PA Section

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Performance audit of

Procurement of Stores and Machinery in Ordnance Factories

(Ministry of Defence)

Report of the
Comptroller and Auditor General
of India
for the year ended March 2006

Union Government (Defence Services)
Ordnance Factories
No.19 of 2007
(Performance Audit)

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PREFACE

This report contains results of performance audit of "Procurement of Stores and Machinery in Ordnance Factories" under Department of Defence Production, Ministry of Defence and has been prepared for submission to the President of India under Article 151 of the Constitution.

The audit was conducted through test check of records (pertaining to the period 2001-06) of 20 selected Ordnance Factories and Ordnance Factory Board under the Ministry of Defence, Department of Defence Production.

OVERVIEW

A performance audit of procurement of stores and machinery was conducted in 2006 in 20 of the 39 ordnance factories to assess the efficiency, economy and effectiveness of their systems. Methods and procedures in assessment of requirements, finalisation of orders, receipt and inspection of stores and machinery as well as monitoring and internal control mechanisms in these factories were scrutinised. The appraisal revealed shortcomings right from planning to execution of all related activities as evident from recurring instances of over-provisioning and injudicious procurement of stores and machinery, inordinate delays in processing of tenders and finalisation of purchase orders, inadequate pre-despatch inspection and delays in commissioning of machines. Such a situation led to certain adverse impacts like idling of resources adding to the inventory carrying cost, non-utilisation of machinery for the intended purposes, shortfalls in production and acceptance of sub-standard stores and machinery.

In nine factories, stores costing Rs 36.14 crore were procured in excess of requirements due to improper and inefficient assessment of requirements. Similarly, seven factories procured 751 machines costing Rs 20.93 crore without any justifiable requirements. Despite procedures intended to develop new sources of supply, factories took no action to break the visible cartel formation by the suppliers and procured stores worth Rs 472.60 crore from the suppliers forming the cartel. The inefficiency and laxity in processing and finalising the orders not only led to inordinate delays in procurement of machines, but also resulted in cost overrun of Rs 15.57 crore and non-realisation of anticipated annual savings of Rs 9.17 crore in five factories. Of these, two factories had to resort to procurement of stores costing Rs 68.62 crore due to the delays.

Inadequate pre-despatch inspection by five factories led to acceptance of sub-standard stores and machinery worth Rs 13.07 crore. Due to delays in commissioning of costly machines, 11 factories could not utilise 97

machines procured at a cost of Rs 126.01 crore for a considerable period. Besides, nine factories could not derive any benefit out of an expenditure of Rs 37.55 crore due to rejection and persistent quality problems of stores and machinery procured by them.

Proper planning and assessment of requirement, efficient and timely procurement and effective utilisation of the resources are certainly needed to achieve the production targets with expected quality and economy. There is also a need to strengthen the existing internal control and monitoring mechanisms in these areas at all levels.

HIGHLIGHTS

- **Incorrect assessment of requirement of stores coupled with ineffective monitoring at the factory resulted in over-provisioning and injudicious procurement of stores valued at Rs 36.14 crore in nine factories.**

(Paragraph 3.2.5)

- **Improper assessment of requirement of machines with reference to the existing workload as well as the known demands from the Services in medium term resulted in excess procurement of 751 machines costing Rs 20.93 crore in six factories. The Board failed to exercise effective checks while according approval to the demands of the factories. Consequently, the machines remained either underutilised or were not utilised for the intended purpose.**

(Paragraph 3.4.5)

- **Inability to break a suppliers' cartel led to procurement of stores worth Rs 472.60 crore by 11 factories from different suppliers at identical rates without ensuring the reasonableness of price.**

(Paragraph 4.2.2)

- **Ineffective controls at the factories led to delays in processing of tenders and finalisation of orders in 11 factories. This resulted in delayed receipt of stores and consequent shortfall in production of certain items in four factories.**

(Paragraph 4.2.3)

- **Delays ranging between 17 and 74 months in finalisation of orders for plant and machinery in five factories after approval by the Board resulted in cost overrun of Rs 15.57 crore, non-realisation of annual savings to the extent of Rs 9.17 crore and procurement of stores costing Rs 68.62 crore from trade.**

(Paragraph 4.4.1.1)

- **Absence of effective monitoring led to non-incorporation of appropriate terms and conditions in supply orders, which resulted**

in overpayment of Rs 1.17 crore to a supplier. Further, Rs 47.37 lakh was paid to another supplier on account of customs duty without any proof of payment.

(Paragraphs 4.2.5 and 4.4.2)

- **Inadequate pre-despatch inspections by five factories against ten orders resulted in acceptance of sub-standard stores and machinery worth Rs 13.07 crore. This led to outsourcing of jobs worth Rs 17.94 lakh and production loss of Rs 9.39 crore in two factories.**

(Paragraphs 5.2.2 and 5.4.1.1)

- **There were delays in commissioning 97 machines procured for Rs 126.01 crore in 11 factories due to failure to effectively synchronise associated civil works, ineffective pre-despatch inspection by the factory and ineffective monitoring by the Board.**

(Paragraph 5.4.2)

- **Return on an investment of Rs 37.55 crore in stores and machinery could not be derived due to rejection or other quality problems attributable to inspection deficiencies in nine factories.**

(Paragraphs 5.2.3.1 and 5.4.3.1)

Inadequate internal controls, lack of proper monitoring at the factories, lack of coordination amongst the factories and ineffective monitoring by the Board in several areas led to non-utilisation of stores, under-pricing of ammunition and improper accounting / documentation.

(Paragraphs 6.2.1, 6.2.2 and 6.2.3)

SUMMARY OF RECOMMENDATIONS

- *The Ministry may issue comprehensive orders on the lines of the 'Defence Procurement Procedure 2006' which covers capital acquisitions and 'Defence Procurement Manual 2006' which covers revenue procurement to guide the procurements made by the ordnance factories.*
- *Board may ensure that the factories work out the requirement of stores as per the prescribed policy guidelines in order to avoid over-provisioning or injudicious procurement by strengthening the existing control mechanisms.*
- *Ministry may ensure that the Board and the factories strictly follow the existing guidelines while assessing the requirement of new machines based on the production load, existing machine capacity and manpower available in the factories.*
- *Board may ensure that the factories assess the annual capacity of machines based on the cycle time stipulated in the contract taking into account standardised working-hours of two shifts each of eight hours per day.*
- *Board may ensure that the factories take urgent steps to identify more sources of supply of stores so as to follow the guidelines of the Ministry/Board to obtain timely and economic offers.*
- *In order to break any suppliers' cartel, the Board may examine the feasibility of implementing the procedures adopted by other Government Organisations such as Railway Board.*
- *Ministry may ensure that the Board and the factories finalise the orders for procurement of machinery in a time bound manner. Suitable accountability mechanism should be instituted at every stage in order to avoid delays and consequent cost overrun.*
- *Board may ensure that the factories strictly follow the procurement manual and incorporate all standard and mandatory terms and conditions in the contracts to safeguard the interests of the State. An institutional mechanism may be created for monitoring incorporation*

of all mandatory and suitable terms and conditions before finalisation of orders.

- *Board may evolve a suitable mechanism to minimise delays in inspection of stores so that these are utilised in a timely manner. Proper documentation must be maintained at every stage of such inspection / utilisation.*
- *Board may ensure that the factories carry out pre-despatch inspection of stores and machinery strictly as per conditions of the contract by instituting proper accountability mechanisms. Payment should be released only after satisfactory clearance of stores/ machinery in pre-despatch inspections.*
- *Board may ensure that the factories stipulate a specific time frame for erection and commissioning of the machines in respect of all orders, say, six months after receipt in the factories.*
- *Board may insist upon the factories to plan and execute connected civil works well in advance before receipt of machinery so as to avoid delay in its erection and commissioning by instituting a suitable control mechanism.*
- *Ministry may ensure that the Board and the factories strengthen their internal control and monitoring mechanisms in the areas like planning and assessment of requirements, production, accounting and documentation of related activities.*

Performance Audit of Procurement of Stores and Machinery in Ordnance Factories

CHAPTER I: INTRODUCTION

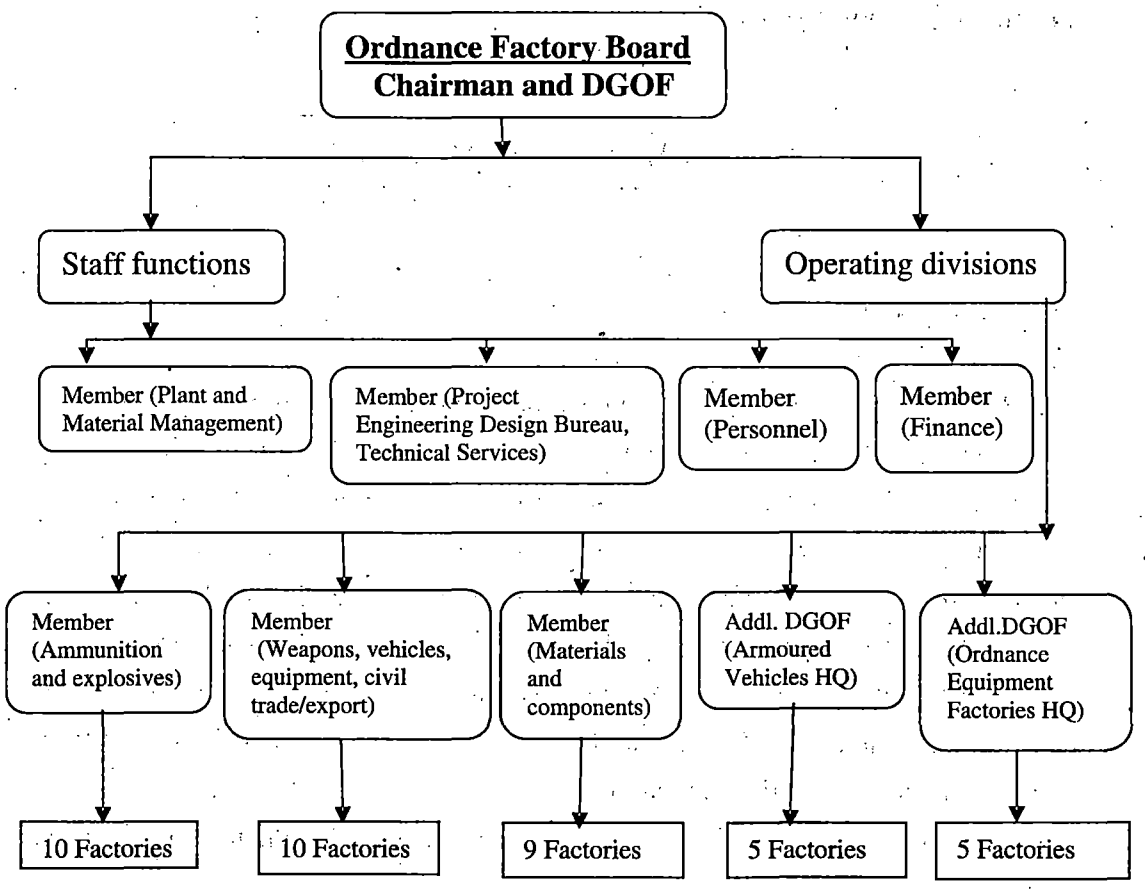
1.1 General

The Ordnance Factory Organisation is the largest industrial set up under the Department of Defence Production of the Ministry of Defence. The primary objective of the organisation is to equip the Indian Armed Forces with modern and sophisticated weapons, ammunition, armoured vehicles, transport vehicles and equipment manufactured indigenously either through production under licence or from designs developed by the Defence Research and Development Organisation with a view to achieving self-reliance. The technologies are selected to ensure high quality, reliability and productivity covering a wide spectrum of items. Ordnance Factories endeavour to diversify the customer base to non-defence sectors and export to friendly countries wherever adequate capacities are available.

1.2 Organisation

A network of 39 ordnance factories is engaged in production and supply of various items to the Armed Forces. At the apex level, the factories are managed by the Ordnance Factory Board (Board) which is responsible for policy formulation, supervision and control apart from coordination with the Armed Forces. The Director General of Ordnance Factories, *ex- officio* Chairman of the Board is assisted by nine Members/ Additional Director General of Ordnance Factories who are in charge of various staff functions and operating divisions. The organisational set up is indicated in Chart -1 below:

Chart 1: Organisation of Ordnance Factory Board



The flowcharts of activities and agencies involved with regard to procurement of stores and machinery are depicted in Annexure-I.

1.3 Budget and expenditure

1.3.1 Ordnance factories procure stores and machinery from indigenous sources, foreign firms as well as sister ordnance factories. The budget allotment, total expenditure and expenditure on procurement of stores[1] and machinery under revenue and capital heads during 2001-02 to 2005-06 are indicated in Table 1 below:

[1] ***Stores procured through local purchase, central purchase from trade/ import excluding stores received from sister factories***

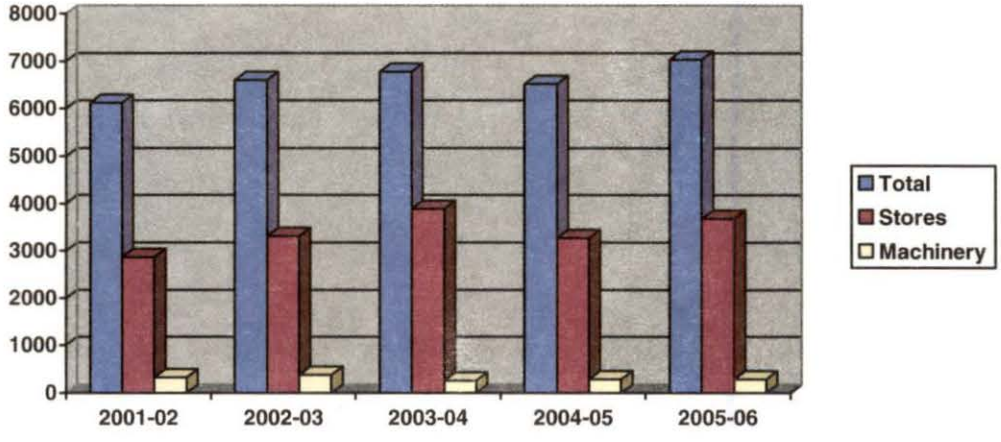
Table 1: Budget allotment and expenditure

(Rs in crore)

Year	Budget allotment	Actual expenditure	Expenditure on procurement of	
			Stores	Machinery
2001-02	6215.24	6124.34	2871.61	322.67
2002-03	6821.77	6606.43	3311.80	375.19
2003-04	6858.20	6776.73	3885.87	256.06
2004-05	6532.81	6525.74	3276.65	279.65
2005-06	7112.18	7030.75	3686.54	278.77

The share of expenditure on procurement of stores and machinery vis-à-vis total expenditure are also depicted in bar chart shown below:

Chart 2: Year-wise share of expenditure



The expenditure on stores took a major share of the budget of the Ordnance Factory Organisation and thus procurement activity requires highest attention of the factory management.

