observed (August 2015) that the Management issued (July 2014) suitable instructions for complying with the CVC guidelines regarding BG and documentation of purchase records.

8.1.3.4 Vendor Management not in accordance with Purchase Manual

The Purchase Manual envisages development of two or more sources to reduce dependency on single source. The Company also formed (2007) a Vendor Development and Sourcing (VDS) Cell to explore development of alternate sources. As brought out in **para8.1.2.7**, SRM module of SAP was installed by the Company in March 2009 for implementation of e-procurement in phased manner. Accordingly, threshold limit for procurement through e-procurement was fixed initially at ₹50 lakh (June 2007) and was gradually lowered to ₹10 lakh in August 2009, ₹5 lakh in November 2011 and ₹1 lakh in July 2012. Audit observed that tendering activities are carried out outside the SAP either manually or through SRM module. Due to absence of inter-face between SRM and SAP, SAP does not have data relating to tendering activities like date of hosting of Notice inviting Tender (NIT)*i.e.*, date of publishing, submission date of bid, date of opening of bid, comparative statement, short listing of vendor, *etc.*Thus, due to non-availability of data in the system relating to tendering activities, the Company could not adhere to the following provisions of the Purchase Manual:

i. As per the Purchase Manual, Approved Vendor List (AVL) was classified 'category wise' for various categories, such as Fabrication, Machining, Assembly, Raw Materials, Castings and Forgings, Hardware, Electrical Hydraulic Cylinders, Rubber items, Hoses, etc,. The Purchase Manual prescribes the minimum number of vendors[170] to be contacted on the basis of value of Purchase proposals. Audit review revealed that due to non-maintenance of item or part number-wise vendor data, the Company could not identify the vendors dealing with the material required from the Company's Vendor database and hence, could not adhere to the minimum number of vendors to be contacted in respect 100 POs out of 376 POs test checked pertaining to Earth Moving division. Further, a detailed review of 32 POs by Audit revealed that all the vendors to whom NIT was sent did not respond and in 13 cases, only one offer was received which was due to the fact that the vendors were not dealing with the material specified in the NIT.

ii. In absence of item or part number-wise vendor data, the vendors to whom the enquiries were to be sent were being identified manually in

[170]Four vendors for Purchase proposals upto₹5000, six vendors for Purchase proposals above ₹5000 but below ₹25000, eight vendors for Purchase proposals above ₹25000 but below ₹ one lakh, 10 vendors for Purchase proposals above ₹ one lakh but below ₹10 lakh and 12 vendors for Purchase proposals above ₹10 lakh.

respect of both conventional tendering and tendering through SRM system.

Management stated (December 2013) in reply that

a) compilation of part number-wise vendor data was under consideration and

b) procedures laid down in manual were always followed strictly and in exceptional cases, approval of the competent authority was obtained indicating the reasons.

However, part number wise AVL was yet to be finalized (August 2015) and no specific reasons for non-adherence to the minimum number were recorded in purchase proposals reviewed in Audit.

iii. The Purchase Manual provides that the names of vendors not responding against the enquiries for more than five times or two years, whichever was earlier, should be removed from AVL. However, no such analysis was carried out defeating the purpose of the manual provisions which would have been a deterrent to the vendors who do not regularly participate in tenders.

Management stated (December 2013) that efforts would be made to develop a data base on vendors who have failed to respond to Company's tenders to enable removal of such vendors as stipulated in the Manual.

iv. Audit observed that out of 1217 sampled POs analysed in audit, 223 POs (18 *per cent*) were single tenders. The Company developed 288 vendors during the review period but orders were placed only on 151 vendors. Audit could not verify whether the developed vendors were also included for sending the purchase enquiries to ensure better competition as well as reducing the dependency on single tenders as there was no inter-face between SRM and SAP. Due to inadequate development of vendors, Company continued to depend on single/limited sources.

Management stated (December 2013) in reply that in certain business segments like Rail and Metro, the vendor base was dependent on customer approved source and accordingly scope for expansion was limited and further added that efforts were being made to develop vendors.

Thefact remains that maintenance of a proper database would have reduced the dependency of the Company on single tenders.

8.1.3.5 Rating of vendors

As per the Purchase Manual, vendor evaluation for rating of the vendors wasto be done where more than one source of supply for the same item of material was available. Seven[171] parameters at pre-order stage and post order stage were prescribed in the Purchase Manual. Audit observed that specific methodology for such rating indicating the weightage points to be assigned for each such parameter was not prescribed for evaluation of vendor performance.

Management stated (December 2013) in reply that in compliance of ISO audit requirement, vendor evaluation wasbeing carried out at division level assigning a weightage of 80 *per cent* and 20 *per cent* to quality and delivery respectively.

