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**STANDING COMMITTEE
ON DEFENCE
(1998-99)**

TWELFTH LOK SABHA

MINISTRY OF DEFENCE

ORDNANCE FACTORIES

SIXTH REPORT



सत्यमेव जयते

**LOK SABHA SECRETARIAT
NEW DELHI**

January, 1999/Magha, 1920 (Saka)

SIXTH REPORT
STANDING COMMITTEE ON DEFENCE
(1998-99)

(TWELFTH LOK SABHA)

MINISTRY OF DEFENCE

ORDNANCE FACTORIES

Presented to Lok Sabha on
Laid in Rajya Sabha on



LOK SABHA SECRETARIAT
NEW DELHI

January, 1999/Magha, 1920 (Saka)

C.O.D. No. 26

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CONTENTS

	PAGE
COMPOSITION OF THE COMMITTEE (1998-99)	(iii)
PREFACE	(v)

REPORT

CORRIGENDA TO SIXTH REPORT OF STANDING COMMITTEE ON DEFENCE (1998-99) ON 'ORDNANCE FACTORIES'

Page	Para	Line	For	Read
11	20	10	to more	to get more
14	-	(i) line 6 and 7 (Col. 3)	685 675	685
		(ii) Line 6 (Col. 4)	612 to	612 to 675
14	-	(i) line 8 and 9 (Col. 3)	287 300	287
		(ii) line 8 (Col. 4)	256 to	256 to 300
35	73	5	helping	help in

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CONTENTS

	PAGE
COMPOSITION OF THE COMMITTEE (1998-99)	(iii)
PREFACE	(v)
REPORT	
CHAPTER I Ordnance Factories—An Overview	1
CHAPTER II Committee's Conclusions and Recommendations.....	29
MINUTES OF THE SITTINGS	38
APPENDICES	46

COMPOSITION OF THE STANDING COMMITTEE ON DEFENCE
(1998-99)

Sqn. Ldr. Kamal Chaudhry — *Chairman*

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| 4. Shri K.D. Muley | — | <i>Assistant Director</i> |

PREFACE

I, the Chairman, Standing Committee on Defence (1998-99), having been authorised by the Committee to submit the Report on their behalf, present this Sixth Report on "Ordnance Factories".

2. The subject was first selected for examination by the Standing Committee on Defence (1996-97). The subject was reselected by the Standing Committee on Defence (1997-98). Both the Standing Committees formed a Sub-Committee (Sub-Committee-III) with Maj. Gen. Bikram Singh as the Convenor to study the subject. The Standing Committee on Defence (1998-99) decided to continue with the examination of the subject.

3. A list of dates on which the Committee/Sub-Committee was engaged on the subject is given below:

- | | |
|-------------------------|--|
| (i) 20 December, 1996 | Sitting of the Sub-Committee-III (1996-97) for framing list of points on the subject. |
| (ii) 28 July, 1997 | Sitting of the Sub-Committee-III (1996-97) to take oral evidence of the representatives of the Ministry of Defence. |
| (iii) 13th August, 1998 | Sitting of the Standing Committee on Defence (1998-99) to take oral evidence of the representatives of Ministry of Defence on the subject. |

4. Besides holding sittings as above, the Committee sought written information from the Ministry of Defence on the subject. The following written information was received from the Ministry of Defence:

- (i) A preliminary background note;
- (ii) Written Replies to the list of points on the subject;
- (iii) Updated brief on 'Ordnance Factories'.

5. The Committee (1998-99) wish to express their thanks to the Ministry of Defence for placing before them information on the subject.

6. The Committee (1998-99) would like to place on record their appreciation for the work done by the Standing Committees on Defence and Sub-Committees thereof for the years 1996-97 and 1997-98. The composition of the Committees/Sub-Committees are given at Appendices I to IV.

7. The Report was considered and adopted by the Committee (1998-99) at their sitting held on 25th January, 1999.

8. Chapter I of the Report is based on information/evidence furnished/tendered to the Committee by the Ministry of Defence, Chapter II of the Report contains Committee's conclusions and recommendations. For facility of reference the recommendations of the Standing Committee on Defence (1998-99) have been printed in thick type in the body of the Report.

NEW DELHI;
January 28, 1999
Magha 8, 1920 (Saka)

SQN. LDR. KAMAL CHAUDHRY,
Chairman,
Standing Committee on Defence.