1.3.2 The cost of production and stores consumed in production in Ordnance Factory Organisation during 2001-02 to 2005-06 are as under:

Table 2: Year-wise cost of production vis-à-vis stores consumed

(Rs in crore)

Year	2001-02	2002-03	2003-04	2004-05	2005-06
Cost of production	7612.07	7908.69	8253.05	8331.74	8811.59
Stores consumed	4706.15	4987.13	5402.30	5384.96	5664.73
Percentage	61.82	63.06	65.46	64.63	64.29

The table indicates that on an average, stores accounted for around 64 *per cent* of the cost of production in the Ordnance Factory Organisation. This underlines the importance of provisioning and procurement of right quality and quantity of stores at the right time and at the right price. Stock out of a single item would clog a production line which would not only deny and delay essential supplies to the Armed Forces but would also have adverse financial repercussions. At the same time, an inflated inventory would not only lock up scarce capital but also add to the cost of care and custody and in the long run lead to wastages. Every effort is therefore required to control the cost of material in order to reduce the cost of production. Besides, investment towards procurement of plant and machinery also plays a vital role in Ordnance Factory Organisation for ensuring higher productivity and better quality of various items.

Audit, therefore, considered procurement of stores and machinery in ordnance factories a 'high risk' area as this had an impact on timeliness and quality of end products issued to the Armed Forces.

1.4 Scope of audit and audit objectives

Of the 39 ordnance factories, 20 factories as indicated in Annexure-II were included in the scope of the performance audit, covering the period from 2001-02 to 2005-06.

The performance audit of procurement of stores and machinery was conducted between April and August 2006 to assess whether:

- the policies and procedures on procurement were appropriate and adequate;
- the requirement of stores and machinery as assessed by the ordnance factories was realistic, based on their estimated needs to meet production programmes;
- the factories finalised the orders for stores and machinery so as to ensure purchases from the right source, at the right price and in the right quantity;
- the required stores and machinery were received in ordnance factories in time and met the desired quality parameters;
- the stores and machinery procured had been effectively and efficiently utilised to accomplish the allotted production targets while maintaining the desired quality of end products, and

- the control and monitoring of various activities were exercised effectively by the ordnance factories concerned and the Board at the apex level for ensuring timely procurement of quality stores and machinery in an efficient and economic manner.

1.5 Audit criteria

The following audit criteria were adopted to evaluate procurement activities in these factories:

- system of assessment of requirement of stores to meet the annual production programme;
- justification for procurement of machinery;
- system of monitoring and internal control in critical areas of procurement activities;
- timely procurement action to meet the annual production programmes of end products;
- floating of tender enquiries and timely finalisation of contracts as per laid down instructions;
- incorporation of all standard clauses in the purchase order to safeguard the interest of the Government;
- inspection of stores and machinery to ensure adherence to the prescribed specification and quality as per contract;
- timely receipt of stores and machinery as stipulated in the contract;
- commissioning of machines as per contract and proving of capacity, and
- release of payment to the supplier as per contract terms.

1.6 Audit methodology

1.6.1 The performance audit was conducted by examining purchase orders placed by the 20 ordnance factories as per quantum of scrutiny indicated in Table 3 below:

Table 3: Quantum of scrutiny

Value of purchase order	Quantum of scrutiny
Above Rs 1 crore	100 *per cent*
Above Rs 50 lakh up to Rs 1crore	50 *per cent*
Above Rs 30 lakh up to Rs 50 lakh	25 *per cent*
Above Rs 10 lakh up to Rs 30 lakh	10 *per cent*

Out of 1,85,757 purchase orders valuing Rs 16,208 crore finalised for procurement of stores and machinery during 2001-02 to 2005-06, Audit examined 4033 orders valuing Rs 7121 crore as per the above quantum.

1.6.2 The audit objectives and criteria were firmed up after an entry conference with the Board held in June 2006. Exit conference was held in February 2007 with the Board wherein the audit findings were discussed and the Board's responses noted. The views of the Board have suitably been incorporated in the report.

1.7 Acknowledgement

The Chairman and the members of the Board, Principal Controller of Accounts (Factories), Senior General Managers/General Managers and their officers and staff and Heads of Accounts establishment of all the 20 ordnance factories had extended full co-operation during the audit which is gratefully acknowledged.

The draft performance audit report was issued to the Ministry and the Board in October 2006 with the request to furnish their response within six weeks. No reply was received from the Ministry till April 2007. The Board offered its comments in March 2007. Audit findings and conclusions in this report are, therefore, constrained with the limitations of not having the response from the Ministry.

CHAPTER II: POLICIES ON PROCUREMENT

2.1 General

In order to ensure greater transparency in the procurement process, timely acquisition of stores and machinery conforming to prescribed quality, broad – based competition and optimal utilisation of funds allocated, it is essential that well defined procurement policies and guidelines should exist in Ordnance Factory Organisation. This shall cover the following aspects:

- Transparency and justification in proposals for indigenous and foreign procurement ;
- Transparent evaluation and short listing of suppliers with reference to established norms;
- Uniformity in interpretation of various contracting clauses and issues;
- Clear time frame for each stage and process of procurement so as to cut down delays and bring in accountability;
- Assessment of reasonability of prices;
- Conformity with statutory provisions, Government manuals/ instructions and guidelines of Central Vigilance Commission (CVC).

2.2 Provisioning procedure

2.2.1 The provisioning procedure followed by ordnance factories was prescribed in June 1973 by the Ministry and it envisaged provisioning on the basis of firm orders from the Services to be placed four years in advance. Subsequently, placement of orders on four yearly roll-on basis was replaced by annual issue programme which is finalised before the beginning of each financial year. In view of the changed circumstances, the Board forwarded (April 1999) a revised provisioning procedure to the Ministry for its approval. The Ministry directed (May 2000) the Board to resubmit the proposals in the light of provisions of General Financial Rules and guidelines of CVC. The Ministry specifically sought justification for increase in the utilisation period from existing six months to 12 months while initiating provisioning action for

indigenous stores, especially in view of the easier availability of stores from market sources, as compared to the past. However, the Board issued the Material Management and Procurement Manual in November 2005 duly taking into account the increased utilisation period of 12 months and merely mentioned that the Ministry's approval was awaited.

As regards procurement of plant and machinery, the Board updated (May 2001) the existing guidelines taking into account various policy decisions of the Government under the changed industrial scenario and instructions issued by the Ministry from time to time. The Defence Procurement Procedure 2006 issued by the Ministry of Defence permitted the Board to continue to follow their own procedure for procurement. The Board has not brought out any updated procedure as has been done by the Ministry in respect of the three Services viz. the Army, Navy and Air Force for capital acquisition.

2.2.2 The annual production target for various items as fixed by the Services and the Board before commencement of a financial year forms the basis for initiating provisioning action for raw materials required by ordnance factories. Besides, a factory can also allow for provision of 25 *per cent* quantity for the first quarter of the next year. The net requirement of stores is then arrived at duly taking into account the existing stock, dues in and work-in-progress. However, the overall inventory holding of a factory should not exceed a maximum level of three to six months' requirements at any point of time. Deliveries against procurement contracts should be staggered in such a way that the actual stock of the factory is restricted within the maximum levels in consonance with the production/ issue plan of the factory.

2.2.3 As regards machinery, the proposals for procurement should be necessarily based on a realistic assessment of production load vis-à-vis known demand from the Services at least in the medium term (5 to 10 years time scale).

2.3 Deficiencies in the existing policies/ systems

2.3.1 Ordnance Factory Organisation did not have a consolidated and updated procurement manual till November 2005. Hitherto, ordnance factories were

following the old procurement manuals. Due to issue of policy instructions in piece-meal manner on procurement related matters, some practical difficulties were encountered in observance and execution of relevant clauses, as acknowledged by the Board. The Board also admitted that the receipt of annual production programme from various Service indentors at different intervals led to difficulties in finalising the requirements of input materials.

2.3.2 The Material Management and Procurement Manual (clause 3.1.1.2) stipulates that 'provisioning action for indigenous direct material shall be initiated at least six months in advance of the period of utilisation which will be 12 months i.e. provisioning action will be taken for a maximum period of 18 months, less stock and dues'. This is contradictory with another provision in the same manual [clause 3.1.1(a)] according to which provisioning action for any item may be done for the annual production programme of a particular year plus 25 *per cent* quantity for the first quarter of the next year i.e. to meet the requirement of input materials for a maximum period of 15 months. This inconsistency in the procurement policy needs to be addressed.

2.3.3 Formation of cartel[2] amongst suppliers has been a bane for the Ordnance Factory Organisation as the Board's procurement manual does not provide any safeguard against this trend. This has also been duly acknowledged by the Board. The details of formation of cartel amongst suppliers to ordnance factories and its adverse impact are discussed in succeeding paragraph 4.2.2.

2.3.4 Though the Board's guidelines (July 1998) for procurement of plant and machinery stipulated specific time schedules for various activities commencing from floating of tender enquiries up to the stage of final approval for placement of orders, yet it did not stipulate any definite time frame for finalisation of orders. In the absence of the same, factories delayed finalisation of orders which ultimately led to cost overrun and deprivation of envisaged savings. The details are discussed in succeeding paragraph 4.4.1. This had also defeated the very objective of cutting down delays in procurement and bringing in accountability for such delays.

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[2] ***A collusion amongst two or more suppliers who quote identical rates for a particular item to bag share of orders, thereby depriving the factory of having competitive and reasonable rates.***

2.3.5 The Board's guidelines are also silent about specific time schedule for commissioning of machinery after its receipt in the factory. Because of this, none of the factories specified the time schedule in any of the orders finalised for procurement of machinery. As a result, no punitive action could be taken against the suppliers for inordinate delays attributable to them in commissioning the machines.

Recommendations

- *The Ministry may issue comprehensive orders on the lines of the 'Defence Procurement Procedure 2006' which covers capital acquisitions and 'Defence Procurement Manual 2006' which covers revenue procurement to guide the procurements made by the ordnance factories.*

CHAPTER III: PROVISIONING

A – Stores

3.1 General

3.1.1 The Board finalises the annual production programme for various items in consultation with the Armed Forces before commencement of each financial year and communicates the production target to the factories concerned for undertaking manufacture and issue of the items. The factories then draw up production plans based on annual target and initiate provisioning and procurement of raw material/ components required for manufacturing the end product. Apart from forecasting the requirements for the ensuing financial year, a factory can also allow for provision of 25 *per cent* of the quantity for the first quarter of the next year. The net requirement of stores is then arrived at duly taking into account the existing stock, dues in and work-in-progress.

3.1.2 The following control mechanisms are in place to ensure that the requirement of stores is correctly assessed:

- Material control office of a factory ensures the correctness of various inputs such as production programme, material estimates, stock, work-in-progress and particulars of dues in before arriving at net requirement;
- Accounts office checks all facts and figures before vetting the net requirement;
- Final checks are also exercised by provisioning section of a factory and Tender Purchase Committee (TPC) based on updated information before placement of order, and
- Monitoring of various activities at the Board level.

3.2 Incorrect assessment of requirement

Despite the existence of the control mechanism mentioned in paragraph 3.1.2 above, Audit noticed systemic deficiencies like assessment of requirement of stores on ad-hoc basis, factory's failure in not taking into account the actual production programme, stock and work-in-progress while arriving at the net requirement and non-exercise of necessary checks by the Accounts Office. This

led to violation of procurement norms, over-provisioning and unnecessary procurement of stores. Consequently, the stores could not be fully utilised resulting in excess holding of inventory at the end of the year, blockage of resources adding to inventory carrying cost. Significant instances of such deficiencies are given in Table 4 and discussed below:

3.2.1 Non- consideration of work-in-progress and stock available

Four factories did not take into account actual stock and work-in-progress available while determining the net requirement of stores to be procured. Besides, the factories did not work out the actual requirement of stores as per the estimates for the production programme allotted and failed to adhere to the provisioning norms. These resulted in over-provisioning of stores valuing Rs 11.15 crore.

3.2.2 Injudicious/ unnecessary procurement

One factory resorted to import of fuse and bullets for two different kinds of ammunition without ascertaining the necessity of one ammunition from the Army and availability of matching components viz. primer and propellant at the factory for utilisation of the bullets. Another factory imported propellant despite availability of underutilised capacity at a sister factory for manufacture of propellant. These led to avoidable procurement of stores worth Rs 21.53 crore which were awaiting utilisation.

3.2.3 Assessment of requirement based on outstanding orders

Two factories worked out the requirement of stores on the basis of outstanding orders of the Army instead of annual production programme allotted by the Board. This led to over-provisioning of stores worth Rs 2 crore.

3.2.4 Assessment of requirement on ad-hoc basis

One factory assessed requirement of stores on ad-hoc basis without considering the actual work-load and ordered stores for quantity more than double the requirement in order to get lower rates for ordering larger volumes. Such a lapse resulted in non-utilisation of significant quantity of the stores (Rs 1.46 crore).