Fact remains that manual provisions were not being complied with and as against seven parameters, only two were considered by the Company. Audit further observed on a test check of evaluation of five[172] vendors done during 2012-13 and 2013-14 by the Company that vendors were assessed for one parameter *viz.* quality only and not for parameter relating to delivery.

8.1.3.6 Duplication of vendors in approved list

The Company maintains Vendor Master containing address, Tax information, Bank details, Accounting Information, Order currency, Payment terms, Vendor pricing scheme, Partner details, *etc.*, in SAP. Addition and deletion of vendors to the master weremade by the authorized officials. Vendor master consists of five categories of vendors, *viz.*

- Approved Vendors (70 series[173]);
- Vendors recommended by Vendor development Cell for Project requirement (76 series);
- Vendors recommended by Divisional Purchase groups for Project requirement (77 series);
- Foreign Vendors (80 and 90 series); and
- Vendors for Non-Project requirement (60 series).

On an analysis of the data in Vendor Master, Audit observed that 22 vendors were repeated in same series (Nine in 70 series and 13 in 77 series) and seven vendors were repeated in two different series (three vendors in 70 series and 76 series and four vendors were repeated in 70 series and 77 series) resulting in duplication of vendors. Thus, SAP was not configured to prevent creation of duplication of vendors.

Management stated (December 2013) that multiple vendor codes were frozen across the Company and creation of Vendor master was centralized at Corporate Quality Department to avoid creating of multiple vendor codes.

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[171] Pre-order stage for participation in tender and post-order stage for Quality, order execution, price, delivery, after-sales service and general

[172] M/s Engineering Steel (701288), Sri Ramanuja Industries (701978), Steel Cast Limited(702000), Trident Fabrications (702081) and ArniMech Product (702226).

[173] Vendor Code is a multi-digit number and the first two digits of the Vendor Code indicate the category to which the Vendor belongs.

Reply of the Company was not correct as a test check of additions to Vendor Master by audit revealed that users from other departments other than Corporate Quality Department continued to create the vendors in the system whereby the same vendor was assigned different vendor codes by different departments. Duplication of vendors could result in continuation of the vendor in the database despite being blacklisted and management of POs placed on the vendor would be difficult since different divisions would be using different vendor codes though the vendor would be the same. Further, duplication in vendor list indicated lack of internal controls which need to be addressed on 'Top Priority' by the Management.

8.1.4 Contract Management

Audit Objective: *To ensure that the purchase procedure is adhered to*

Purchase Manual stipulates ensuring timely delivery, inspection and acceptance of material and payment/levy of liquidated damages.

Audit observations relating to non-adherence of purchase procedure from placement of POs to receipt of material and payment to vendors are given below:

8.1.4.1 Non-adherence to prescribed time schedule in procurement process, non-supply and delayed supply of materials

Audit, in order to assess the efficiency of procurement process with reference to the prescribed time schedule indicated in the Purchase Manual, reviewed the time taken at various stages of procurement activity for selected 1217external POs and observed that:

(i) The time taken for floating of tenders from the date of raising of Material Purchase Requisitions (MPRs) was more than 30 days in respect of 339 sampled POs as against prescribed time limit of 10 days.

(ii) Overall time taken for conversion of MPRs to Purchase Order was more than 6 months in respect of 289 sample POs as against prescribed time limit of 90 days for Open Tender and 60 days for Limited Tender from the date of approval of MPRs

(iii) The MPRs created for initiating procurement activity inter alia included ‘expected delivery date’ by which materials were required to be made available to the intending department. On review of 3777 MPRs issued during 2010-11 to 2012-13, it was observed that in respect of 2352 MPRs, POs were issued after the “expected delivery date” specified in MPR indicating that procurement of material was delayed at the time of issue of PO itself.

Audit observed that there was no provision in the system to generate Management Information System (MIS) Reports required to monitor compliance to time schedules prescribed in Purchase Manual. Non-finalisation of tenders within the time stipulated in the Purchase Manual result in delay in procurement of the material and consequently affects the production schedule besides delay in supply of the finished product to the customer.

Management stated (December 2013) in reply that:

- the delay in conversion of MPRs to POs was due to change in production plan, short closure, delay in release of POs pending receipt of confirmed customer orders;
- original date of MPR is retained irrespective of actual developments and audit observation was noted for necessary corrective action;
- delivery schedule indicated in MPR was only tentative and actual requirement was based on customer's delivery schedule, availability of stock and supply lead time.