REPORT

CHAPTER I

ORDNANCE FACTORIES—AN OVERVIEW*

The Ordnance Factories organisation is the largest departmentally run industrial undertaking in the country and is engaged primarily in the production of defence hardware. The organisation functions under the Department of Defence Production and Supplies and is a dedicated facility for manufacture of arms, ammunitions and equipment for Defence Services. It is also the oldest industrial establishment of India with its first factory founded in the year 1801 at Cossipore (Calcutta). It has grown into a versatile industrial establishment with 39 factories and manpower of 1,51,642, spanning a wide range of disciplines, technologies and product mix. These 39 factories are geographically distributed all over the country in 24 different locations. There are 10 factories each in Maharashtra and U.P., 6 factories each in Madhya Pradesh and Tamilnadu, 4 factories in West Bengal and one each in Andhra Pradesh, Orissa and Chandigarh. Out of these 39 factories, 16 were set up before Independence. The factories commissioned before Independence have capacities created not only for production of finished stores required by the Armed Forces but also had backward integrated facilities for supply of basic and intermediate materials for which the then indigenous civil infrastructure was inadequate. In respect of the factories set up after Independence, the concept of backward integration was progressively given up and the orientation was more towards production of finished stores, drawing upon supplies from the civil sector for the raw materials, components and semi-finished goods to the extent practicable.

Objectives

2. Ordnance factories have been set up to meet the requirements, particularly of the army in the field of conventional weapons, equipment, ammunition systems and other lethal and non-lethal stores. Facilities for aircraft, warships, electronic equipment, earth moving equipment, missiles, aeronautical grade super alloys etc., required by the armed forces in general and the army in particular were set up in Defence Public Sector Undertakings and not in the Ordnance factories.

*This Chapter is based on the information/evidence furnished/tendered to the Committee by the Ministry of Defence, Government of India.

Organisation of the Ordnance Factories

(i) Composition

3. In pursuance of the recommendations of an Expert and High Powered Committee called the Rajadhyaksha Committee, the Government re-organised the structure and the management of the Ordnance Factories organisation in 1979 for more effective management of the ordnance factories. Since then the Ordnance Factory Board has a full time Director-General of Ordnance Factories, who acts as Chairman of the Board, and 7 full time members in the rank of Additional Director General of Ordnance Factories. While the Director-General is in the rank of a Secretary to the Government of India, the Additional Directors-General are in the rank of Additional Secretary to the Government. Besides the 7 members, the Additional Director-General of the Ordnance Equipment group of factories at Kanpur and the Additional Director-General of the Armoured Vehicle Division as Avadi are permanent invitees to the Board thus effectively raising the strength of members to 9. The Director-General and 8 Additional Directors-General are selected from the organised Indian Ordnance Factories Service and 1 member is selected to serve on deputation on the Board from organised accounts services of the Union Government to hold the Member (Finance) portfolio. The 9 Additional Directors-General are in charge of the following five operating divisions and four staff functions:

Operating divisions

- (a) A & E — Ammunition and Explosive group of factories;
- (b) WV & E — Weapons, Vehicle and Equipment group of factories;
- (c) M & C — Materials and Components group of factories;
- (d) AV — Armoured Vehicle group of factories (Avadi);
- (e) OEF — Ordnance Equipment group of factories (Kanpur);

Staff functions

- (f) Finance;
- (g) Personnel;
- (h) Planning and Materials Management;
- (i) Projects and technical services.

Thus 1 member is made in-charge of every operating division and every staff function.

(ii) Term of Chairman and Members

4. There is no minimum tenure specified for the Chairman and Members except the Member (Finance), who are promoted from the Indian Ordnance Factories Service. An officer with a minimum of 3 months service left before retirement can be promoted. The terms of the members vary from the date of their promotion to their retirement date. In certain cases, it has varied from as long as five years to the minimum three to four months only. Member (Finance) is generally appointed on deputation for a minimum period of three years.

(iii) Powers

5. Powers have been conferred on the Ordnance Factory Board to make it independent from the Ministerial control to enable it to take decisions quickly for administration and production so that it works as an autonomous enterprise. Only a few import proposals beyond a certain value are referred to the Ministry. Import content in the products (excluding tanks) of Ordnance Factory Board is 2 to 3 per cent. The Board has full powers regarding posting, transfer of officers and cadre management except promotions. Promotions require consideration by UPSC and the Ministry. For posts in the super time-scale equivalent to Joint Secretaries and above, approval of Appointments Committee of Cabinet is required. The Government have delegated further powers for decentralised functioning to the ordnance factories at the General Managers level to enable them to carry out the day to day administration and production activities.