3.2.5 Details of the above cases, factory/Board's reply and remarks/ rebuttal by Audit are tabulated below:

Table 4: Over- provisioning of stores

Factory, Item (Supplying agency)	Gist of the case	Money value of objection (Rs in crore)	Comments of the Factory/ Board	Remarks/ rebuttal
Non- consideration of work-in-progress and stock available				
Gun and Shell Factory Cossipore Various types of materials (Trade firms)	Factory did not reflect or partly reflected quantity of work-in-progress while determining the net requirement of materials. As a result, the factory procured (December 2004- April 2006) materials much in excess of its requirement.	**1.83**	Instructions were issued to consider full quantity of work-in-progress while assessing the requirement of stores. The stores would be gainfully utilised during 2006-07.	The procurement was in violation of the approved norms.
Ordnance Factory Kanpur Steel billets for shell 125 mm HEAT (PSU)	Although the available stock of 240.54 tonnes was sufficient to meet the production target of 2000 shells for the year 2003-04, the factory ordered 50 tonnes billets in July 2003 without recording any reasons.	**0.16**	Excess materials were consumed in subsequent years and there was no financial loss as material price had gone up.	The argument was not in consonance with the approved procurement practice. The material purchased remained in stock as of August 2006. Factory planned to approach the Board for allotment of targets for 2007-08 in order to utilise the material.
Ordnance Factory Kanpur Shell bar for 105 mm (BE) smoke ammunition (PSUs)	The factory ordered (May 2004) 700 tonnes shell bar against net requirement of 426.50 tonnes for manufacture of 20,000 shells during 2004-05 plus 25 *per cent* for next year's requirement taking into account 220.18 tonnes bar available in stock. Even after manufacture of 20,320 shells, the factory held a stock of 333.24 tonnes which were issued to production shop on 29 March 2005.	**1.64**	The Board accepted the facts (March 2007) and stated that the material was consumed in subsequent years.	The procurement was against approved norms.
Ordnance Factory Ambajhari Brass blanks for 105 mm cartridge cases (Sister factory)	Despite sufficient stock of 2.99 lakh blanks to meet the production target of 1.70 lakh cartridge cases during 2004-05 and for first quarter of the subsequent year, the factory placed a demand in May 2004 for 12,000 brass blanks. The blanks received remain unused (March 2007).	**2.85**	The Board accepted the facts (March 2007).The order was placed at the request of sister factory to utilise its idle capacity. Certain technical problems noticed while processing the blanks could not be sorted out.	The procurement was against approved norms.
Ordnance Parachute Factory Kanpur Three clothing items	The factory inflated the provision quantity while assessing the requirement of these items during 2001-02 to 2004-05 by not following the prescribed procedure as it considered the current year's target along with 50 or 100 *per cent* target for the subsequent year. This resulted in over	**4.67**	Army conducted mid-term review of targets for the current year during November-December and projected tentative	Existing provisioning norms provide only for 25 *per cent* procurement for the next year. Hence, it is a violation of Board's guidelines.

(Trade firms)	provisioning of the items against three orders finalised between July 2001 and June 2004. Over-provisioned items were lying in stock at the end of the year.		requirement for the next year to initiate procurement action for 75 *per cent* of the tentative target and this formed the basis for provisioning.	
Injudicious/ unnecessary procurement				
Ordnance Factory Khamaria Fuse for 106 mm ammunition (Foreign firm)	The factory procured (March- April 2004) 12,000 fuses against an order of September 2002 to meet production target of 5000 ammunition for 2002-03 and to return 7000 ammunition taken on loan from Army depots during 1991-92. The factory manufactured 5000 ammunition in 2005-06 and issued only 3460 to Army till December 2006 and 7000 fuses could not be utilised due to refusal of Army to take back the same. As Army had not projected any requirement for this ammunition during 2003-06, lapse of the factory in not ascertaining its necessity or acceptability from Army before resorting to import led to unnecessary procurement of fuse.	**2.54**	The Board accepted the facts (March 2007) and stated that the matter had been taken up with the Army and was yet to be settled.	The procurement of 7000 fuses was injudicious.
Ordnance Factory Khamaria Bullets for 14.5 mm ammunition (Foreign firm)	The factory imported (December 2005) 1.81 lakh bullets against an order of April 2005. The bullets could not be taken on charge (August 2006) as its inspection was not carried out due to non-availability of other matching components viz. primer, propellant, etc. The import of bullets without ascertaining the availability of matching components was injudicious.	**6.73**	The case was under examination.	There was no production of ammunition during 2005-06 in spite of Army's requirement.
Ordnance Factory Varangaon Propellant for 7.62 mm ammunition (Foreign firm)	Despite unutilised capacity at a sister factory, the factory imported (June 2004) 176 tonnes of propellant to meet the production target of 2004-05.The imported propellant was not utilised as the production target was achieved by utilising propellant drawn from stock-pile[3] and that supplied by the sister factory.	**12.26**	Reply was not furnished.	The injudicious import resulted in extra expenditure of Rs 6.65 crore as compared to the cost of production of the sister factory.
Assessment of requirement based on outstanding orders				
Ordnance Factory Trichy Barrel blanks of 14.5 mm sub-calibre gun (Trade firm)	Against a requirement of 120 barrel blanks to manufacture 80 guns (for 2004-05) and to cover 25 *per cent* of next year's requirement, factory ordered (October 2004) 221 blanks which were received between March and July 2005. The blanks could not be fully utilised even during 2005-06 as the factory held 64 blanks in stock as of April 2006.	**0.22**	Procurement was initiated based on available ordered quantity and not on the target for that year alone and the items were not commonly available.	Procurement was to be done strictly based on annual production target but not based on anticipated demands or outstanding orders.
Heavy Vehicles Factory Avadi Search lights for T-72 tank (Trade firm)	The factory ordered 282 search lights (January 2005) at a cost of Rs 3.80 crore against actual requirement of 150 search lights to achieve the production programme of 120 tanks during 2004-05 plus 25 *per cent* extra for next year's requirement.	**1.78**	Factory procured 282 search lights as vetted by the Accounts Office based on outstanding orders of the Army.	The requirement is to be assessed on the basis of annual production programme and not on the basis of outstanding orders.
Assessment of requirement on ad-hoc basis				
Rifle Factory Ishapore	Against an order of 3660 rifles for 2000-01, the factory assessed requirement of 8000	**1.46**	The requirement was increased in	Annual order of the rifle declined from 3660 in

[3] ***An emergency reserve to meet production of end product at short notice***

Components of 0.22" sporting rifle (Trade firm)	each of four components on ad-hoc-basis and ordered (December 2000) 20,000 each of four components to get lower rate for ordering larger volumes. Out of 56,724 components received between May 2001 and March 2002, 48,336 components were not utilised till March 2006.		anticipation of substantial demand for the rifle but due to reduction of target, the components could not be utilised as expected.	2000-01 to 710 in 2005-06 which was far below the requirement of 8,000 rifles assessed initially.

3.2.6 Thus, nine factories failed to assess the requirement of stores in 11 cases based on realistic workload and actual production programme. This resulted in over-provisioning/injudicious procurement of stores worth Rs 36.14 crore. The Board stated that there might be certain cases of over-provisioning of stores which arose mainly due to practical difficulties in understanding relevant clauses due to issue of piecemeal policy instructions on procurement related matters and opined that such cases should not be viewed as loss or major flaws in the system as the over-provisioned stores got consumed during subsequent years. This contention is not tenable as it is not in consonance with the prudent practices in procurement as laid down in the norms and also indicate laxity in control.

Recommendation

Board may ensure that the factories work out the requirement of stores as per the prescribed policy guidelines in order to avoid over-provisioning or injudicious procurement by strengthening the existing control mechanisms.

Auditee's response to recommendation

The Board advised all the factories for strict adherence to the existing guidelines for procurement of stores for production of items for which targets were set.

B – Machinery

3.3 General

3.3.1 The factories formulate an annual plan for procurement of plant and machinery based on production load and forward the demands to the Board for clearance at one go. The Board then communicates its approval to the factories for initiating procurement action. As per the Ministry's guidelines (November 1999),

all investment decisions should necessarily be based on a realistic assessment of production load vis-à-vis known demand from the Services at least in the medium term (5 to 10 years time scale). The guidelines also envisage examination of the necessity and capacity criteria as stated below:

- Details of components/ end products required to be manufactured along with annual quantity;
- Basis of computing the annual requirement/load vis-à-vis production plan;
- Scrutiny of the production load with reference to the projected demands placed by the Services;
- Cycle time[4] data obtained from machine tool suppliers and available literature, and
- Detailed calculation of number of machines needed based on cycle time and annual outturn.

3.3.2 The following control mechanisms exist in a factory to ensure the above criteria:

- Plan Finalisation Committee at the factory assesses the actual requirement of machines based on production load vis-à-vis existing capacity and cost benefit analysis, and
- Plan Finalisation Committee of the Board scrutinises the demands of the factory before according sanction.

3.4 Unjustified procurement of machinery

The control mechanisms mentioned in paragraph 3.3.2 above notwithstanding, Audit observed systemic deficiencies like non-formulation of realistic production plan with reference to future workload, incorrect assessment of requirement with reference to existing production load, manpower and machine capacity, failure to create associated facilities and non-exercise of effective checks by the Board while according approval to the demands of the factory. Such a situation arose mainly due to lack of proper controls at the factory and the Board. This led to unjustified procurement of machines, creation of excess capacity in violation of

[4] ***Cycle time is the time required to manufacture a component or to perform a particular operation by the machine***

Ministry/ Board's guidelines. As a result, the machines procured in excess were either underutilised, unutilised or not utilised for the intended purpose. Significant instances of such deficiencies are discussed below:

3.4.1 Non-consideration of actual workload

Two factories procured three machines at a cost of Rs 95 lakh without taking into consideration the realistic workload for which the machines were procured. In fact, the workload sharply declined after commissioning of these machines. Consequently, the machines were either put to use for other purposes or transferred to a sister factory.

3.4.2 Machinery procured despite having requisite capacity

Although the existing capacities were sufficient to cater to the intended work-load, yet one factory procured three items of plant and machinery costing Rs 6.72 crore either in anticipation of enhanced workload or on the ground that the old machines had lost their accuracy.

3.4.3 Assessment of requirement of machines on the basis of single shift work

Two factories assessed the requirement of machines on the basis of single shift work and procured 1489 machines costing Rs 19.14 crore during 2001-02 to 2005-06. As the capacity of plant and machinery is computed on the basis of double shift work, requirement of machines is also to be assessed accordingly. Hence, incorrect norms adopted by the factories led to excess procurement of 744 machines at a cost of Rs 9.57 crore.

3.4.4 Procurement of machine without associated facilities

One factory procured a hydraulic press costing Rs 3.69 crore for manufacture of cabins of two types of vehicles without creation of associated facilities. Consequently, the press could not be put to its intended use and requirement of cabin was met through outsourcing.

3.4.5 Details of the above cases, the factory/Board's reply and remarks/rebuttal by Audit are tabulated below:

Table : 5 Unjustified procurement of machinery

Factory Item (Supplying agency)	Gist of the case	Money value of objection (Rs in crore)	Comments of the Factory/ Board	Remarks/ rebuttal
Non-consideration of actual workload				
Gun and Shell Factory Cossipore CNC machines (PSU)	The factory ordered 10 machines between September 1999 and January 2002 and commissioned the same between February 1999 and August 2002. The machines were required for manufacture of two lakh each of nine components of a fuse per annum. However, as per cycle time stipulated in the orders, nine machines were sufficient to manufacture the required components. Besides, the production of fuse sharply declined from 1.65 lakh in 2001-02 to 0.70 lakh in 2005-06. The target for production of fuse was fixed at only 25,000 for the year 2006-07. The factory also did not furnish (October 2001) proper justification of requirement as called for by the Board.	**0.52**	The machines were procured based on availability of 2825 machine hours in a year and were utilised for manufacture of other fuse components.	The availability of machine-hours is 3840 per year based on two shifts of working for 25 days in a month excluding 20 *per cent* for down time, absenteeism, set up time, etc. Further, production data proved that the machines were underutilised and that too, not for the intended purpose.
Ordnance Factory Trichy CNC machines (Trade firm)	Out of three machines commissioned during January – May 2002, the factory transferred two machines in July 2004 to Grey Iron Foundry Jabalpur based on their request. Transfer of two machines to a sister factory within only two years after its commissioning indicates that there was no necessity of these machines at Ordnance Factory Trichy. The machines were also not at all utilised at the factory before its transfer.	**0.43**	Due to reduced workload the machines were transferred to the sister factory for better utilisation.	The factory failed to assess the realistic workload before procurement of the machines.
Machinery procured despite having requisite capacity				
Ordnance Factory Muradnagar CNC machines (PSU)	The factory held three machines as of March 2004 for machining three types of bomb shells[5]. Against availability of 11,520 machine-hours from these machines, 10,963 hours were utilised during 2003-04 in machining 3795 bomb shells. Meanwhile, the factory procured two additional machines in anticipation of enhanced workload. After commissioning these machines (March 2004) there was availability of 19,200 machine-hours in respect of the five machines. However, the production declined steeply to 3175 shells during 2004-05 and 877 shells during 2005-06. The machine-hours utilised were only 8431 and 2235 hours respectively. In view of declining workload, procurement of two additional machines lacked justification and indicated lack of demand-forecast-based planning.	**6.42**	Audit considered body profile operation while calculating utilisation of machine-hours whereas other operations like boring, tail profile and nose threading were also carried out in these machines. The machines were utilised for other products also.	Audit's calculation of machine-hour utilisation was based on cycle time stipulated in the orders, which involved various operations like turning, drilling, boring, threading, etc.
Ordnance Factory Muradnagar	Despite having one furnace to relieve stress in manufacture of three types of bombs, the factory procured (November 2004) another	**0.30**	First furnace was procured for bomb 1000 lb	Three types of bombs were stress-relieved by the first

[5] ***Aerial bombs 1000 lb, 450 kg and 250 kg***

Stress relieving furnace (Trade firm)	furnace and commissioned the same in January 2006 for the same purpose. The order for first furnace was specifically for three types of bombs which were also mentioned in the second order. In view of significant decline in production of aerial bombs from 2004-05 onwards, procurement of the second furnace lacked justification.		and the second one for other types of bombs and these were to be stress-relieved at different temperatures.	furnace before procurement of the second one. As per technical parameters mentioned in both orders, the furnaces had three separate heating zones with temperature recorder and controller, and capacity of each furnace was 5000 kg. Hence, three types of bombs could be stress-relieved at different temperatures simultaneously, thus the reply is not tenable.
Assessment of requirement of machines on the basis of single shift work				
Ordnance Equipment Factory Kanpur and Ordnance Parachute Factory Kanpur Various types of machinery (Trade firms)	The capacity of plant and machinery is computed on the basis of two shifts of eight hours per day for 25 days per month. However, Ordnance Equipment Factory procured 798 machines between June 2001 and August 2005 on the basis of one shift of eight hours per day. This led to excess procurement of 399 machines. Ordnance Parachute Factory also procured 345 machines in excess against orders placed between April 2001 and January 2006. Thus, creation of excess machine-capacity resulted in its under-utilisation.	**9.57**	The factories could not function on double shift basis due to manpower constraints.	The capacity of machine has to be assessed on the basis of its working in two shifts. Procurement of machines should also match with manpower available for its optimum utilisation.
Procurement of machine without associated facilities				
Vehicle Factory Jabalpur Hydraulic press (Trade firm)	The factory commissioned one hydraulic press in May 2003 for in-house manufacture of cabins of two types of vehicles[6]. However, no cabin was manufactured out of this press as other associated facilities were not created. The requirement of cabin was met through trade incurring an expenditure of Rs 109 crore till March 2005. The decision of procurement of the press without creating the associated facilities reflects inefficient and improper planning.	**3.69**	The press was put to alternative use. Besides, in-house manufacture of cabin was not economical.	The Board should have considered all pros and cons before according approval for procurement of the press.