Reply has to be viewed with reference to the fact that

- The delay in receipt of materials results in delayed supplies to customers and consequently levy of Liquidated Damages (LD) by customers. As SAP was unable to link PO to a customer order, impact due to delayed placement of POs on the execution of customer orders could not be ascertained. However, delayed procurement processes by the Company resulted in delayed supplies and is corroborated by the fact that the Company has already incurred LD of ₹18.29 crore in 2010-11, ₹27.18 crore in 2011-12, ₹7.20 crore in 2012-13 and ₹6.96 crore in 2013-14.

- MPR was the basic document required by purchase department for initiating procurement action and the Purchase Manual stipulates that the quantity and delivery schedule should be suitably linked to the production provisioning programme. However, the quantity and delivery schedule was not linked to the production provisioning programme. Audit observed that the Company converted 609 MPRs into POs but the quantity ordered as per the PO was less than the quantity indicated in the MPR. Though the MPRs were converted to POs partially, the intending divisions did not pursue for the procurement of the balance quantity and these MPRs remained open for the remaining quantity for which order was yet to be placed. Non-closure of MPRs after placing of POs could result in initiating procurement action without the requirement and consequent blocking of inventory as well as funds. Further, non-procurement of full quantity as per MPR indicated that the actual requirement of material was not considered while raising MPRs.

8.1.4.2 Non-clearing of advances to vendors contrary to provisions of Purchase Manual

As per the Purchase Manual, the advance payments needed to be generally discouraged except in specific cases. CVC guidelines (April 2007) also stipulate the same. Audit extracted details of pending advances as at the end of 31 March 2015 from SAP and age-wise analysis is shown in the **Table-54** below:

Table-54 Pending Vendor Advances

(₹in crore)

Year	Advance with PO	Advance for other activities	Total
2007-08	0.56	0.03	0.59
2008-09	0.28	1.30	1.58
2009-10	0.26	-0.13	0.13
2010-11	2.48	3.93	6.41
2011-12	36.81	0.97	37.78
2012-13	7.89	0.29	8.18
2013-14	14.91	0.75	15.66
2014-15	48.13	9.53	57.66
Total	**111.32**	**16.67**	**127.99**

Audit observed that unadjusted balances were remaining outstanding for more than five years. On further analysis it was revealed that payments made against proforma invoices, ad-hoc payments against pending POs, payments made through Letter of Credit *etc.* were included under advances. Adjustments against materials received against these advances were pending in the system for pairing with corresponding liability. This indicated system weakness leading to lack of monitoring mechanism.

Expeditious action needs to be taken for recovery of the advances before the same are rendered irrecoverable. Any delay in adjustment of advances results in blocking of borrowed funds and consequent increase in finance cost to the Company.

Management assured (December 2013) to review unadjusted advances for necessary corrective action.

Audit observed (August 2015) that unadjusted advances pertaining to period prior to 2012-13 reduced from ₹169.54 crore as on March 2013 to ₹54.67crore as on March 2015 after issue of report.

8.1.4.3 Non-regularisation of advance paid to M/s Speck Systems

Audit observed on further review of the pending advances that an advance payment of ₹3.45crore (February 2012) paid to M/s. Speck Systems, Hyderabad (SS) was pending adjustment (March 2015). The advance was paid based on Letter Of Intent (LOI) issued by the Company for supply of 43 nos. of Super Structures at total price of ₹38.70 crore by February/March 2012 in anticipation of orders from Ministry of Defence (MoD) for manufacture of Command Post Vehicles. Audit observed that 14 Super Structures were supplied (February 2012) by SS and the anticipated contract with MoD did not materialise (March 2015). The Company had neither regularized the supply nor adjusted the advance paid to the supplier.

Management stated(December 2013) in reply that part payment was made with the approval of competent authority and accounting of material would be made on regularization of POs. Management further stated (June 2014) that the expected order from MoD did not materialize and hence, no purchase order was placed since it creates legally enforceable contract between the buyer and seller.

The reply is not tenable since placement of PO and payment of advance in anticipation of order from MoD was not in order. Further, the material received was not accounted in the books of accounts of the Company even as on March 2015 though the same was lying with the Company since February 2012.

8.1.4.4 Lack of validation checks in SAP relating to Purchase activity

Input control procedure ensures that all data is recorded completely, accurately and without duplication in the system. Validation checks ensure that the data entered into the system was valid. However, Auditobserved that due to absence of proper input control and validation checks, the data was incomplete and unreliable.

As per Flow Chart given in **para 8.1.2.7**, after receipt of material by Company, the inspection of materials was to be carried out before acceptance and creation of liability for making payment to vendor. Before completion of inspection, the material should not be accepted and corresponding liability towards the vendor should not be created in the system. Due to lack of such validation controls, out of 74203 line items of sample POs reviewed, it was noticed that liability was created in 1611 line items before completion of inspection and acceptance of material. Though the Management accepted (October 2009) this deficiency and agreed to address the issue in future, validation checks were yet to be put in place (March 2015).