(iv) *ex-officio* members at special Board meetings

6. As primary responsibility of the ordnance factories has been to meet the requirements of the armed forces, particularly the army, additional *ex-officio* part time members have been nominated by the Government to attend special Board meetings. This is with a view to have a co-ordinated approach with reference to induction of weapons and equipment systems to the armed forces and to strengthen policy planning. They attend special Board meetings wherein policy proposals regarding new investments/projects, annual/five year perspective plans and pricing of products are considered. The additional part-time members

are Master General of Ordnance or Director - General (Ordnance Services), Director-General (Quality Assurance), Chief Controller of Research and Development, Joint Secretary (Ordnance Factories) and Additional Financial Adviser of the Department of Defence Production and Supplies. These part time members do not have any fixed tenure and are *ex-officio* members since they hold their relevant appointments in the Government.

Whose requirements ordnance factories meet?

7. Ordnance factories meet the requirements mainly of the armed forces particularly the army and incidentally meet the requirements of (i) the Central and State Police Organisation; and (ii) the civil sector. Some defence hardware is also exported.

Broad areas of demand

8. For conventional weapons, equipment, ammunition systems, clothing and other stores, the army's requirement can be classified into the following categories:—

- (i) Ammunition for weapons, guns, small arms, rockets, projectiles, pyrotechnics, bombs, mines etc.;
- (ii) Weapons including guns, mortars, small arms like rifles, pistols and carbines etc.;
- (iii) Infantry combat vehicles, battle tanks, armoured personnel carrying vehicles (categorised as 'A');
- (iv) Transport trucks and vehicles (Categorised as 'B'); and
- (v) High altitude and combat clothing, leather items, parachutes, assault boats etc., optical and fire control instruments, field communication cables etc.

Supply of the above items is linked to the priority requirements of the army and the availability of the budget. Even though army's requirements may be more, supplies from ordnance factories get guided by the availability of the budget. Army's requirement of conventional weapons, Armoured Personnel Carriers, clothing items etc., is generally met. There had been however some delay in supplying some equipment like tanks due to (i) delay in positioning of raw materials/product support on account of failure of the source of supply *i.e.* from the Indian trade sources

or from import; and (ii) quality problems in the indigenously developed sources.

Production achievements

9. The value of sales during last 6 years and planned targets for 1998-99 are given below :—

Year	Defence		Non-defence	Total (in crores)	%age increase over previous year	
	Army	Other sectors			Army	Total
	1992-93	1339			99	271
1993-94	1406	117	393	1916	5.02	12.06
1994-95	1493	121	372	1986	6.13	3.68
1995-96	1704	193	411	2308	14.14	16.21
1996-97	1990	208	363	2561	16.77	10.98
1997-98	2424	220	427	3071	21.81	19.91
1998-99 (planned)	3188	260	490	3938	31.52	28.23

By suitably upgrading and reorganising their technological base through selective modernisation of the existing facilities at the time of renewal and replacement as well as through setting up of new facilities wherever needed, ordnance factories have taken up bulk production for meeting the regular requirement of the new and important systems for the armed forces.

Production constraints

(i) Inadequate Stores Budget

10. Funds in the form of issue budget for the army as well as the stores budget on which the procurement of material for manufacturing

activities is dependent, have not been adequate in some years. The lead time for positioning of material varies from 6 to 18 months. For some critical components of tanks and other vehicles lead time of 2 years is required. Thus the stores budget has to take care of positioning of material even for the next year. The inadequacy of stores budget in any year will have effect on positioning of material for taking up manufacture of items in the beginning of the subsequent year and hence can lead to delay in manufacture in that subsequent year.