3.4.6 Thus, six factories did not efficiently assess the requirement of machines with reference to their existing workload as well as the known demands from the Services on medium term (i.e. at least on a five years time-scale). The Board also had not exercised any effective checks while according approval to the demands of the factories. This lapse resulted in procurement of 751 machines costing Rs 20.93 crore without any justification. During exit conference, the Member (Finance) of the Board stated that in certain cases, assessment of requirement of plant and machinery was not done meticulously.

[6] ***Stallion and LPTA transport vehicles***

Recommendations

- *Ministry may ensure that the Board and the factories strictly follow the Ministry's/Board's guidelines while assessing the requirement of new machines based on the production load, existing machine capacity and manpower available in the factories.*
- *Board may ensure that the factories assess annual capacity of machines based on the cycle time stipulated in the contract taking into account standardised working-hours of two shifts each of eight hours per day.*

Auditee's response to recommendations

Though the Board stated that the factories were following the guidelines of the Ministry/ Board while assessing the requirement of new machines, instances of unjustified/ excess procurement of machines indicate lack of effective monitoring/control on the part of the factory and the Board. This area needs to be strengthened to avoid recurrence of such incidents. The Board pointed out that capacity of machines in Ordnance Equipment Group of factories was assessed on the basis of single shift working as the machines were used for single shift only. However, Audit recommends that the capacity of machines is to be assessed based on working on two shifts irrespective of its actual utilisation.

CHAPTER IV: PROCUREMENT CONTRACTS AND CONTRACT ADMINISTRATION

A-Stores

4.1 General

4.1.1 After assessment of requirement of stores, the factories float tender enquiries through open, limited or single tender for selection of the right supplier for the specified items to be procured from trade. 80 *per cent* of the annual requirements of stores are procured through limited tender enquiry (LTE) from established sources and 20 *per cent* stores through open tender enquiry (OTE) for developing new sources. From March 2005 onwards, vendor development and capacity verification of vendors supplying input materials to ordnance factories are undertaken by the respective factories. Earlier this was done by DGQA. There is also a system for development of multiple or alternate vendors when established vendors form a group and quote to the disadvantage of the Government, or rates offered by them are considered high and not realistic in terms of prevailing market conditions.

4.1.2 Tender enquiries must be prepared with due care and complete details of the items required, terms and conditions, full and clear specifications and the evaluation criteria. After analysing the tenders received from vendors, comparative statement of tenders and ranking statement mentioning rate, specification, delivery schedule, etc. are prepared by the provisioning section for its submission to the TPC for selection of the right offer. The basic objective of the TPC is to enable the factories to keep in readiness the input materials for maintaining continuity in production to achieve the production target without any hold up. The representative of Finance and Accounts is invariably associated in the TPC to provide financial expertise in the decision making process. TPC's recommendations/ decisions provide necessary authority for placing orders on the suppliers.

4.1.3 In order to ensure that the system of processing tender enquiries and finalisation of orders is in line with the laid down norms of procurement, the following controls are in place:

- Factory maintains register of approved and established vendors to identify sufficient number of right sources;
- Factory places development orders to tap additional sources of supply;
- General Manager of the factory holds weekly meetings to review the progress with regard to finalisation of tenders/orders, and
- Tender Purchase Committee of factory/Board ensures selection of the right supplier and procurement of stores at the right price.

4.2 Audit findings

Despite the above control mechanisms, Audit noticed deficiencies like non-development of additional sources to generate more competition, ineffective monitoring of processing of tenders and finalisation of orders mainly due to ineffective controls of the factory. These resulted in cartel formation amongst suppliers, uneconomic purchases and delays in processing of tenders and finalisation of orders, which in turn, impeded achievement of the production target. Significant cases noticed are discussed below:

4.2.1 Issue of LTE to less than required number of vendors

Material Management and Procurement Manual stipulates that LTE may be resorted to in case of indigenous procurement and the tender enquiries should be sent to at least six approved suppliers. In case less than six approved suppliers are available, LTE may be sent to them after approval of the competent financial authority duly recording the reasons. A test check in performance audit revealed that 15 factories issued LTEs to less than six suppliers during 2001-06 in 4302 cases out of 4776 cases examined (Annexure-III). The factories attributed it to non-availability of required number of suppliers and existence of a few established sources. The factories failed to identify or develop new sources, which restricted the scope of securing competitive rates.

4.2.2 Formation of cartel

In order to avoid cartel formation and collusion amongst the suppliers, the Board requested all ordnance factories in May 2002 to advise suppliers/ tenderers to quote so as to generate competition. The Central Vigilance Commission in February 2004 also suggested to all organisations to ensure that contracts were awarded on the basis of competitive bidding at reasonable rates. Nevertheless, Audit observed (Annexure-IV) that there was formation of cartel amongst the suppliers who quoted identical rates in 117 cases at 11 factories. In spite of clear possibility of formation of cartel, the factories distributed the ordered quantity amongst these suppliers and placed orders for Rs 472.60 crore during 2001-06 without ensuring reasonableness of rates quoted. Factories had not taken any effective steps to break the cartel, which deprived them of getting the best economic offer. The Board agreed with the findings of Audit and stated that the firms quoted identical rates to get share of orders and consequently, the factories could not get the best competitive offer. The Board added that they had no other option but to follow the Defence Procurement Manual pending formulation of a revised system.

4.2.3 Delay in finalisation of orders

As per norms, the time schedule prescribed for issue of tenders is four weeks from the date of finalisation of requirement and for finalisation of order is 12 weeks from the date of opening of tenders. Audit noticed delays ranging from five to 54 weeks in issue of tenders in 710 cases and delays ranging from 13 to 58 weeks in finalisation of orders in 315 cases out of 2153 cases examined in 11 factories as per details shown in Annexure-V. The Board attributed the delay in some cases to price negotiation, decision-making at various levels and more lead time taken to meet the stringent specifications and requirement of end users. Besides, five factories delayed in assessment of requirement of stores and finalisation of orders after receipt of production target for various items from the Board. This resulted in delays in receipt of stores and consequent shortfall in production of end products as indicated in Annexure-VI.

4.2.4 Non-acceptance of lowest offer

Vehicle Factory Jabalpur ignored the lowest rate of Rs 53,100 quoted by a supplier already registered with DGQA for load body of 'Stallion' vehicle on the

ground that it did not submit the earnest money deposit and placed orders in February 2004 for supply of 450 load body on two firms that quoted identical rate of Rs 58,450. This resulted in an extra expenditure of Rs 24.08 lakh. The Board stated in March 2007 that earnest money deposit was compulsory irrespective of firm's registration with the DGQA and as per terms and conditions of the tender notice, quotations received without earnest money deposit would be rejected. This contention was not justified as the firm was registered with the DGQA and hence earnest money deposit should not have been insisted upon as per General Financial Rules. There was also lapse on the part of the factory in not incorporating a clause to this effect in the tender notice.

4.2.5 Non-incorporation of standard terms and conditions in contracts

According to the Material Management and Procurement Manual (November 2005), all standard terms and conditions including special conditions mutually agreed upon with the suppliers, if any, should be incorporated in contracts for procurement of stores. As per Defence Services Regulations (Financial Regulations), the terms and conditions of contracts must be precise and definite and there must be no room for ambiguity or misinterpretation therein. Though the Board has prescribed certain checks in this regard to be exercised by the factories before finalising the orders, the same were not adhered to due to absence of proper monitoring at the factory. Audit noticed 20 instances in one factory where important terms and conditions were not found incorporated in the contracts. This led to overpayment to the supplier by one factory. Details of these cases are shown in Table 6 below:

Table 6: Details of clauses not incorporated in the orders

Name of the factory	Details of orders	Details of clause not incorporated in the orders	Impact
Vehicle Factory Jabalpur	20 orders (July 2002 to July 2005) for components/assemblies of a vehicle	i) Payment clause for packing and transportation on actual basis instead of provisional basis. ii) Definite time frame for submission of final bill by the supplier.	Provisional payments were made to the tune of Rs 1.90 crore against actual expenditure of Rs 0.73 crore which resulted in overpayment of Rs 1.17 crore to the supplier though it was recovered later in February 2007.

4.2.6 Overpayment due to non-application of contract condition

Orders placed by Vehicle Factory Jabalpur on a firm for supply of CKD / SKD items of a vehicle[7] stipulated that price variation formula was to be applied once in a year with effect from 1 April and the updated price would remain valid up to 31 March of the following year. However, in respect of four orders finalised between July 2003 and July 2005, though the stipulated delivery schedule was 31 March of the following year the factory extended delivery schedule beyond 31 March on the firm's request on the explicit condition that no increase in price beyond the original delivery schedule would be admissible. The factory, however, made payment at the enhanced rates in respect of supplies effected beyond the original schedule leading to overpayment of Rs 1.45 crore, which was recovered later in November 2006. Although this is a lone case detected in the sample selected by Audit, there is a need to put in place a control system to avoid such overpayments when special relaxation to the terms of supply orders are made.

B-Machinery

4.3 General

4.3.1 Ordnance factories formulate plan on annual basis for procurement of plant and machinery and forward the demands to the Board for its clearance. Thereafter, the Board accords approval to facilitate issue of tender enquiries by the factories. According to the Board's guidelines of July 1998, the factory should float tender enquiries and forward recommendations of its Technical Evaluation Committee (TEC) to the Board within three months of the Board's approval. The guidelines further provide for one month for the Board to convey its decision, one month for opening of price bids and to forward factory's recommendations to the Board and another one month for the Board's final decision in this regard. However, the guidelines did not stipulate any definite time frame for finalisation of orders after approval by the Board.

4.3.2 The following control mechanisms exist to ensure adherence to the above requirements:

[7] ***Stallion vehicle***

- Factory firms up proper technical specifications of the machinery to be procured before issue of tender enquiries;
- Board monitors the progress of procurement based on factory's feedback;
- TEC at factory and Board level ensures acceptability of technical bids, and
- TPC ensures reasonableness of price of the technically acceptable offers.

4.4 Audit findings

Audit noticed deficiencies in firming up technical specification of machines by the factories in line with the state of the art technology and existing production load, apart from ineffective monitoring of progress of procurement by the factories and the Board, non-adherence to the prescribed time schedule and omissions of important clauses in the contracts. These are discussed below:

4.4.1 Delay in finalisation of contracts

4.4.1.1 A test check of records relating to procurement of plant and machinery costing Rs 1 crore and above revealed inordinate delays in processing tender enquiries and finalisation of orders after the Board's approval in procurement of nine plant and machinery costing Rs 58.17 crore at five factories. Details of such cases are indicated in Annexure-VII. The factories took 17 to 74 months in finalising the orders after approval by the Board. The delays were mainly due to delays in firming up the exact technical specification of plant and machinery, inordinate delay in evaluation of technical bids, repeated tendering, identification of prospective suppliers and procedural delays at various stages on the part of factories as well as the Board. Delayed procurement of these machines resulted in cost overrun of Rs 15.57 crore and deprivation of annual savings to the extent of Rs 9.17 crore, apart from procurement of stores costing Rs 68.62 crore from trade at two factories.

4.4.1.2 The Board attributed the delays to re-tendering due to non-receipt of offers in line with technical specifications and reframing of specifications of machines. It also added that certain delay in finalisation of orders was inevitable in view of the inbuilt complexities of the procurement system due to which no orders could be finalised before one and a half years. This is not acceptable as the factories and the Board failed to adhere to the time schedule prescribed in the Board's guidelines.

4.4.2 Non-incorporation of standard terms and conditions in contracts

The contract for procurement of plant and machinery in ordnance factories should incorporate all standard terms and conditions as governed by the DGS&D's contract manual. This *inter alia* caters for specification of the machinery along with rated output/ cycle time, pre-delivery inspection, payment terms, delivery schedule, liquidated damages, etc. Audit noticed 20 instances in five factories where important terms and conditions were not incorporated in the contracts. Details of such cases are shown in Table 7 below:

Table 7: Details of clauses not incorporated in the contracts

Name of the factory	Details of orders	Details of clause not incorporated in the orders	Impact
Ordnance Parachute Factory Kanpur	6 orders (July 2002 to December 2005) for 515 sewing machines.	Pre-despatch inspection to ensure that the quality of the machine ordered is in line with the contract.	Release of payment on receipt of machines without ensuring desired quality and specifications.
Ordnance Clothing Factory Shahjahanpur	4 orders (March 2004 to February 2006) for 8 machines		
Ordnance Factory Trichy	6 orders (June 2001 to May 2005) for 6 CNC machines	Cycle time/ rated capacity of the machines ordered to ensure that the machines achieve the assured capacity	Acceptance of the machines without ensuring achievement of its rated capacity in inspection/performance trials.
Ordnance Factory Kanpur	3 orders (December 2001 to February 2003) for CNC machines	Liquidated damages for default on the part of the supplier	Recovery of liquidated damages can not be effected in case of delayed delivery of machines.
Ammunition Factory Kirkee	One order (May 2005) for industrial X- Ray equipment	Payment of customs duty on production of supporting documents, originally incorporated in the order but subsequently deleted (June 2005)	Release of customs duty amounting to Rs 47.37 lakh without any proof of payment of customs duty.

With regard to non-incorporation of pre-despatch inspection clause, though the Board contended that 80 *per cent* payment was made to the supplier only after inspection by the competent authority at the factory, yet such omission is always fraught with a risk of receiving substandard machines. As regards non-incorporation of cycle time/ rated capacity of machines in the orders, the Board opined that the efficiency of the machines was not determined on the basis of cycle time alone. This is not tenable as the Board's guidelines (May 2001) stipulate that pre- delivery inspection will consist of various tests and trials on

sample jobs for which the equipment is tooled up to determine job accuracy and rated output/ cycle time. This implies that rated output/ cycle time should be invariably indicated in the orders. The Board also stated that steps were taken to incorporate liquidated damages clause in future.

Recommendations

- *Board may ensure that the factories take urgent steps to identify more sources of supply of stores so as to follow the guidelines of the Ministry/Board's manual to achieve timely and economic offers.*
- *In order to break any suppliers' cartel, the Board may examine the feasibility of implementing the procedures adopted by other Government Organisations such as Railway Board.*
- *Ministry may ensure that the Board and the factories finalise the orders for procurement of machinery in a time-bound manner. Suitable accountability mechanism should be instituted at every stage in order to avoid delays and consequent cost overrun.*
- *Board may ensure that the factories strictly follow the procurement manual and incorporate all standard and mandatory terms and conditions in the contracts to safeguard the interests of the State. An institutional mechanism may be created for monitoring incorporation of all mandatory and suitable terms and conditions before finalisation of orders.*

Auditee's response to recommendations

The Board stated that a system for audit of the process was being incorporated to monitor and re-engineer the system of conclusion of contracts, and enhancement of financial powers of the General Managers of the factories for procurement was also under consideration.