Management stated (December 2013) in reply that as per sequence activities in ERP, creation of liability was only after inspection, payment to vendors occurs only on creation of liability and there were no payments made prior to quality clearance.

The reply of the Company was with reference to payment after quality clearance and did not address the issue of creation of liability before quality clearance and necessary validation controls needs to be in place for capturing events as per approved sequence.

8.1.5 Inventory Management

Audit Objective:*To examine and assess the effectiveness of the Inventory management system.*

8.1.5.1 Introduction

During the period of review we observed that the inventory holding of the Company increased from ₹1888.90 crore in 2010-11 to ₹2456.20 crore in

2012-13 (30 *per cent*) while the turnover increased marginally from ₹2652.24 crore to ₹2808.81 crore (5.90 *per cent*). High level of inventory holding lead to blocking of working capital. The finance cost on working capital almost doubled from ₹48.01 crore in 2010-11 to ₹82.09 crore in 2012-13. This had an impact on profitability of the Company.

Management stated (December 2013) in reply that efforts were being made to reduce finance cost through improved collections as well as reduction in inventory by the end of financial year 2013-14. It also stated that orders have been issued to liquidate old finished goods inventory after judicious cost evaluation and to curtail procurement to limit the stock to two months' consumption in respect of indigenous material.

It was observed in audit that the inventory holding of the Company reduced by ₹304.10 crore to ₹2152.10 crore in 2013-14 and further to ₹1921.20 crore as on 31 March 2015. Similarly, the finance cost also declined by ₹19.64 crore to ₹62.45 crore in 2013-14 and further to ₹30.62 crore in 2014-15.

Audit Committee is a sub-committee of the Board of Directors. This committee has to approve all financial statements before the same are submitted to the Board of Directors for approval. Though the inventory position showed increasing trend affecting the working results of the Company during the review period 2010-13, Audit committee reviewed and discussed the inventory position once in May 2010. The terms of reference of the committee did not include specific directions for periodical review of inventory.

On the recommendations of audit, the Company also included (February 2014) review of inventory in the terms of reference of the Audit Committee.

Audit reviewed the inventory management system in place in the Company. Audit findings are discussed in the following paragraphs:

8.1.5.2 Non fixing of inventory norms as prescribed in the Purchase Manual

Purchase Manual envisaged fixing of inventory norms for each type of inventory from time to time which was to be treated as the upper limit. However, such inventory holding limits were not fixed by the Company.

Management did not attribute any specific reasons for the same in their reply (December 2013).

In the absence of inventory norms as envisaged in the Purchase Manual, Audit analysed the inventory levels of the Company with reference to parameters specified in Memorandum of Understanding (MoU) entered annually with MoD for evaluating the performance of the Company. The details of parameters specified in the MoU and actual achievements there against are furnished in the **Table-55** below:

Table-55:Target and achievement of Inventory holdings

(₹in crore)

Year	MoU Criteria	Value of Production[174] (VoP)	Inventory at the end of the year	Inventory in terms of days of VoP	Achievement *vis-à-vis*MoU Criteria
2010-11	114 days of VoP	3,795.07	1,888.91	179	Inventory was 179 days against 114 days specified in the MoU
2011-12	4 *per cent* reduction in Inventory over 2010-11	4,077.19	2,422.41	214	Inventory increased by 28 *per cent* instead of reduction
2012-13	4 *per cent* reduction in Inventory over 2011-12 (VoP days)	3,359.69	2,456.20	263	Inventory in terms of VoP days was 263 days as against 205 days
2013-14	6 Months of VoP	3,165.14	2,152.10	245	Inventory in terms of VoP months was 8 months' as against 6 months'

As could be seen from the above Table, the Company did not achieve the MoU parameters in all the four years (2010-11 to 2013-14) and the inventory level remained to be high.

Management in its reply (December 2013) stated that recession in market particularly in mining and construction business led to piling up of finished goods inventory and revision of production plans which in turn led to piling up of raw material inventory resulting in under performance**.**

The reply indicates that procurement was not revised with revision of production plans resulting in accumulation of inventory and non-achievement of targets set in MoU with MoD. Instances which led to accumulation of inventory are discussed in subsequent paras.

A. Trend in inventory of Raw material and Components

Inventory of Raw material and Components decreased from 4.01 months' consumption in 2010-11 to 3.65 months' consumption in 2014-15 as shown in **Table-56** below:

Table-56: Raw material holding

(₹in crore)

Particulars	2010-11	2011-12	2012-13	2013-14	2014-15
Stock of Raw material and components	553.94	656.74	624.40	439.10	418.04
Material consumed	1,658.81	1,846.33	1,724.27	1,617.34	1373.68
Inventory of raw material in terms of months' consumption	4.01	4.27	4.35	3.26	3.65

[174] Gross value of production which measures the actual production output

Management in its reply stated (December 2013) that action was being taken to curtail the procurement so as to limit the stock equivalent to two months consumption in respect of indigenous material which would reduce inventory during the FY 2013-14.