(ii) Manpower constraint

11. While there is a need to regulate manpower to improve cost effectiveness, yet at the same time there is need for qualified technical staff for coping with productionising the emerging and changing requirements of the armed forces in certain factories. The induction of fresh work-force is being strictly regulated. Wastage on account of retirements are not being made good, in general. However, production of new sophisticated items requires different technically qualified staff to man the process. In many areas the new machines which are being positioned are of high technology. While emphasis is being laid on training or redeployment of the existing manpower, the high age profile, as expected, has inherent difficulties in handling such plant. Maintenance of such machines and plants also requires adequate technically qualified persons. For this purpose a minimum induction of fresh manpower possessing appropriate qualification is necessary. To look after this aspect and to sustain the skills, limited induction of manpower has been taken up. This is being reviewed on year to year basis. The wastage on account of retirements in the next few years will be quite high. While there may be surplus manpower in certain factories where old lines of production have been closed, there is acute shortage in some other factories where new items are being taken up and the staff cannot be transferred. This has also been one of the problems is production of items in time. The review has been undertaken to work out strategy for minimum induction of qualified manpower in the next few years.

(iii) Delay in supplies from foreign countries

12. The Government have stated that some of the items are required to be procured from Russia or former Soviet Union countries for product support. At times, their response has not been timely and even when the orders are placed there have been delays in receipt of materials, which result in delay in production.

(iv) Constraints with respect to specific products

(a) Tanks

13. The Government have stated that with a view to increasing self-reliance, production of the modern tanks was taken up on the transfer of technology arrangement from Russia. The earlier tanks were manufactured with CKD (completely knocked down)/SKD (semi-knocked down) arrangements. Now in the last few years, production of these items indigenously had been increasingly attempted but there had been quality problems. The sources are now coming up but they take more time than expected in development/manufacture of the required quality. Though most of the tanks have been manufactured by the ordnance factories, yet adequate number of final issue of tanks does not take place for want of quality product from these sources. This has generally been overcome and expected to be improved further.

(b) Ammunition items, clothing items and Transport Vehicles

14. Three types of ammunition are under manufacture namely (i) conventional/established items, (ii) newly developed items and (iii) items under development. For established items, no constraints are experienced except that on a few occasions, the established sources may fail to supply the materials due to reasons beyond their control. In the newly developed items, some of the material are still required to be imported for which the technology transfer is not available. Process of placing of orders and delivery from import takes six months to one year. Some of the other production constraints are :

(1) Bunching/queuing at proof or testing ranges

15. All components are required to be tested/subjected to proof before these are taken up for final filling and even after filling these are required to be tested/proved. Further the facilities are located only at a few strategic places. Some times, due to delay in receipt of material for one component or failure of one lot in proof, the components to be tested at that stage and final stage get bunched up at the proof ranges especially during the last quarter of the year. Hence, though the ammunition has been manufactured but due to inadequacy to meet such requirements of proof testing, delivery of ammunition gets delayed.

(2) Fluctuating cotton prices

16. When the cotton prices shoot up, the suppliers do not supply the material in time resulting in delay in manufacture of clothing items.

(3) Interruption in power supply

17. Interruption in power supply to the factories also affects production. This has been partially overcome by installing diesel generating sets for essential/critical machines.

Capacity utilisation

18. Capacities were created in ordnance factories to ensure production of items to the extent projected by the army. Surplus capacities in ammunition and other selected items have been specifically created to cater for surge requirement during war time. Since production in the ordnance factories has primarily to be on the basis of the demands of the army and para military forces, the size and value of production depends upon the issue budget provided to the army and the para military forces for conventional weapons and the *inter se* priorities of the equipment. The Government have stated that the actual demands of the armed forces in peace time would necessarily be lower than the installed capacity due to the following reasons :

- (a) overall requirements linked to the budget available;
- (b) *inter se* priorities of products; and
- (c) fluctuation in demand of old type of products for which the capacities had been created to meet higher demand at that time.

Capacities available and utilisation in the ordnance factories are generally measured in terms of standard man hours (SMH). This means that for every item produced in the ordnance factories, a standard labour estimate is prepared to arrive at man hours required to carry out manufacture of one unit of this item. This is based on a time and motion study of every operation required to be performed for completion of the item right from the stage of receipt of input material up to the issue of finished product. The aggregate of man hours required to carry out all the operations is taken as a standard man hour (SMH) required per unit of that item, taking into account the actual number of persons available, number of

hours per shift and other relevant factors such as machines, type of product for which capability was set up. To improve utilisation of available capacity, especially in general engineering and metallurgical group, where the capacities can be utilised for the civil market, the spareable capacities are being deployed for civil market, wherever possible, after fully meeting the requirements of the defence forces which has also resulted in overall improvement in capacity utilisation. The Government have stated that inspite of the above, capacity utilisation in some of the factories in certain years may show downward trend because of the following factors :

- (a) reduced load requirements for the old type of propellants, high explosives, artillery guns etc.;
- (b) some capacities are being modified for development of new items and their proportionate utilisation will increase only when the bulk production is taken up;
- (c) in case of systems/equipment requiring a number of components/sub-assemblies, the final issue could not take place due to non-availability of a few components even though major part of the items was completed; and
- (d) a number of small jobs undertaken do not get included while arriving at the consolidated data regarding capacity utilisation.