CHAPTER V: RECEIPT, INSPECTION AND UTILISATION

A- Stores

5.1 General

As per Board's material management manual, inspection of stores received in the factory from any source should be carried out within 14 days or with the least possible delay to avoid loss on account of delayed inspection. The control mechanism in the form of periodical review meetings at the factory ensures timely inspection of stores before taking these on charge. This is also closely monitored by the Board. Besides, pre-despatch inspection of stores is important to ensure that quality and specifications of stores are in conformity with contractual terms.

5.2 Deficiencies in receipt and inspection

Audit noticed lack of proper accountability, ineffective control in compliance of the prescribed time frame which led to inordinate delays and procedural irregularities in inspection of stores resulting in its non-utilisation for a considerable period. These cases are discussed below:

5.2.1 Delay in inspection and receipt

A test check in Audit revealed that there were delays ranging up to four years in inspection of stores in 6051 cases in 16 factories as shown in Annexure-VIII. The factories and the Board while accepting the facts attributed the delays mainly to non- receipt of relevant documents from the suppliers, considerable time taken for inspection of raw materials, testing of dimensional accuracy, fitment and firing trials after assembly, delay in issue of inspection notes, and short-receipt of stores or receipt in damaged condition. The Board also stated that whenever dynamic test or fitment trials were undertaken, there would be delays of six to eight months which were considered inevitable as in many cases stores were cleared only after getting satisfactory proof results in respect of sample quantity manufactured. It added that the prescribed time limit needed revision.

5.2.2 Inadequacies/irregularities in inspection

All stores on receipt at the factory are entered in a material inward slip (MIS) on the same day of its arrival. After inspection of the stores, the MIS is converted into a receipt voucher and thereafter the accepted quantity is taken on charge. Details of procedural irregularities in inspection of stores in three factories are shown in Table 8 below:

Table 8: Factory-wise irregularities

Nature of irregularities	Factory/Board's reply	Remarks/ rebuttal
Ordnance Factory Kanpur		
Against six orders placed between February 2004 and January 2005, two PSUs supplied 2,266 tonnes shell bars to the factory. The stores were cleared by the inspectorates. Of these, 212 tonnes shell bars costing Rs 1.09 crore were not found acceptable due to inherent defects and cracks while being forged into shells. A Technical Committee constituted to investigate the matter, reported (June 2006) that apart from the defects in the materials, there were also deficiencies in processing of the shell bars during heat treatment and recommended that the loss was to be borne equally by the purchaser and supplier.	The PSUs had arranged replacement of rejected shell forgings.	This is not factually correct as the PSUs replaced defective shell bars only but not the cracked shells which were forged from bars. This is also indicative of faulty and ineffective inspection of materials.
Ordnance Factory Chanda		
Though the factory received stores worth Rs 11.39 crore in respect of 76 consignments between October 2003 and June 2005, yet no inspection was carried out (July 2006) for any of these consignments.	The delay was due to non-receipt of issue vouchers and inspection notes from the consignor factories.	Inordinate delay in inspection proves that the stores were not required immediately for use in production.
In 94 instances, various types of stores worth Rs 4.50 crore received between January 2004 and January 2006 were inspected and duly accepted by the factory. However, the factory had not prepared any receipt voucher to bring the stores on charge even as of July 2006.	There was no demand for the stores from the user section. Efforts were being made to clear the stores within reasonable time.	This indicates that the requirement of these stores was not properly assessed initially and the factory resorted to irregular practice just to reflect the inventory holding on the low side.
Ordnance Factory Khamaria		
The factory brought on charge 2331 sets of empty fuses worth Rs 87.76 lakh in March 2003 even before these were actually received or inspected. The factory actually received the stores in June 2003.	This was done to complete the booking of material consumption for the year 2002-03 in order to match the material consumption with target of production.	This was irregular as this practice leads to depiction of fictitious and inflated production even before receipt of materials.

5.2.3 Procurement of stores not conforming to the prescribed quality

5.2.3.1 In order to achieve reliability of the end products manufactured in ordnance factories before its issue to the Armed Forces, it should be ensured that

each and every component, right from raw materials to the final products, conforms to stringent specifications on quality parameters as laid down in the supply orders. In order to ensure these objectives, there are in-built control mechanisms such as pre-despatch inspection of imported stores at the supplier's premises, inspection of stores by the inspectorate in case of trade procurement and quality control at the consignor factory in case of procurement from sister factory. Audit noticed ineffective inspection and failure to implement prescribed control mechanisms which led to acceptance of stores not conforming to the prescribed quality. This also resulted in non-utilisation of stores and non-achievement of production target of an ammunition for two years. Details of such instances noticed in five factories are mentioned in Table 9 below:

Table 9: Receipt of stores not conforming to quality

Name of the stores	Quantity received Period of receipt	Quantity rejected Value (Rs in crore)	Reasons for rejection	Remarks
Metal and Steel Factory Ishapore				
Steel billets for shells of 155 mm ammunition	**142.90** tonnes March 2005 to February 2006	**73.14** tonnes 0.91	Rolling and dimensional defects	Neither replacement of the stores nor recovery of its value was effected from the suppliers. Board stated (March 2007) that the material per se being useable and good would be consumed on receipt of order. This is not acceptable as the defective billets can not be used for production.
Rifle Factory Ishapore				
Plastic butts of a rifle	**25,000 Nos** January 2004 to June 2005	**13,000 Nos.** 0.25	Rejected in fitment trials despite its clearance by the inspectorate	Replacement was awaited (March 2007).
Ordnance Factory Chanda				
Combustible cartridge case of 120 mm ammunition	**3550 sets** October 2000 to October 2001	**3331 sets** 0.96	Dimensional deviation noticed during pre-assembly inspection despite its clearance by the inspectorate	Supplier did not agree to replace the rejected stores as it was passed in inspection. The matter was taken up with the design agency to find out remedial measures.
Base bleed for 155 mm ammunition	**42,000 Nos.** 2004	**12,960 Nos.** 19.10	Bursting of motor tube in flight during check proof	Neither reproofing with other type of fuse as requested by the supplier nor its replacement had been done. Factory was carrying out investigation of rejected lots as directed by the inspectorate, results of which were awaited (March 2007). Annual production target could not be achieved during 2004-05 and 2005-06.

Ordnance Factory Khamaria				
Cartridge case of 30 mm ammunition	**9000 Nos.** April 2006	**2731 Nos.** 0.42	Dimensional deviations noticed during inspection after receipt in factory.	Replacement of the rejected stores was awaited (March 2007).
Empty shell of 30 mm ammunition	**18,352 Nos.** April 2003	**18,352 Nos.** 0.98	Dimensional deviations noticed during inspection after receipt in factory.	Replacement of the rejected stores was awaited (March 2007).
Primer of 14.5 mm ammunition	**3,94,092** Nos. October 2005	**3,94,092** Nos. 0.04	Rejected by the inspectorate due to expiry of shelf life	Replacement of the rejected stores was awaited (March 2007). Consequently, other components worth Rs 7.71 crore were lying unutilised. Annual production target could not be achieved in 2005-06.
Ammunition Factory Kirkee				
Empty bomb bodies of 81 mm High Explosive	**16,040 Nos.** 2004-05	**10,168 Nos.** 1.44	Defects observed between the joint of front and rear bomb bodies.	Ministry stated (June 2006) that the rejected bomb bodies would be utilised as proof stock components.
	Total	**Rs 24.10 crore**		

5.2.3.2 Ordnance Factory Ambernath incurred an additional expenditure of Rs 62.59 lakh due to acceptance of copper cathode not conforming to the specifications stipulated in the order. As per specifications stipulated in the orders finalised between June 2002 and April 2005, size of the copper cathode should be normally weighing up to 130 kg. However, the PSU supplied copper cathode weighing about 215 kg which were also accepted by the factory in inspection. Consequently, the factory had to incur additional expenditure for cutting of the item into pieces before its use in production. Incidentally, for a similar order finalised with the same PSU by a sister factory, the PSU had made arrangements to cut copper cathode at the PSU's expense.

5.2.3.3 Failure of the factories and inspection agencies to carry out the inspection of stores within the stipulated time resulted in its non-utilisation in production for a considerable period. Five factories could not derive any value for money out of an investment of Rs 24.10 crore towards procurement of stores due to rejection or quality problems. This is indicative of inefficient and ineffective inspection of the same by the factories and inspection agencies. Besides, Ordnance Factory Ambernath incurred additional expenditure of Rs 62.59 lakh to make the stores fit for use in production.

Recommendations

- *Board may evolve a suitable mechanism to minimise delays in inspection of stores so that these are utilised in a timely manner. Proper documentation must be maintained at every stage of such inspection/utilisation.*
- *Ministry may strengthen the existing inspection mechanism with a view to eliminating rejection/quality problems of stores received in the factories.*

Auditee's response to recommendations

The Board noted the recommendation and stated that the role of inspection of stores had been taken over from the DGQA to strengthen the existing system.

B-Machinery

5.3 General

Pre-despatch inspection of machinery, an inbuilt control mechanism, constitutes an important stage in the procurement process in order to ensure that the quality, specifications and rated capacity/ cycle time of plant and machinery are in line with the contract. Such inspection is carried out by authorised representative of the factory at the supplier's premises. On completion of satisfactory pre-despatch inspection, the supplier despatches machinery to the factory.

5.4 Audit findings

5.4.1 Deficiencies in pre-despatch inspection

5.4.1.1 During test check of records, Audit noticed inadequate/ ineffective pre-despatch inspection of machinery which led to either its rejection or acceptance by compromising quality at the consignee's end. As a result, machines were either not utilised or underutilised apart from sustaining production loss and outsourcing of jobs. Significant instances along with factory/Board's reply and remarks/rebuttal of Audit are shown in Table 10 below:

Table 10: Cases of inadequate/ineffective pre-despatch inspection

Gist of case	Factory/Board's reply	Remarks/ rebuttal
Ammunition Factory Kirkee		
The factory procured two machines costing Rs 1.40 crore in March 2003 from a PSU. The order stipulated proving of the machines for the rated capacity of 3300 pieces per hour at pre-despatch inspection. But this was not carried out for one machine. The same was rejected as it could yield an output of 1260 pieces per hour during commissioning trial against contracted output of 3300 pieces. The factory's failure to carry out pre-despatch inspection led to rejection of the machine for which Rs 64.31 lakh had already been paid to the firm.	The case was under examination.	The recovery of the amount from the firm was awaited as of March 2007.
Ordnance Factory Khamaria		
The factory received two presses[8] in June 2003 after carrying out pre-despatch inspection and paid Rs 93 lakh to the supplier. The presses could not be commissioned due to unsatisfactory performance and technical deficiencies[9]. A Board of Enquiry reported in August 2005 that the pre-despatch inspection was not conducted 'with enough sincerity'. Though the firm tried to commission the presses, certain deficiencies like non-achievement of rated capacity, variation in wall thickness of the components drawn, etc. were still persisting. The firm intimated that further improvement of the presses would not be possible and requested the factory to accept the same with price reduction. The factory recommended (May 2006) acceptance of the presses despite reduced output.	Functional movement of the press was only inspected at firm's premises but not the quality aspects of the pressed components. However, the presses were in working condition.	The Board's stand is not acceptable as the job accuracy and rated output of the press should have been evaluated during pre-delivery inspection in accordance with the Board's guidelines.
Ordnance Factory Ambernath		
The factory procured an automatic gauging and sorting machine costing Rs 1.25 crore in December 2002 from a sister factory without carrying out pre-despatch inspection. As the machine could not segregate and sort out the brass cups properly during trial run, it was sent back to the sister factory in June 2005 for rectification. The same was yet to be received back as of December 2006. Meanwhile, the factory placed orders on trade for segregation of 410 tonnes deviated cups at a cost of Rs 17.94 lakh between January 2004 and April 2005.	Reply was not furnished.	Failure of the factory to carry out pre-despatch inspection led to acceptance of defective machine and further delay in its rectification resulted in outsourcing of jobs.
Rifle Factory Ishapore		
The factory placed an order on a firm in February 2003 for nine CNC machines at a cost of Rs 9.16 crore. Though the order catered for pre-despatch inspection, the factory accepted the machines without requisite inspection on the firm's assurance that the machine would be proved as per contractual conditions after its installation. The machines were received between March and August 2003 and erected during May – November 2003. However, the firm could not prove the requisite cycle time for these machines.	The machines were commissioned for production without establishing the specified cycle time. No punitive action was taken against the firm for non-proving of the cycle time, as the order did not specify the date of commissioning.	Non-establishment of the contracted cycle time led to lower output of these machines as compared to the targeted one. Delayed commissioning of the machines also resulted in production loss of Rs 9.39 crore.

5.4.1.2 Thus, inadequate pre-despatch inspection by four factories resulted in acceptance of 13 items of sub-standard machines purchased at a cost of

[8] ***Multi operation draw press***

[9] ***Defective feeding mechanism, dimensional variation of the drawn component, non- provision of stripper arrangement***

Rs 11.98 crore. This also led to outsourcing of jobs costing Rs 17.94 lakh and production loss amounting to Rs 9.39 crore at two factories.

Recommendation

Board may ensure that the factories carry out pre-despatch inspection of machinery strictly as per conditions of the order by instituting proper accountability mechanisms. Payment should be released only after satisfactory clearance of machinery in pre-despatch inspections.

Auditee's response to recommendation

Though the Board reiterated that the above requirements were complied with, the audit findings indicate laxity in pre-despatch inspection. This area needs to be effectively monitored by the factory/ Board.

5.4.2 Delayed/non-commissioning of machines

5.4.2.1 The procurement of plant and machinery has to be meticulously planned and effectively implemented to achieve their optimum use. Commissioning of machines is carried out expeditiously within a reasonable time after its receipt in the factory. The machine is certified as commissioned once it has satisfied the prescribed performance standards with regard to desired quality, capacity and production cycle as stipulated in orders.

5.4.2.2 Audit noticed the following system deficiencies due to absence of proper control mechanisms with regard to timely commissioning of machines:

- Failure to effectively synchronise the activities of civil works required for erection / commissioning of machines;
- Ineffective pre-despatch inspection as envisaged in the contracts;
- Non- incorporation of definite time schedule for commissioning of the machines in the contract, and
- Ineffective monitoring at the Board level.