Efforts of the Management did not yield desired results as inventory continued to be more than targeted level of two months of consumption. However, as could be seen from the above table, inventory of Raw material and components reduced to ₹439.10 crore in 2013-14 and further to ₹418.04 crore in 2014-15 indicating curtailment of procurement activity after review by audit.

Audit also observed that in case of procurement for Armoured Recovery Vehicles, the Company adopted good practice by putting on hold the supplies from indigenous vendor pending reassignment of contract with foreign vendor though formal POs were placed to avoid blocking of inventory.

B. Finished Goods inventory levels

The Finished Goods Inventory **(**FGI) of increased by 66 *per cent* from ₹444.39 crore in 2010-11 to ₹ 737.70 in 2013-14. FGI in terms of months' turnover was above two months' in all the years during the review period as shown in the **Table-57** below:

Table-57: Finished Goods holding

(₹in crore)

Year	2010-11	2011-12	2012-13	2013-14
Finished Goods	444.39	739.59	680.45	737.70
Turnover	**2652.24**	**2726.49**	**2808.91**	**2911.51**
Inventory of FGI in terms of months turnover	2.01	3.26	2.91	3.04
Percentage of Finished goods to total inventory	23.53	30.53	27.70	34.28

Management attributed (December 2013) recession in market, severe competition and dumping of price by international players, obsolescence and non-moving of projects/models particularly in mining and construction business for accumulation of FGI**.**

The Company operates in diversified sectors with different market conditions. The production plan varies between 'made to order' and 'made to shelf' categories. Non-fixation of specific inventory norms as envisaged in the manual leads to absence of an effective mechanism for inventory control. The increase in percentage of finished goods to total inventory in 2013-14 was due to conversion of Raw material and work-in-progress into finished goods.Further, though the Company attributed obsolescence and non-moving of projects/models particularly in mining and construction business for accumulation of FGI, no specific identification of the obsolete products was carried out by the Company and hence, the impact of obsolescence on the FGI could not be verified in Audit.

8.1.5.3 Non-revision of Stores Manual

Stores Manual deals with various functions of stores department and the procedures, documentation and accounting to be followed in receipt, stocking, maintenance and drawl of various items of inventory. The stores manual issued in May 1990 was not updated since then. SAP covering stores functions was implemented in 2007.After implementation of SAP, all stores related data and processes were captured and maintained online. As a result, the process of maintaining bin cards, raising of MPRS, receipt and issue vouchers manually was discontinued. These changes were not reflected in the Stores Manual resulting in the Stores Manual not being in sync with SAP.

Management in its reply stated (December 2013) that action was being initiated for revision of the Stores Manual synchronizing with SAP. Management further stated (August 2015) that the Stores Manual was under revision and proposed to implement from January 2016.

8.1.5.4 Accounting of material prior to receipt contrary to provisions of Purchase Manual

In on-line system transactions are captured as it happens. Material received by the Company at the gate is moved to Stores Department for raising of Good Receipt Note (GRN). After GRN, Inspection is conducted by Quality department and cleared materials are accounted as Receipt.

SAP allowed posting of the transactions relating to two months at any given point of time *i.e.* previous month and current month. Due to keeping open two months period, the system accepts transaction ante-dated up to two months. This defeated one of the objectives of 'on-line access to the information'.

Due to above system provisions, on a review of 74203 line items related to sample POs placed during 2010-11 to 2012-13, Audit observed that in respect of 9047 line items, GRN date captured was prior to date of receipt at gate.

Management stated (December 2013) in reply GRN entry date follows date of receipt at gate, sequence was system driven and controls exist in the system as per the posting date.

The reply of the Management has to be viewed in the following context:

- Gate entry date was the system date (*i.e*. date on which it was entered in the system) whereas GRN date was entered by the user of the system. Audit verification in the sample cases revealed exceptions to process flow due to keeping periods open for two months. Bringing the system on-line by managing periods with calendar months would avoid above discrepancies.

- In spite of pointing out delayed opening of periods in SAP and its impact in earlier audit report[175], the Company continued with same practice.

- Keeping two months open during closure of accounts would lead to recognizing sales of incomplete equipment where materials were received and accounted subsequent to closure of financial year undermining the internal controls as observed in earlier report[176]. Hence, the controls need to be reviewed to avoid recurrence of the same.