The capacity utilisation, as a total, in all the ordnance factories for the last five years is given in the following table :

Year	Available SMH	Achieved SMH	Capacity utilised percentage
1993-94	2290.53	1387.11	60.56
1994-95	2313.98	1335.04	57.69
1995-96	2331.54	1538.78	66.00
1996-97	2345.38	1547.73	65.99
1997-98	2358.80	1575.63	66.80

The table shows that nearly 35% to 40% of the capacity is not being utilised on an average.

Loss due to faulty production

19. Losses due to faulty production are on account of defects noticed in manufacture and also losses due to consumption of material beyond the unavoidable rejection percentage provided in the manufacturing estimates. Whenever such losses occur, these are investigated by a duly constituted 'Inquiry Board' which goes into all the details to arrive at reasons resulting in such manufacture and also recommends remedial measures to avoid recurrence. The Government have stated the following main reason for such losses based on investigation.

- (a) internal defects in input material getting revealed during manufacture e.g. steel rods revealing piping/seam during machining;
- (b) internal defects in input half wrougths getting revealed only during manufacture;
- (c) abrupt malfunctioning of heat treatment furnaces;
- (d) mix-up in steel bars received from suppliers resulting in material and manhour loss;
- (e) sudden power failure;
- (f) sudden stoppage of supply of import item necessitating development of indigenous alternative;
- (g) erratic functioning of old plant and machinery;
- (h) change in design parameters of components based on investigation done on field failures resulting in existing pipeline stock being rendered unserviceable; and
- (i) change in design parameters during productionisation of defence stores in initial production runs which are necessitated as a result of continuous feedback during proof of indigenously developed designs.

The total value of loss due to faulty manufacture as a proportion of total value of production is 0.32 per cent per year on an average.

Efforts made to streamline production processes

20. The Government have stated that the ordnance factories are making constant efforts to improve the production processes, to replace costly materials by cheaper though qualitatively comparable substitutes, to change designs, save energy etc., through the value engineering practices since 1980. As a result of the value engineering studies the expenditure in ordnance factories/cost of products have been brought down by a few crores of rupees. In addition to value engineering (VE) studies, efforts are made in various areas so as to reduce/control cost. Those areas are :

- (a) reduction in cycle time of an operation so as to more output from same machines/manpower;
- (b) improvement in the shop layout;
- (c) improvement in the material handling system;
- (d) introduction of adequate on-line process control;
- (e) replacement of old plant and machinery by machines of a better technology;
- (f) reduction of cost by better inventory control; and
- (g) adoption of quasi-commercial system of accounting and review of the performance indices of the factory calculated twice a year.

Financial Management

(1) Assets of the Ordnance Factories

21. The total book value of the assets (buildings, plants and machines) of the ordnance factories as on 1st April 1996 is Rs. 2335 crores excluding land. Capital expenditure/investments are made as a continuous exercise primarily for renewal, upgradation/creation of lines of production to meet the changing requirements of the defence forces.

(2) Costing

22. Ordnance Factories cater to the Armed Forces on the basis of their costs, without earning any profit. However, they do earn surpluses from

sales made to other non-defence customers. The system of accounting in the factories is such that the surpluses are neither retained nor carried forward from year to year; they are translated into reduction in prices payable by the Armed Forces. For every item produced in ordnance factories, a standard technical estimate is prepared which indicates the estimated cost of the item based on the material and labour as per skill requirements and trades as also the estimated overheads. A systematic method of classification and control of overhead expenditure is also in existence. The overhead expenditure for each workshop is estimated in advance based on anticipated product mix and work-load and these are allocated to the cost of the items produced. Whenever any change takes place in the process of manufacture or the technology adopted, the estimates are refined and any cost reduction benefit is passed on to the Armed Forces.