Such a situation led to delays in the range of two to 34 months in commissioning of 92 machines costing Rs 100.30 crore at nine factories. Five more machines worth Rs 25.71 crore received between January 2002 and May 2005 in four

factories were yet to be commissioned as of November 2006 even after a lapse of six to 59 months after its receipt. Details are given in Annexure- IX. In most cases, the delay was mainly due to non-completion of associated civil works, non-establishment of cycle time and long time taken for extensive performance trials.

5.4.2.3 Thus, the factories could not utilise 97 machines worth Rs 126.01 crore for a considerable period due to abnormal delays in commissioning the machines. The Board accepted the findings and stated that such delays occurred due to various reasons which were beyond its control and unintentional.

Recommendations

- *Board may ensure that the factories stipulate a specific time frame for erection and commissioning of the machines in respect of all orders.*
- *Board may ensure that the factories plan and execute connected civil works well in advance before receipt of the machinery so as to avoid delay in their erection and commissioning.*

Auditee's response to recommendations

The Board noted the recommendations and added that the delays/ bottlenecks in erection and commissioning of machinery were being monitored regularly at their end.

5.4.3 Receipt of machinery not conforming to the quality

5.4.3.1 Plant and machinery received in the factories should conform to the quality prescribed as stipulated in the orders with a view to ensuring the quality of its performance with the desired output. Audit noticed instances of ineffective inspection and failure to exercise certain inbuilt controls which led to acceptance of machinery not conforming to the quality prescribed. Details of machinery received but found not conforming to prescribed quality are shown in Table 11 below:

Table 11: Receipt of machinery not conforming to quality

Description of machine Value	Date of commissioning	Nature of quality problem noticed	Replies of the Board /rebuttal
Vehicle Factory Jabalpur			
One CNC Vertical Turning Centre Rs 0.61 crore	January 2003	During commissioning trials certain repetitive problems were noticed and the machine could yield only trickle production of six components during 2003-04 and two in 2004-05 as against 10 components stipulated in the order.	One vital part of the machine started mal-functioning from April 2005, which was yet to be replaced.
Gun and Shell Factory Cossipore			
One copper Banding Press Rs 0.12 crore	September 2002	Within a week of its commissioning the machine broke down due to mal-functioning of one vital part. There was no production in the machine.	Efforts were being made to make the machine operational.
Ordnance Factory Ambajhari			
One casting machine Rs 9.46 crore	Not commissioned (Received in January 2002)	Machine could prove casting of one type of billet only against three types as per acceptance criteria stipulated in the order.	The machine had no quality problems restricting its use. This is not tenable as the factory is yet to establish the other two types of billets.
Ordnance Clothing Factory Shahajahanpur			
Two knitting machines Rs 3.26 crore	August 2005	Against rated capacity of 20,000 jerseys per month, only 44,343 jerseys were knitted in 10 months. The gross underutilisation was due to intermittent break-downs owing to non-availability of tools, electronic/mechanical fault, power fault, leakage in oil pipes, etc. The factory did not take any effective action to set right the defects to improve its utilisation.	Lack of adequate training of the workmen was another factor for under-utilisation. Performance of the workmen would increase gradually after experience.
Total Rs 13.45 crore			

5.4.3.2 Thus, four factories could not derive any value for money out of an expenditure of Rs 13.45 crore towards procurement of machinery due to quality problems. This is indicative of inefficient and ineffective inspection by the factories and inspection agencies.

CHAPTER VI: MONITORING AND INTERNAL CONTROL

6.1 General

Elaborate internal controls and monitoring mechanisms are required to be instituted by the ordnance factories to carry out planning and procurement of stores and machinery in an efficient manner, to ensure their effective utilisation by adhering to the policy guidelines, to safeguard the assets and to secure completeness and accuracy of the records in relation to the stores and machinery. Various components of existing controls are as under:

- Review and monitoring of various activities at the factory and Board level;
- Management information system, and
- Internal Audit.

6.2 Audit findings

Apart from the cases already discussed in the foregoing chapters, Audit also noticed inadequate internal controls and lack of proper monitoring at the factories, lack of coordination among the factories and ineffective monitoring by the Board in several areas like firming up of production targets, planning of procurement and utilisation of stores, observance of laid down instructions and conditions stipulated in orders, accounting and documentation of various activities, etc. This led to non-utilisation of stores, under-pricing of an ammunition, failure to obtain security deposit from the suppliers, etc. Significant instances are discussed in succeeding paragraphs.

6.2.1 Improper documentation/accounting

6.2.1.1 Steel melting refining shop of Metal and Steel Factory Ishapore recorded excess consumption of two types of metal/alloy to the tune of Rs 5.20 crore against the materials available in the shop floor during 2003-04 to 2005-06 as detailed in Table 12 below:

Table 12: Details of excess consumption recorded

Year	Name of the Item	Quantity available[10] (Kg)	Quantity consumed (Kg)	Excess consumption recorded beyond availability (Kg)	Value (Rs lakh)
2003-04	Ferro-molybdenum	12,987	14,987	2000	10.60
	Nickel (pure)	39,821	54,850	15,029	67.11
2004-05	Ferro-molybdenum	10,590	13,811	3,221	68.95
	Nickel (pure)	48,250	61,026	12,776	86.58
2005-06	Ferro-molybdenum	20,883	29,332	8,449	199.08
	Nickel (pure)	65,000	77,092	12,092	87.97
	Total				**520.29**

It is clear that either the shop did not record the actual consumption or they understated the actual availability of materials in stock, indicating improper documentation and incorrect accounting of stores due to lack of effective monitoring and control by the factory. The Board accepted the facts and stated in March 2007 that there was inherent lacuna in the existing foundry metal statement and to overcome this, a modified statement was devised with effect from October 2006. Besides, Store section of the factory issued 14.50 tonnes nickel costing Rs 72.68 lakh to Steel Melting Refining (SMR) section in March 2004 for production of steel ingots. However, the stores were not accounted for in the records of SMR section for production. A Board of Enquiry constituted in September 2006 reported (January 2007) that the stores were actually drawn from stockpile and consumed during December 2003 to February 2004 without proper documentation. The Board also admitted that there were some procedural deviations which were sought to be justified as being necessary to maintain continuity in production.

6.2.1.2 Ordnance Factory Varangaon imported 551 tonnes of propellant for an ammunition[11] at a cost of Rs 36.30 crore against three orders placed between November 2001 and June 2004. While taking these on charge between March 2003 and August 2005, the factory understated the stores at Rs 32.94 crore without any recorded reasons. The factory accepted the mistake in August 2006 and stated that no rectification could be done as the accounts of the years concerned had already been closed. This led to under-pricing of the ammunition issued to the indentors. The Board also accepted the facts.

[10] ***Opening stock + receipt during the year***
[11] ***7.62 mm ammunition***

6.2.1.3 As per the Board's instruction of October 1997, where the price of an item manufactured in any factory for supply to another sister factory was higher than the trade cost, the factory should price the item at trade cost and the difference should be absorbed by the producing factory. However, Heavy Vehicles Factory Avadi procured 240 sprocket wheels[12] from Ordnance Factory Medak during 2003-05 at unit cost of Rs 20,097 as against the trade cost of Rs 3182. Thus, Heavy Vehicles Factory Avadi was overcharged to the extent of Rs 40.99 lakh due to non-absorption of the increased amount by Ordnance Factory Medak. The factory stated (February 2006) that no rate was fixed by the Board for this item since it was not in the production line of Ordnance Factory Medak. This is not tenable as the sprocket wheels were produced by Ordnance Factory Medak and the extra cost should have been absorbed by Ordnance Factory Medak as per extant order.

6.2.2 Lack of coordination amongst factories and Board

6.2.2.1 For achieving the target of production for 2003-04 set by the Board, Ordnance Factory Kanpur procured raw materials worth Rs 5.26 crore for manufacture of 30,000 empty shells of an ammunition[13]. However, the factory received firm demand for 8,000 shells only from Ordnance Factory Badmal, the filling factory. Thus, improper coordination between the Board and these factories as well as lack of proper monitoring at the apex level led to over-provisioning of stores worth Rs 3.86 crore. Even as of June 2005, stores worth Rs 1.29 crore remained unutilised. The Board stated (March 2007) that the stores were consumed in production during subsequent years.

6.2.2.2 For achieving the tentative target of production for 2001-02 set by the Board, Ordnance Factory Dehu Road placed two orders (December 2000 and February 2001) on Ordnance Factory Kanpur for 11,125 empty shells of an ammunition[14]. Accordingly, the latter procured 487 tonnes shell bar costing Rs 2.05 crore during 2001-02 to manufacture the shells. Subsequently, in September 2002, Ordnance Factory Dehu Road informed Ordnance Factory Kanpur to stop further production of the shell as the Board had not given further production programmes. Ordnance Factory Kanpur issued 4390 empty shells during 2001-02

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[12] ***Used in Tanks***
[13] ***130 mm ammunition***
[14] ***155mm illuminating (24 km) and red phosphorus Naschem ammunition.***

to 2003-04 to the sister factory. As of March 2006, 131 tonnes of shell bar worth Rs 55 lakh were lying unutilised at the factory. The Board stated (March 2007) that the stores would be utilised for meeting the future production target.

6.2.3 Monitoring lapse in post contract activities

6.2.3.1 As per conditions of the contract, security deposit (SD) in the form of bank guarantee at five *per cent* of the contract value needed to be collected from the supplier within 21 days after placement of order. However, in respect of two import orders (February-March 2005) Heavy Vehicles Factory Avadi did not obtain bank guarantee from the firm. Though the firm refused (June 2005) to supply the machines due to non-clearance of export license, the factory was deprived of encashing the value of SD of Rs 6.35 lakh. The factory accepted (December 2006) the facts. Similarly, Ammunition Factory Kirkee failed to obtain SD of Rs 2.80 lakh against an order of June 2005 for supply of one air-conditioning plant.

6.2.3.2 Vehicle Factory Jabalpur imported 42 types of tooling equipment costing Rs 1.34 crore in November 2001. The same were required for machining of axles of a vehicle[15]. However, the factory could not utilise the tools as of August 2006 due to non-availability of the required forgings for the axles. This is indicative of monitoring lapse as the factory should have ensured availability of forgings for utilisation of the tools.

Recommendation

Ministry may ensure that the Board and the factories strengthen their internal control and monitoring mechanisms in the areas like planning and assessment of requirements, production, accounting and documentation of related activities.

Auditee's response to recommendation

The Board noted the recommendation.

[15] ***Lorry Passenger Transport All terrain (LPTA) vehicle***

CHAPTER VII: CONCLUSION

This performance audit of procurement of Stores and Machinery in Ordnance Factories covers 20 of the 39 factories, which are under the control of the Ordnance Factory Board and the Department of Defence Production, Ministry of Defence. Despite the elaborate system of control, supervision and monitoring provided for in the rules and procedures governing the procurement and acquisition of stores and machinery, there were several findings which give rise to grave concern about the observance of due care to ensure that operations were conducted with due regard to economy, efficiency and effectiveness.

It is a matter of concern that even though, the Ministry of Defence issued comprehensive orders contained in the Defence Procurement Procedures 2006, which were applicable to procurements in respect of Army, Navy and Air Force, these did not include with in their ambit the Ordnance Factories which continued to function insofar as procurements are concerned, with piecemeal orders issued from time to time. In November 2005, the Board issued a material management and procurements manual which did not cover procurement of machinery and have the approval of the Ministry. The position remained unchanged even at the time when audit was conducted.

The audit has brought to light the non-functioning of prescribed controls and the non-application of prescribed procedure as also the absence of effective mechanisms to deal with suppliers' cartels and deficient performance by suppliers for which no legal recourse was available due to deficiencies in the supply orders/ contracts particularly in the case of procurement of machinery.

Specific instances of faulty assessment of requirements both of stores and machinery, delays in purchase procedures particularly finalisation of tenders, leading to delayed receipt of stores and machinery and consequent shortfalls in production have been highlighted in the Report. The system of inspection including pre-despatch inspection as well as inspection of material received or sent from one factory to another were found to be inadequate or improperly executed.

In view of the extremely important role assigned to ordnance factories in providing arms, ammunition and equipment particularly to the Indian Army, and

to the other two uniformed services and paramilitary forces, it is imperative that the entire process of procurements both of stores and machinery be thoroughly reviewed to ensure that the users derive value for money and the orders placed on the ordnance factories are fulfilled in terms of timeliness, quality and quantity.

Kolkata
Dated : 9 July 2007

(MAHUA PAL)
Principal Director of Audit
(Ordnance Factories)

COUNTERSIGNED

New Delhi
Dated : 12 July 2007

(VIJAYENDRA N. KAUL)
Comptroller and Auditor General of India

List of Abbreviations

BE	:	Blue emission
CKD	:	Completely Knocked Down
CNC	:	Computerised Numerically Controlled
CVC	:	Central Vigilance Commission
DGOF	:	Director General of Ordnance Factories
DGS&D	:	Director General of Supplies and Disposals
DGQA	:	Director General of Quality Assurance
HEAT	:	High Explosives Anti Tank
HQ	:	Headquarters
LTE	:	Limited Tender Enquiry
MIS	:	Material Inward Slip
OFB	:	Ordnance Factory Board
OTE	:	Open Tender Enquiry
PSU	:	Public Sector Undertaking
SD	:	Security Deposit
SKD	:	Semi Knocked Down
SMR	:	Steel Melting Refining
TEC	:	Technical Evaluation Committee
TPC	:	Tender Purchase Committee

Annexure - I

(Referred to in paragraph 1.2)

Flowchart of activities and agencies involved in procurement of stores and machinery

Diagram "A" (for stores)