8.1.5.5 Non-confirmation of material issued to sub-contractors contrary to provisions of Purchase Manual

Production divisions of the Company are allowed to outsource/sub-contract activities with due approval from Corporate Office considering the capacity constraints. As per the provisions of Purchase Manual, raw material issued against sub-contract orders are to be regulated in accordance with the delivery schedule and periodical confirmation/reconciliation are to be obtained by the sub-contract cell.

Material valued ₹10.53 crore were lying with sub-contractors (March 2014) as indicated in the **Table-58** below:

Table-58: Value of material lying with sub-contractors

(₹in crore)

	Material with sub-contractors as at end of March	
Division	**2013**	**2014**
Bangalore	9.21	3.12
Palakkad	0.15	0.05
KGF Complex	4.03	3.33
Mysore Complex	5.72	4.03
Total	**19.11**	**10.53**

SAP was not configured to generate year-wise breakup of the materials lying with the sub-contractors. In the absence of year-wise breakup of the materials, the details of period since when the materials were lying with the sub-contractors, value of materials lying and the impact of non-returning of the materials by the sub-contractors could not be ensured in Audit.

Management stated (December 2013) in reply that divisions were advised to collect confirmation of balance for material lying with third parties.

Though the material lying with sub-contractors reduced from ₹19.11 crore as at the end of March 2013 to ₹10.53 crore as at end of March 2014 after being

[175] Report No.10 of 2010 Chapter IV – Information Technology Audit of IT systems in selected Public Sector Undertakings .

[176] Report No. CA 24 of 2009-10 – Chapter VI - Deliberate violation of internal procedures for recognition of sales

pointed by audit, process of obtaining confirmation of balances needs to be streamlined and consistently followed.

8.1.6 E-procurement system

Audit Objective:*To examine and map the procedure followed in e-procurement to ensure that they are documented and are in consonance with Purchase Manual, CVC guidelines and STQC requirements.*

8.1.6.1 Failure to conduct third party audit as stipulated in CVC Guidelines

Audit reviewed the SRM module to ascertain its efficacy and to assess whether it was introduced for a competitive and transparent procurement system. CVC guidelines (April 2010) on e-tendering solutions stipulated that a comprehensive third party audit was to be conducted to ensure compliance to Information Technology Act and Government of India also stipulated to get e-procurement system mandatorily tested and audited by Standardisation Testing and Quality Certification (STQC) Directorate under Department of Electronics . However, no third party audit was conducted to ensure compliance to guidelines in this regard.

Management replied (December 2013) that third party audit was planned to be carried out after updation of SRM version. Accordingly third party audit wascompleted and report received (January 2015) wasunder examination (August 2015).

8.1.6.2 Lack of security features

E-bidding is the electronic equivalent of traditional manual tendering process. In e-Bidding, the bid invitations (tenders) are published by Company to bidders online and the bidders can submit their bids online till the submission deadline. The bids submitted by the bidders are required to be available for display to the authorized persons only after the opening date and time for further processing. The details of e-bidding carried out by the Company during the period 2010-11 to 2013-14 areindicated in **Table-59** below:

Table-59: Details of e-bidding carried out by the company

(in Numbers)

Sl. No.	Particulars	2010-11	2011-12	2012-13	2013-14
1	e-bidding tenders	8,577	13,790	12,426	12,113
2.	Local vendors	8,572	13,785	12,418	12,107
3	Foreign vendor	5	5	8	6

It could be seen from the above that only 24 foreign vendors participated in the e-bidding carried out by the Company during four years period 2010-14. The Company reported (December 2013) that due to lack of security features in SRM, foreign vendors were hesitant to share their technical documentsin e-mode leading to poor participation of foreign vendors under 'Import Tender' category.

Management stated (December 2013) in reply that apprehensions were not limited only to the Company alone as the security features were inadequate. Procedures for obtaining digital signature were cumbersome involving certification of the documents of the vendors by the Embassy. Hence, these procedures deter the foreign vendors from participating in E-tenders and efforts were being made to improve foreign vendor participation.

The Company should ensure security of the e-procurement systems for better participation by the foreign vendors in terms of CVC circular (January 2012).

Management further stated (August 2015) that upgradation and integration of present SAP and SRM was being taken up, which would address the security concerns of foreign vendor, resulting in increased participation.

8.1.6.3 Decline in reverse auction process

E-Auction, which is also called as Reverse auction, is an electronic auction where suppliers bid and compete against each other online in real time for purchase orders/contracts for products/services against a published specification and pre-established criteria. E-Auction enables online, real time dynamic price negotiation. The process of reverse auction is very much transparent as bidders get to know their status dynamically during the course of the reverse auction. Reverse Auctions are normally conducted for items where the specifications are well defined, where there are at least three vendors and where the current market trend indicates that there is scope for competitive bidding. Audit observed that the reverse auction in the Company declined from 120 to 24 during the period 2010-13 due to which the benefits of operational efficiency and cost effectiveness/reduction were forgone.