(3) Pricing

23. From 1991 a practice has been adopted in which an indicative price list for the Armed Forces is issued before the beginning of the financial year wherein the prices are computed on the basis of the projected costs of material and labour inputs in accordance with pre-determined norms and the related overheads and also taking into account the actual costs of production for previous two years. These prices are firm and final and form the basis on which the Armed Forces are billed for issues made to them during the financial year. In respect of sales to other Departments, State Police, private parties etc., the prices charged have some element of profit. In cases to civil market or export, depending on market prices, either full cost or full prime cost on direct labour and material and a percentage of overheads costs is charged to utilise the separable capacities. Prices for export are fixed on the basis of recovering full cost, including financial charges, element of profit, agency commission/service charges payable to PSUs, if any. The benefit on account of sale to non-defence customers is passed on to the Armed Forces in two ways:

- (a) reduction in unit cost of production and hence in their prices; and
- (b) making more issues to Armed Forces for a given amount of fund.

The Government have also decided that overall prices of established items would not be permitted to be higher than those in the previous

year by more than 8%. To the extent the actual escalation of input costs remains unneutralised, the benefit has accrued to the army.

(4) Budgeting and monitoring

24. Budgetary control is being exercised by a detailed monitoring system on the budget requirement for each of the 39 Ordnance Factories and is linked to their production programmes for the year. Once the grant is passed by the Parliament, the funds are allotted to each factory based on their production programme and likely issues/expenditure during the year. The allotment of funds under stores is computed after considering the inventory holding *i.e.* stores in hand, work in progress, component stocks and dues of the factory as well as required material consumption for the targeted level of production based on past consumption for 2 to 3 years. The expenditure against the allotment under various heads is monitored at Board level in its monthly Board meetings as well as at factory level in its ULMC (Unit Level Management Committee) meeting held every month. The expenditure is also compared with the progressive expenditure upto the month of the previous financial year and in case of major variation, detailed examination is carried out. From the year 1995-96, a system of breaking down the Ordnance Factory Board Budget, both expenditure and issues/receipts, factory-wise has been introduced and the net budget of the factory indicating budgetary support taken by the factory upto the month is compared *vis-a-vis* estimated figures. This provides direction to the management for effecting improvements in the overall performance.

(5) Comparative costs

25. The Government have stated that comparison of cost is difficult as identical items are not generally manufactured elsewhere. The comparative cost of some of the items manufactured in ordnance factories with those manufactured in other PSUs/private sector (trade) is given below :

Sl.No.	Item	Unit Cost (Rs.)	
		OFB	Trade
1	2	3	4
1.	Passive Night Sight 84 mm C.G. (1994-95)	63,845	71,000
2.	Passive Night Vision Binocular (1994-95)	64,500	65,768

1	2	3	4
3.	Compass Prismatic Liquid (1996-97)	1,533	1,550
4.	Panoramic Sight for SP gun (1994-95)	10,25,000	11,00,000
5.	Oil storage Barrels/Drums	685 675	612 to
6.	Jerricans (1994-95)	287 300	256 to
7.	12 Bore Cartridges	9.62	11
8.	5.56 MM Brass cup per kg.	260	228
9.	C-48 Box	2421	2700
10.	Engine V 46-6 for T-72 Tanks (1995-96)	20,32,000	31,00,000
11.	Nets Mosquito Universal Khaki Round Mesh (1994-95)	275	282
12.	Trousers Combat Disruptive from Drill Cotton (1994-95)	247	207.50
13.	Jersey man woollen OG MK-II (1994-95)	195	111.80
14.	Blanket barrack	259	188

Foreign Collaboration Agreements

26. The Government have stated that the following foreign collaboration agreements have been entered into after 1980 :

- (1) Collaboration Agreement was concluded on July 19, 1982 between Government of India and Government of erstwhile USSR for transfer of licence, documents for indigenous manufacture of Tank T-72 MI System (Ajeya). With the

acquisition of technology, indigenous production has started and the country has become self-reliant for manufacture of these items.

- (2) Collaboration Agreement was concluded on March 30, 1981 between Government of India and erstwhile Government of USSR for transfer of licence production of USSR make BMP-I (Sarath) (Boyevaya Machina Pekhoty) system in India and contract was signed on February 21, 1982. Subsequently, collaboration agreement for BMP-II was signed in December, 1984. With the acquisition of technology, manufacture of BMP-II (Infantry Combat Vehicle) named Sarath started to meet the needs of the army.
- (3) Four different credits (Initial and additional for BMP and T-72) amounting to 1140 million roubles were availed.