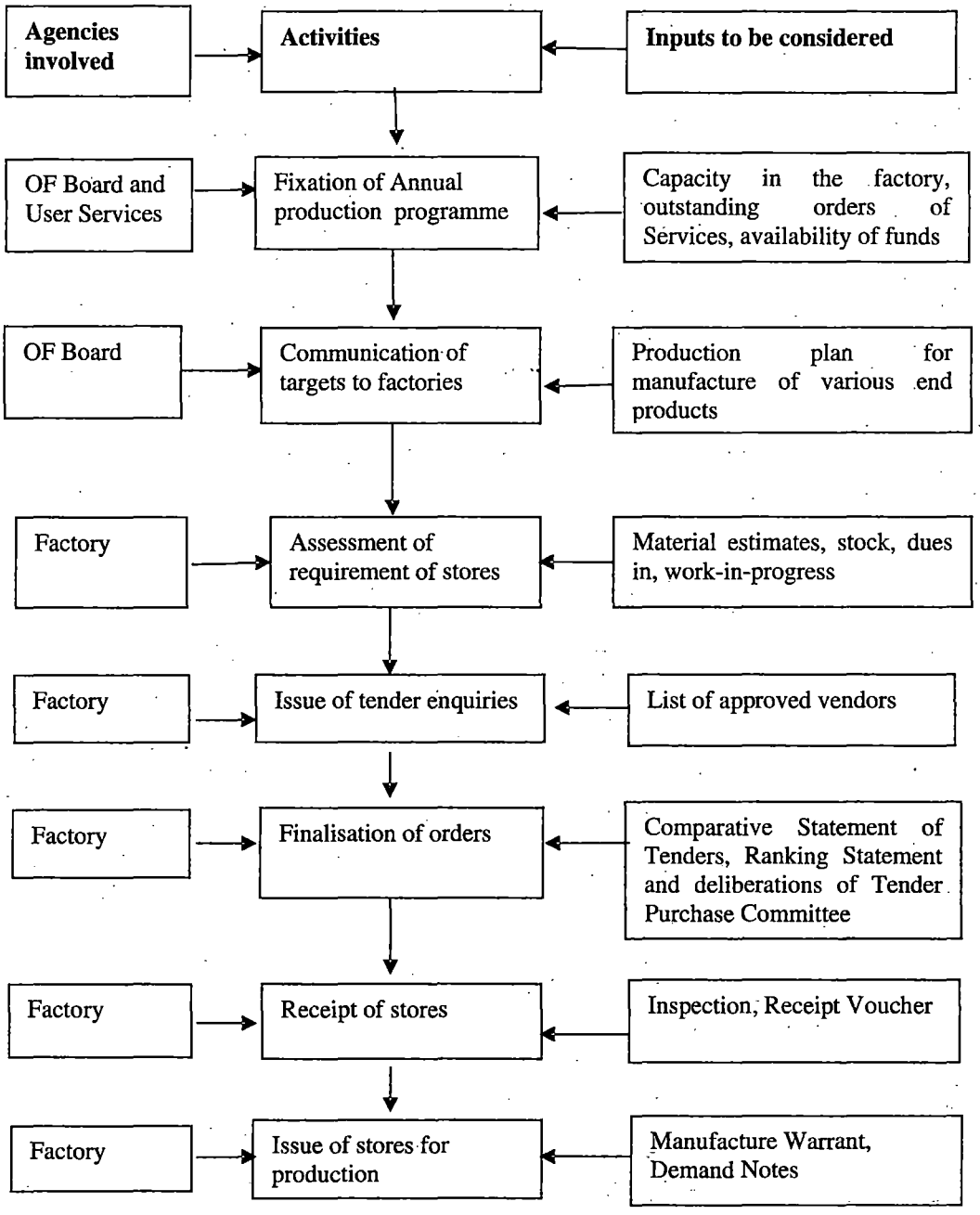
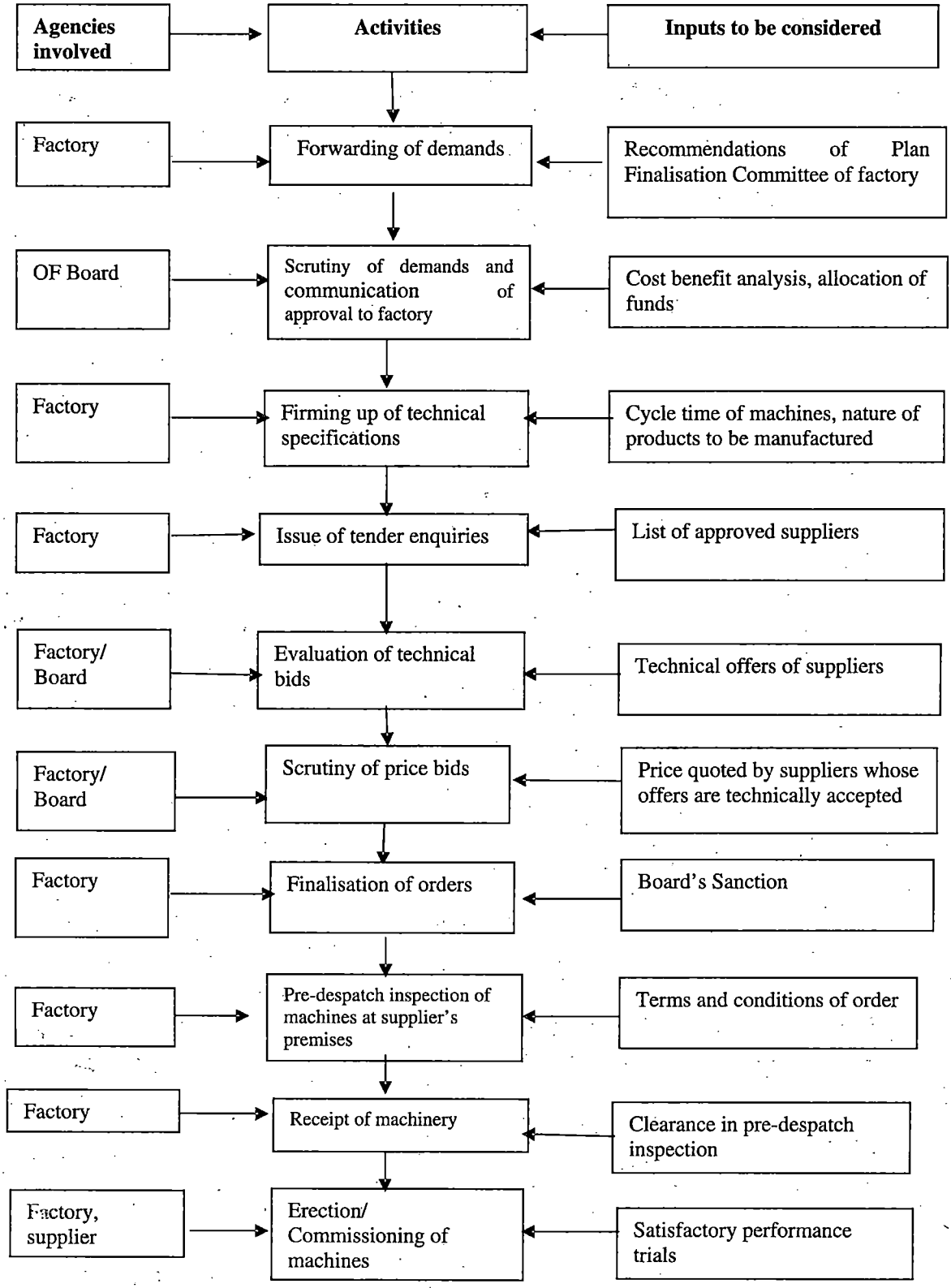


Diagram "B" (for machinery)



Annexure - II

(Referred to in paragraph 1.4)

Factories selected for performance audit

Sl. No.	Name of the factory	Principal items of production
1	Ordnance Factory Chanda	Gun, mortar and tank gun ammunition
2	Ordnance Factory Khamaria	Anti tank and small arms ammunition
3	Ordnance Factory Varangaon	Small arms ammunition
4	Ammunition Factory Kirkee	Artillery and small arms ammunition
5	Ordnance Factory Kanpur	Gun barrels, empty shell for ammunition and bomb body
6	Rifle Factory Ishapore	Rifle, pistol and revolver
7	Small Arms Factory Kanpur	Small arms and rifle
8	Ordnance Factory Trichy	Rifle and gun
9	Heavy Vehicles Factory Avadi	Armoured tanks
10	Engine Factory Avadi	Tank engines
11	Ordnance Factory Medak	Infantry combat vehicles, carrier mortar tracked vehicles, ambulance, mine protected vehicles
12	Vehicle Factory Jabalpur	Transport vehicles
13	Ordnance Clothing Factory Shajahanpur	Shirts, trousers, jacket, socks and blankets
14	Ordnance Parachute Factory Kanpur	Parachutes and clothing uniforms
15	Ordnance Equipment Factory Kanpur	Sleeping bag, mattress, tents, net mosquito, infantry combat kits, etc.
16	Ordnance Factory Ambajhari	Empty shell, cartridge case and fuse of various ammunition
17	Gun and Shell Factory Cossipore	Mortar barrel, primer, fuse and empty shell of ammunition
18	Ordnance Factory Ambernath	Brass cup and cartridge case
19	Metal and Steel Factory Ishapore	Forgings, rolled blooms, billets, alloy steel, non-ferrous castings, etc.
20	Ordnance Factory Muradnagar	Bomb body, hand grenade, castings for armoured vehicles, etc.

Annexure - III

(Referred to in paragraph 4.2.1)

Factory-wise position where LTEs were issued to less than six firms

Name of the factory	Number of cases examined	Number of cases where LTE was issued to less than 6 firms	Response of the factory management
Rifle Factory Ishapore	52	17	LTE were issued to established sources as available at that time.
Gun and Shell Factory Cossipore	141	52	There were only three – four established sources.
Engine Factory Avadi	38	29	Developed sources were limited.
Ordnance Factory Trichy	14	14	Established sources were less than six.
Small Arms Factory Kanpur	14	14	Efforts were continued to develop new sources.
Ordnance Factory Kanpur	12	12	Attempts to develop new sources did not succeed
Metal and Steel Factory Ishapore	99	25	Not received
Ordnance Factory Muradnagar	6	6	Not received
Vehicle Factory Jabalpur	38	38	Not received
Ordnance Factory Khamaria	40	19	Not received
Ordnance Factory Chanda	247	247	Not received
Ordnance Factory Varangoan	108	28	Non-availability of additional sources.
Ordnance Factory Ambajhari	181	15	Attempts to develop additional sources did not succeed
Ordnance Parachute Factory Kanpur	3758	3758	Not received
Ordnance Equipment Factory Kanpur	28	28	Not received
Total	**4776**	**4302**	
Source: Details compiled from the records of factory management.			

Annexure - IV

(Referred to in Paragraph 4.2.2)

Cases where suppliers quoted identical rates due to cartel formation

Name of the factory	**Number of cases**	**Total Value of orders (Rs in crore)**
Ordnance Factory Chanda	28	130.30
Ordnance Factory Kanpur	13	78.91
Small Arms Factory Kanpur	2	3.69
Ordnance Factory Varangaon	10	30.96
Metal and Steel Factory Ishapore	5	2.46
Ammunition Factory Kirkee	10	15.87
Ordnance Factory Khamaria	19	61.50
Ordnance Factory Ambajhari	11	117.90
Ordnance Clothing Factory Shahjhanpur	11	18.34
Ordnance Parachute Factory Kanpur	5	6.34
Ordnance Equipment Factory Kanpur	3	6.33
11 Factories	**117**	**472.60**
Source: Details compiled from the records of factory management.		

Annexure –V

(Referred to in paragraph in 4.2.3)

Delays in finalisation of tender enquiries and purchase orders

Name of the factory	Number of cases examined	Time taken in finalisation of	
		Tender enquiries ranging between 5 and 54 weeks	Orders ranging between 13 and 58 weeks
		Number of cases	Number of cases
Ordnance Factory Medak	462	137	59
Engine Factory Avadi	84	9	39
Gun and Shell Factory Cossipore	141	23	5
Vehicle Factory Jabalpur	103	39	13
Ordnance Factory Chanda	222	198	112
Small Arms Factory Kanpur	76	22	6
Ordnance Clothing Factory Shahjahanpur	301	4	4
Ordnance Parachute Factory Kanpur	240	185	51
Ordnance Equipment Factory Kanpur	362	73	15
Ordnance Factory Kanpur	99	13	8
Ordnance Factory Varangaon	63	7	3
	2153	**710**	**315**
Source: Data compiled from relevant records of factory management			

Annexure – VI

(Referred to in paragraph 4.2.3)

Details of shortfall in production due to delay in finalisation of orders

Item	Year	Date of communication of target by the Board	Annual target	Production	Shortfall	Reasons for shortfall in production
Ammunition Factory Kirkee						
Mine A/P Inflammable	2001-02	April 2001	19,900	3200	16,700	Delayed finalisation of order on trade (November 2001) for firing cable, which was received during May- July 2002
Cartridge Trg.120 mm Bomb Mortar	2002-03	February2002	5000	2023	2977	Delayed placement of order (October 2002) on a trade firm.
Ordnance Factory Varangaon						
Cartridge 12.7 mm AP/IT	2001-02	October 2000	24,000	Nil	24,000	Delayed placement of order (October 2001) for filled bullets which were received in December 2002.
Ordnance Factory Chanda						
Mine AP Directional IA/IB	2003-04	January 2003	10,000	Nil	10,000	Non-finalisation of order for firing device during 2003-04. The order was placed in May 2004 on Ordnance Factory Medak for 6000 Nos.
	2004-05	February 2004	10,000	510	9490	Non- finalisation of orders for firing device during 2004-05.
	2005-06	November 2004	14,000	3,000	11,000	Non-finalisation of order for firing device during 2005-06
Mine APM-14	2002-03	February 2002	2,00,000	Nil	2,00,000	Delay in assessment of requirement (February 2003) of empty mine. Against order of April 2003, the item was received between March 2004 and March 2005 from trade.
Mine AT/ND 1A	2003-04	January 2003	60,000	Nil	60,000	Delayed placement of order (October 2003) for empty mines and non-supply of the same during 2003-04 by trade firm.
Cartridge EES No.9 MK-II	2003-04	Not available	5000	2314	2686	Delayed placement of order (February 2005) for primer on Ammunition Factory Kirkee.
Vehicle Factory Jabalpur						
5/7.5 Ton Vehicle Stallion MK-III	2003-04	January 2003	5,307	2868	2439	Late receipt of sanction from the Board/ Ministry led to delayed procurement of major input materials like tyre, power-steering kits, springs etc.
	2004-05	March 2004	4000 revised to 2750	2500	250	Late receipt of sanction from the Board/ Ministry led to delayed procurement of major input materials like tyre, power-steering kits, springs etc.