Management in its reply stated (December 2013) that reverse auctions work effectively when there isdecreasing trend of prices for raw materials, power, fuel, *etc.* Due to the increasing trend of prices in the market over the last three years, reverse auction wasnot found as an effective tool for getting competitive prices.

The reply of the Company that reverse auctions work effectively when there wasdecreasing trend of prices for raw materials, power, fuel, *etc.*, could not be verified since the Company did not furnish any data to support the same. As the reverse auction minimizes human involvement, offers greater insight into the current market pricing, reduces time spent in arriving at final prices and gives equal opportunity to all short-listed suppliers to be more competitive, the Company should strive to increase the reverse auctions.

Conclusion

Post tender negotiations resorted to by the Company and amount of Bank Guarantees obtained for advances paid were in deviation to the Purchase Manual and CVC guidelines. Documentation of all the activities relating to procurement was inadequate. Vendor management was not foolproof due to non-availability of data regarding all the tenders in the system and Vendor list contained duplicates indicating lack of sufficient controls in SAP. The procedure prescribed in the Purchase manual was not followed for evaluation of vendors. Stores manual was not updated for last 25 years, SRM system of the Company lacked confidence of foreign vendors due to inadequate security features. No integration of data between SAP and SRM was provided.

Recommendations

1) Post tender negotiations may be restricted to exceptional cases in line with Purchase Manual/CVC guidelines with proper documentation.

2) SRM system may be upgraded to include data of all the tenders so that all the reports necessary for Vendor management as stipulated in the Purchase Manual could be generated and provisions of Purchase Manual complied with.

3) Vendor evaluation procedure may be carried out as per Purchase Manual.

4) Internal controls in SAP may be enhanced so as to avoid duplication of vendors.

5) Outstanding advances may be reviewed and cleared without further loss of time before the advances are rendered irrecoverable to protect Company's interests.

6) Inventory holding norms needs to be fixed as envisaged in purchase manual in order to maintain optimum level of inventory.

7) Stores manual may be updated periodically.

8) Adequate internal control system may be put in place for material issued to sub-contractors in the interest of the Company.

9) Participation of e-tendering system may be improved for including foreign vendors by enhancing security features and facilitating digital signature.

10) Reverse auction process may be conducted for getting better competition.

BEML LIMITED

8.2 Loss of ₹4.90 crore due to non-synchronisation of delivery schedules in back to back contract.

Failure of the Company to take up revision of delivery schedule with the customer while revising the delivery schedule of the supplier resulted in loss of Liquidated Damages (LD) of ₹4.90 crore.

BEML Limited (Company) received a purchase order (PO) from Northern Coalfields Limited[177] (NCL) for supply of two Rope shovels[178] alongwith accessories and consumables on FOR destination basis to be delivered within 15 months and 15 days from the date of placement of order *i.e.*, by 15September 2010 at a total value of ₹47.48 crore. Erection and commissioning was to be completed by BEML within 60 days of the receipt of complete equipment at site. As per the terms of the PO, delay in delivery of the equipment attracted liquidated damages (LD) of 0.5 *per cent* per week of the price of any stores not supplied subject to a maximum of 10 *per cent* of the contract value and delay in erection/commissioning of the equipment attracted LD of 0.5 *per cent* per week of the landed price of equipment subject to a maximum of 5 *per cent* of the contract value.

BEML placed a PO (August 2009) on M/s. Bucyrus International Inc., USA (BII) for supply of two sets of CKDs[179] of Rope Shovels on back to back basis to be delivered by the end of June 2010 on Free On Board (FOB), United Kingdom(UK)/United States America (USA) port. The Company amended (October 2009) the delivery schedule at the request of BII as 40 weeks and 44 weeks from the date of amended POs. As per the amended delivery schedule, BII was to deliver the CKDs by August 2010 and September 2010. Considering the fact that delivery term of BII was FOB UK/USA port and after taking into account the time required for transportation of CKDs from UK/USA port to NCL site, the revised schedule extended beyond the delivery period stipulated by NCL. The Company did not obtain extension of delivery schedule from NCL.

BII supplied the CKDs to M/s. Balmer&Lawrie (Freight forwarder of the Company) on 27 July 2010 and 17 August 2010 after a delay of ten days and four days respectively. However, the CKDs, were received in the Company only on 8 October 2010 and 10 December 2010 and delivered to NCL in December 2010. Erection and commissioning was completed during May 2011 to July 2011. Due to the delay in supply and erection of the rope shovels,

[177] NCL , Singrauli, Madhya Pradesh - A subsidiary of Coal India Limited, a Government of India undertaking;
[178] 10 Cum AC Electrical Rope Shovels;
[179] Complete Knock Down of groups and components;

NCL levied LD of ₹3.03 crore towards the belated supply of equipment and ₹1.87 crore for the delay in erection and commissioning of the equipment.