With the above collaborations for manufacture of new generation tanks and the infantry combat vehicles and systems, including missiles, modern infrastructural facilities were added to the family of ordnance factories. The Government have stated that this has given the required strength to manufacturing capabilities for armoured vehicles and their variants. Only a very few countries in the world produce these categories of systems and we are one among them. Self-reliance and self-sufficiency will be thus sustained. The country is well poised for export of know-how and also arrange supplies or even render project consultancy.

Quality Control

27. Quality of a product starts from the user's requirements through design, materials used, production processes, quality control of processes, final tests, packing and despatch and field usage of the product as per stipulations laid down. Supply orders for raw material/bought out items are placed on Director-General Quality Assurance (DGQA) approved sources and these materials are received in the factories after acceptance by DGQA Area QA establishments. Thereafter materials are taken for processing and strictly adhering to the process schedules laid down and ensuring quality by exercising checks by quality control department of the factories as per inspection schedules laid down. In addition the Resident Inspectors of DGQA carry out surveillance audits during course of manufacture apart from carrying out quality audits at specified control points (for critical parameters). Final Acceptance Inspection including

proof test is done by DGQA Resident Inspectors before despatch of products to users. Improvement of Quality System standards and implementation of various concepts are ongoing processes. Ordnance factories have been gradually implementing various Modern Quality Concepts and Standards. Some of the achievements in the quality control area are :

- (a) 38 Ordnance Factories have already been certified to meet International ISO 9001/9002 Quality Management Standards by the Internationally Accredited Certification bodies. The ordnance factory project at Bolangir is in the process of implementation/certification of the same. Apart from this, 7 test laboratories of Ordnance Factories met the stringent requirements of National Accreditation Board of Testing and Calibrating Laboratories (NABL) under the Department of Science and Technology and certified under NABL criteria;
- (b) Additionally modern quality management techniques *e.g.* 7-QC Tools, Quality Circles, Taguchi Methods and so on are being gradually implemented in all the ordnance factories to improve upon the quality of the outgoing products;
- (c) Each Factory has evolved specific methodologies for quality improvements and the same is monitored at functional level and Apex Level. Deviations in quality are analysed through Task Forces set up at the factory level and remedial measures are taken by reviewing the specific progress made through Monthly Quality Liaison Meetings and by issuing directives to the shop-floor for implementation.
- (d) DGOF and DGQA at the Board level assess the overall trends and effect improvements. The quality policy is also amended periodically in accordance with the norms/specifications for the defence stores and overall economics.

Cost and Time Overruns

(1) Time overrun

28. The production in Ordnance Factories is based on the projections annually given by the defence forces. Generally, supplies of conventional/ established items can be made on time within the year. For newly developed items, critical to timely manufacture of items is the

pre-positioning of materials, some of which are purchased from the open market or abroad, some are prepared in-house and some are obtained from vendors. A proper and efficient management of that process is of utmost significance. In some cases, such as for tanks, the production cycle is longer than a year. In such cases, a roll on schedule has to be maintained. The Government have admitted that time overruns were there in the production of tanks because of the following :

- (a) delay/decline in response and product support assistance for critical items owing to dislocation in supplies from Russia and other former Soviet Union countries;
- (b) Ordnance factories switched over from assembly, initially with materials and components, semi-knocked down/completely knocked down, imported from erstwhile USSR to indigenous material components and sub-systems, most of which has to be developed through reverse engineering; and
- (c) Introduction of high degree of technological upgradation and specialisation.

For newly developed items and items under development, the production/supplies are to be made after clearance from various agencies and any mid-course correction therein can result in time overrun as in the case of FSAPDS (Fin Stabilised Armour Piercing and Discarding Sabot) ammunition. There has been time overrun in supplies in such cases because drawing of inspection schedule, experimentation designing by reverse engineering, development of sources for product support etc., had to be done concurrently with production.

29. The total number of items in respect of which the targets could not be fully met is approximately 8% of the total number of major items in the last 3 years. The failure to meet targets in case of the majority of the items is only partial.