Source: Data compiled from Ordnance Factory Board's Production Performance Report for the respective years, Minutes of the target fixation meetings; Board's letter communicating the production target to the various factories and other relevant records of the factories concerned

Annexure – VII

(Referred to in paragraph 4.4.1.1)

Details of delayed processing of tender enquires/ finalisation of orders

Name of the factory	Name of the plant & machinery (Estimated cost)	Month and year of approval of demand by competent authority	Date of floating of tender enquiries/ re-tendering	Date of finalisation of order (cost of order)	Date of receipt/ commissioning of plant and machinery	Reasons for delay at various levels	Cost overrun (Rs in crore)	Non-achievement of annual savings (Rs in crore)
HVF Avadi	CNC vertical turning and Boring machines (2 Nos.) (Rs 5.05 crore)	December 1998	September 2002 October 2003	July 2004 (Rs 7.62 crore)	March 2006	Factory took four years to identify the suppliers before issue of tender enquiry. Further delay was due to broadening of specifications and subsequent re-tendering.	2.57	1.04
HVF Avadi	CNC internal and external face grinding machine – 1 No. (Rs 2.21 crore)	September 2000	February 2001 December 2003	August 2004 (Rs 4.55 crore)	February 2006	There was delay of 17 months in evaluation of technical bids at the factory (August 2002). Expiry of validity of quoted price at the time of opening of price bids (January 2003) led to re-tendering (December 2003).	2.34	0.63
HVF Avadi	Jig Grinding machines – 1 No. (Rs 1.62 crore)	December 2000	January 2001 September 2003	June 2004 (Rs 3.12 crore)	October 2005	Delayed decision of the factory to re-tender with revised specification (CNC mode) which was not considered initially.	No cost overrun as the specification was changed.	0.28
HVF Avadi	Pneumatic counter blow hammer 1 No. (Not available)	May 1999	September 1999 July 2002 February 2004	July 2005 (Rs 17.32crore)	Not yet received	Factory's vacillation in firming up exact specification of the machine in line with the current technology necessitated re-tendering on three occasions. This took more than six years in finalising the order.	No cost overrun as the specification was changed.	1.20
MSF Ishapore	Cold Rolling Mills – 2 Nos. (Rs 4.00 crore revised to Rs 12.00 crore)	January 1999 October 2001	October 1995 July 2000	March 2004 1 No. (Rs 19.67 crore)	April 2006	Indecision and vacillation of the factory/Board in finalisation of the specification of the mill resulted in delay of seven years in procurement. Due to delay, the factory had to procure ferrous and non-ferrous strips costing Rs 35.77 crore from trade during 2001-02 to 2006-07 (up to June 2006).	7.67	2.98

OCF Shajahanpur	Computerised knitting machines 6 Nos. (Rs 3 crore)	September 2000 February 2005 (for 2 machines)	May 2001 Re-tendered three times October 2002 to May 2004	February 2005 2 machines (Rs 3.26 crore)	Not yet received	Indecision of the factory in firming up the exact requirement and specifications of the machines led to inordinate delay by four and a half years in processing the bids and finalisation of the orders.	2.26	0.14
Ordnance Factory Kanpur	CNC horizontal honing machine 1 No. (Rs 1.90 crore)	May 2001	August 2001	October 2002 (Rs 2.63 crore)	January 2004 January 2006 commissioned	The factory took more than one year in finalising the order as exact specification of the machine was not initially incorporated in the tender documents.	0.73	-
Ordnance Factory Varangaon	Steel Core plant 1 No.	March 2005	November 2006	Not finalized	Not applicable	Factory's demand of December 2000 was turned down by the Board on the ground that Ammunition Factory Kirkee would supply steel core from their surplus capacity. As Ammunition Factory Kirkee failed to supply required quantity of steel core, the factory again placed a demand in August 2003. This resulted in delay in finalisation of tender enquiry as well as trade procurement of steel core at an expenditure of Rs 32.85 crore during 2001-06.	Not Applicable	2.90
			Total	**9 machines Rs 58.17 crore**			**15.57**	**9.17**

Annexure –VIII
(*Referred to in paragraph 5.2.1*)
Details of delayed inspection of stores

Name of Factory	Period involved	Number of cases of delay	Total time taken	Factory's response
Ordnance Factory Ambernath	2001-06	2175	15 to 830 days	The factory agreed to take more care to clear the material within the prescribed time frame.
Ammunition Factory Kirkee	2000-05	1232	91 to 1138 days	Delay was due to non-receipt of relevant documents from the suppliers.
Ordnance Factory Chanda	2001-06	573	6 months to 4 years	Delayed receipt of relevant documents from the consignor led to such delays.
Small Arms Factory Kanpur	June 2001 to October 2005	444	15 to 347 days	Inspection involved testing of raw materials, dimensional accuracy, fitment and firing trials after assembly which took considerable time.
Ordnance Factory Trichy	2001-06	314	15 to 493 days	Not received
Vehicle Factory Jabalpur	2001-05	299	15 to 90 days	Delay in issue of inspection notes, user section's feed back report and critical test details were the major causes.
Ordnance Parachute Factory Kanpur	2001-06	221	19 to 428 days	Not received
Ordnance Factory Ambajhari	2001-06	215	91 to 1218 days	Delay was due to supply of stores without proper documents, delayed delivery of stores, receipt of stores in damaged condition, etc.
Heavy Vehicles Factory Avadi	2001-06	161	15 to 651 days	Not received
Ordnance Factory Varangaon	2002-06	114	60 to 210 days	Non-availability of quality conformance certificates from the consignor's end, deviation found in inspection led to such delays.
Ordnance Factory Kanpur	2003-06	82	15 to 660 days	There was delayed clearance of stores in inspection.
Engine Factory Avadi	2002-06	80	15 to 90 days	Delay was due to receipt of stores without inspection notes from DGQA.
Ordnance Factory Khamaria	2005-06	69	32 to 280 days	Not received
Ordnance Factory Muradnagar	2001-06	33	15 to 61 days	Extra time due to repeated tests led to such delay.
Ordnance Equipment Factory Kanpur	2001-04	22	25 to 107 days	Not received
Ordnance Clothing Factory Shahjahanpur	2001-05	17	53 to 184 days	Inspection took more time due to shortage in length and weight of the stores received.
	Total	**6051**		

(Source: Data compiled from relevant records of the factory management)

Annexure - IX

(*Referred to in paragraph 5.4.2.2*)

Details of delayed /non-commissioning of plant and machinery

Description of the machine (Number of machines)	Cost (Rs in lakh)	Date of receipt	Date of commissioning	Time taken (in months)	Delay in commissioning	Reasons for delay
(A) Delayed commissioning of machinery						
Ordnance Factory Muradnagar						
Arc Furnace 5 ton (1)	118.00	March 2002	March 2004	24	18	Erection work delayed due to major civil works
Arc Furnace 3 ton (1)	111.40	March 2002	March 2004	24	18	-do-
Shot Blasting plant (1)	15.81	November 2002	April 2005	29	23	Delay in modifications as per site requirements
SB-CNC-60 (2)	638.57	March 2003	March 2004	12	6	Extensive trial took long period after erection.
CNC Turning Centre (2)	81.53	September 2003	July 2004	10	4	-do-
Air Compressor (2)	21.33	February 2003	March 2004	13	7	Foundation work took long time
Auto Abrasive Plant (2)	32.71	March 2004	March 2005	12	6	Extensive trial took long time
Stress Relieving Furnace (1)	30.07	March 20 05	January.2006	10	4	Delay in foundation work
Gun and Shell Factory Cossipore						
CNC – High precision Cylindrical Grinding machine (1)	86.64	March 2001	March 2002	12	6	Non- arrangement of electrical connection
CNC Vertical machining center (1)	77.34	April 2002	June 2003	14	8	Short supply of items
Vertical machining Center (1)	69.64	August 2002	February 2004	18	12	Short supply of items, deviation in parameters
Automatic conveyer spray type varnishing plant (1)	14.93	March 2002	May 2004	26	20	Delayed response of the firm in commissioning.
Twin spindle turret lathe (1)	60.51	April 2002	July 2003	15	9	Delayed response of the firm in commissioning.
Twin spindle vertical honing machine (1)	127.76	December 2002	January 2004	13	7	Delay in deputing service engineers by the supplier.
CNC wire cut EDM model (1)	38.48	January 2003	October 2003	9	3	Delay in deputing service engineers by the supplier.
Horizontal Hydraulic band saw machine (2)	15.63	March 2003	January 2 004	10	4	Replacement of vital parts of the machines.
CNC internal thread grinding machine (1)	89.41	March 2003	February 2004	11	5	Short supply of items by the supplier.
CAD/CAM machine (1)	22.81	March 2003	January 2004	10	4	Delay in imparting training by the supplier.
Solid Model mid-level MG (1)	15.31	March 2003	November 2005	32	26	Delay in imparting training by the supplier, defects developed in software package.
6 Spindle Bar Automat Model (2)	235.08	March 2003	March 2004	12	6	Delay in deputing service engineers by the supplier, defects observed during commissioning.
CNC lathe machine (1)	92.09	March 2003	January 2004	10	4	Delay in deputing service engineers by the supplier,

						defects observed during commissioning.
ACE slant bed CNC lathe (1)	41.87	October 2003	June 2004	8	2	Delayed activities by the supplier.
CNC internal grinding machine (1)	46.75	March 2004	April 2005	13	7	Delay in deputing firm's representative.
6 Spindle Bar Automat Model (1)	116.59	March 2004	June 2005	15	9	Discrepancies noticed in the machine during commissioning.
Rifle Factory Ishapore						
CNC – Vertical machining centre (9)	915.82	August 2003	July 2005	24	18	Non-establishment of cycle time
CNC Vertical Boring and Milling (1)	265.88	May 2002	April 2003	11	5	Non-establishment of cycle time
CNC Horizontal machining center (3)	546.00	March 2002 (2) September 2002 (1)	October 2003	19 13	13 7	Spindle problem, coolant overflow
CNC Horizontal machining centre (1)	182.00	March 2002	October 2004	31	25	Problem in pallet setting
CNC Horizontal machining centre (1)	182.00	September 2002	November 2004	26	20	ATC problem
Small Arms Factory Kanpur						
Automatic Hard chromium plating plant (1)	107.40	October 2002	February 2004	16	10	Delay in finalisation of layout of the plant, non-availability of rectifier oil
CNC- Turn Mill centre (2 Nos.)	152.49	March 2003	December 2003	9	3	Non- achievement of cycle time
CNC Vertical Milling and Boring machine (2)	103.04	December 2003	January 2005	13	7	Delay in job trials and various other defects noticed.
Ordnance Factory Kanpur						
CNC Horizontal Honing machine (1)	263.05	January 2004	January 2006	24	18	Non-completion of foundation work and technical problem during trial
Double AAA Fully automatic boiler (1)	24.84	March 2002	November 2004	32	26	Non- completion of civil and electrical works, non-availability of IBR documents in time and delayed inspection/ registration of boiler
Multi Tooling Heavy Duty CNC lathe (3)	493.28	March 2003	February 2004	11	5	Non- completion of civil works.
Ordnance Factory Khamaria						
Multi punch multi mould pressing and extraction hydraulic press (2)	73.30	April 2002	February 2003	10	4	According to the factory management, the inordinate delay in commissioning the machines were due to delay in site clearance, lay out drawing from the user, clearance from safety division, civil works etc.
Universal Milling machine (1)	47.85	November 2004	August 2005	9	3	
Steam Heated incorporator cap. 200 Kgs (2)	18.93	November 2002	July 2003	8	2	
Medium Frequency Induction Annealing Furnace (1)	20.20	July 2002	March 2003	8	2	

CNC Twin Spindle chucker (2)	79.63	March 2002	December 2002	9	3	
CNC Universal Thread Grinding Machine (1)	73.06	February 2003	November 2003	9	3	
CNC Turning Centre with Bar Feeder (1)	24.76	March 2003	October 2003	7	1	
Diesel engine driven generator set cap. 320 KVA (1)	20.83	March 2003	November 2004	20	14	
CAD/CAM Hardware Server soft tech printer & Scanner (1)	22.94	April 2003	February 2004	10	4	
Solid Model MD Level (205 CAD/CAM software) (1)	15.31	March 2003	February 2004	11	5	
CNC Turn Mill Centre (1)	40.23	June 2003	March 2004	9	3	
CNC Turning Centre (2)	41.28	April 2003	February 2004	10	4	
CNC Automatic single spindle turret auto (1)	24.41	March 2004	January 2005	10	4	
CNC Automatic single spindle turret auto (1)	25.22	March 2004	February 2005	11	5	
CNC Twin spindle chucker (1)	52.17	April 2004	December 2004	8	2	
CNC Single spindle sliding head (2)	322.47	September 2004	April 2005	8	2	
CNC twin spindle chucker (2)	103.46	April 2004	January 2005	9	3	
Air conditioning plant cap. 40 TR (3)	52.60	March 2005	March 2006	12	6	
Vehicle Factory Jabalpur						
CNC vertical Turning centre (1)	46.00	November 2001	January 2003	15	9	Non-achievement of cycle time.
Unitherm Degauss design electrically heated quench furnace (1)	171.49	March 2003	July 2006	40	34	Delay in completion of civil works, delay in getting approval from Chief Controller of Explosives, Nagpur
HMT CNC Horizontal machining centre (3)	266.36	April 2002	March 2004	23	17	High cycle time, machining trials of the components could not be completed by GIF as sufficient castings were not available.
Ordnance Parachute Factory Kanpur						
Computer Controlled High speed lock stitch button sewing machines (4)	12.30	March 2003	January 2004	9.5	3.5	Delay due to extensive performance trial.
AC plant 180 TR (1)	100.50	March 2003	March 2004	12	6	Delay due to non-completion of civil works from factory's side.
Ordnance Factory Medak						
CNC double column Plano Milling machine (1)	2938.54	March 2005	August 2006	17	11	Civil work got delayed due to technical reasons/ unforeseen site condition like hard rock excavation etc.
Total (92 machines)	**10029.90 or say Rs 100.30 crore**					

Description of the machine (Number of machines)	**Cost (Rs in lakh)**	**Date of receipt**	**Date of commissioning**	**Time taken (in months)**	**Reasons for delay**
(B) Non- commissioning of machinery					
Ordnance Factory Ambajhari					
CNC lathe SB-CNC -60 (1)	150.58	March 2005	Not commissioned as of November 2006	20	Not commissioned for want of two numbers zib boom with air balancer.
Casting machine (1)	946.00	January 2002	Not commissioned as of November 2006	59	Non-establishment of 600 mm diameter logs by the machine
Ordnance Factory Medak					
CNC VTL machine (1)	1364.00	May 2006	Not commissioned as of November 2006	6	Expected to be commissioned in March 2007 due to delay in completion of civil works.
Ordnance Factory Muradnagar					
Varnishing and Baking plant (1)	37.35	May 2005	Not commissioned as of November 2006	18	Extensive trials took long time.
Ordnance Factory Chanda					
Electronic Attendance Recording System cum Access Control System (1)	73.09	March 2005	Trial run still in progress (November 2006)	20	The system is not giving the desired results.
Total (Five machines)	**2571.02 lakh or say Rs 25.71 crore**				
Grand total (97 machines) Rs 100.30 crore plus Rs 25.71 crore = Rs 126.01 crore					
Note: Six months was taken as ideal time required for commissioning after receipt of machinery *Source: Data compiled from Block Register for Plants and Machinery and relevant supply order files from the concerned factories.*					