Management in its reply (December 2013) stated that the amended delivery schedules were within the customer's delivery schedules. As the delay in shipment of the consignment was attributable to the forwarder, recovery of LD from M/s. Balmer&Lawrie was under consideration.

Reply is not acceptable since the Company while revising the delivery schedule with the supplier did not simultaneously take up the revision of delivery schedule with the customer which was imperative in back to back contracts. Further, though the Management stated in December 2013 that recovery of LD from M/s. Balmer&Lawrie was under consideration, the Company had not preferred any claim till date (September 2015).

Thus, failure to synchronise the delivery schedule of the supplier with the delivery schedule of the customer resulted in levy of LD of ₹4.90 crore.

8.3 Blocking of funds due to accumulation of Inventory - ₹16.14 crore

Continued procurement of raw materials when the new technology was yet to be proven and production of dumper without matching shovel resulted in blocking of inventory valued ₹16.14 crore.

M/s BEML Limited (the Company) was manufacturing BD-475 Dozers and BH 150E Dumpers. The dozer was used for clearing the bolders/debris in mines and the dumper was used for carrying overburden in mines.

Audit observed that due to continued procurement of raw materials when the new technology was yet to be proved and manufacture of dumper only without matching shovel, inventory valued ₹16.14 crore was blocked as discussed below:

a) BD-475 Dozers

The Company planned production of five numbers of BD 475 model dozer during 2008-09 even though one dozer valued ₹2.39 crore manufactured in 2003-04 was still lying in inventory. In accordance with the production plan, the Company procured raw materials valued ₹4.77 crore (July 2009 to June 2011) and manufactured one dumper during 2008-09 at a total cost of ₹3.39 crore. The Company stopped the production of dozers from 2009-10 but continued with the procurement of raw materials. Both the dozers remained unsold and were lying in stock (March 2015). Considering obsolescence of the dozers, the Company made provision for ₹4.57 crore towards diminution in value of the dozers (thereby the value of two dozers reduced to ₹1.21 crore). As the Company stopped production of the dozers from 2009-10 due to lack of demand, utilisation of Raw Material[180] valuing ₹3.37 crore and work in progress valuing ₹1.71 crore was un-certain. Continued procurement of raw materials despite two dozers remaining unsold resulted in accumulation of inventory to the extent of ₹6.29[181] crore as at March 2015.

Management stated (December 2013) in reply that Company was manufacturing dozers from 1992 under collaboration from M/s Komatsu. In view of withdrawal of collaboration support from M/s Komatsu, development of electronic engine was taken up with M/s Cummins and performance related issues were observed during in-house trials. Management further added that efforts would be made to use unutilised inventory in production of other models and sale as spares to liquidate the same.

Though the Company could not succeed in development of dozer model with electronic engine, continued procurement of raw materials when the new technology was yet to be proved resulted in accumulation of inventory.

b) BH 150E Dumpers

The Company, considering the market potential of BH 150 dump trucks, placed (July - October 2011) orders on M/s General Electric (GE) for design, development, supply and commissioning of one number of 150H Dump truck at a total landed cost of ₹10.20 crore. The production of the dumper was completed (December 2012) at a total cost of ₹9.85 crore. However, the Company did not manufacture the matching shovel required and hence, the dumper manufactured could neither be sold nor deployed for field trials.Due to non-availability of matching shovel, feasibility of sale of dumper is remote and Company continued to hold dumper valued ₹9.85 crore in the finished goods inventory (March 2015).

Management stated (December 2013) in reply that Company could not participate in tender for 150Tdumpers in 2007 due to qualification criteria and decision was taken in December 2010 to design and develop a prototype as no technology partner was available.

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[180]339 items including Bearing, Track Shoe assembly, Seal Ring Assembly, Recoil Spring and bushing Assembly procured between May 2009 to March 2011

[181] Finished Goods valuing₹1.21 crore + Raw Materials valuing₹3.37 crore + Work in progress valuing₹1.71 crore

Specific reasons for manufacture of only dumper without matching shovel were not stated. The sale of dumper was not certain since matching shovel was not developed and resulted in blocking of ₹9.85 crore in inventory for more than two years.

The matter was referred to Ministry in January 2015 and their reply is awaited (September 2015).

(PARAG PRAKASH)
Director General of Audit
Defence Services

New Delhi
Date: 26 November 2015

Countersigned

(SHASHI KANT SHARMA)
Comptroller and Auditor General of India

New Delhi
Date: 26 November 2015