(2) Cost Overrun

30. The system of pricing between ordnance factories and the Armed Forces is based on the principle of 'No Profit and No Loss'. Control of costs has, therefore, to be exercised through control of overhead, proper acquisition of inputs, inventory management and check on rejections. Detailed measures in that behalf have been taken with reference to each

factory. Those measures are of continuing nature and have to be effected in a sustained manner. Also observations received from the defence forces regarding price calculations are mutually discussed and settled. As mentioned earlier, supplies to the armed forces have generally been as per their Budget projections. Therefore question of cost overrun does not arise.

Diversification

31. The Government while recalling the recommendations of the Parliamentary Standing Committee on Defence made in their second Report of 10th Lok Sabha that no dilution can be permitted in the Ordnance Factories' primary commitment to catering to the requirements of the armed forces, have stated that diversification has been undertaken by the Ordnance Factories to supply items produced by them to customers other than defence forces only with a view to fruitfully utilising the spareable capacities. Diversification would give rise to increase in turnover, rise in productivity and reduction in unit cost. Diversification would also offer avenues for them to come into business contacts with the open market and they are able to imbibe the culture of the commercial and industrial sectors. The ordnance factories also seek to make their contribution to the nation's industry by throwing open the use of its spareable machine capacities and skills by the private sector on appropriate payments. Diversification has thus the following objectives :

- (a) commercial utilisation of spareable machine capacities, skills, manpower and other assets after fully meeting the requirements of defence forces;
- (b) enlarging the turnover by expanding the products to civil sector leading to higher productivity;
- (c) reducing the vulnerability of ordnance factories to fluctuations in orders from the Armed Forces;
- (d) enhancing exposures to the commercial industrial sector leading to greater sensitivity to cost, prices, productivity and other commercial practices; and
- (e) bringing about attitudinal changes in the behaviour of managers and workers.

Two private agencies TCS (Tata Consultancy Services) and MECON [Ms. Metalurgical and Engineering Constructions (India) Limited] were appointed as consultants with the objective of assessing the potential for diversification and identifying the products for civil market which could be manufactured in the ordnance factories.

32. TCS identified (i) copper tubes, (ii) grinding media balls, (iii) aluminium motor housing, (iv) investment castings, (v) spheriodal grey iron castings, (vi) brass tubes, (vii) aluminium light alloy wheels and (viii) germanium oil, as eight components where spareable capacities in ordnance factories could be utilised for supply to non-defence sector. The components such a brass tubes, germanium oil, grinding media balls, aluminium light alloy wheels etc., have been successfully manufactured within the available capacities and supplied to the civil market. The Government have stated that a review indicated that though these components are acceptable to the market, revenue is static.

33. Some of the other projects for diversification and the result thereof are indicated below :

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|---|---|
| (1) Wind Mills | It required acquisition of land in selected areas/choice locations wherein the wind speeds were favourable. Private organisations were able to acquire land with speed and block the areas. The Government have stated that such flexibility of operation is not available to them. |
| (2) Refrigerated Trucks and Battery Operated Vehicles | Civil Jonga Vehicles are being made in Vehicle Factory, Jabalpur and marketed. |
| (3) Transmission towers | Though facility is available in Gun Carriage Factory, Jabalpur, the market itself is saturated with supply in excess of the demand. The project was dropped. |

- | | |
|--------------------------------|---|
| (4) Textile machinery | The collaboration with private organisation could not be pursued since the technology offered was not up to the mark. |
| (5) Granite processing machine | The project appeared to be technically viable, but the cost of production for the product was not economical/competitive. |

34. Based on the market survey Report from M/s MECON exclusively on Grey Iron Cast products, it has been possible for Grey Iron Foundry, Jabalpur to raise the volume of civil trade activities to a level worth Rs. 2.5 crores per annum from a level of Rs. 0.5 crores. The Government have, however, stated that there is a potential for diversification in various factories (the highest in the engineering and metallurgical factories and the lowest in the Ammunition and Explosives factories). About 80% of the investments on plant and machinery are defence dedicated without civil sector flexibility. While supplies to para-military forces have come from Ammunition and Armaments group of factories, the supplies to civil sector have come from Metallurgical, Equipment, Engineering and Transport vehicle groups. Technology-wise, in linear diversification, the Ordnance factories have increased their sales of customary products to para-military forces and also made a beginning in exports. In the civil sector, the major customers include Railways, PSUs and other Government Departments.

Off-loading to civil trade

35. The Government have stated that the Ordnance Factory Board was asked to off-load low technology items to civil sector and concentrate on production of sophisticated and state-of-the-art armament technology. Accordingly, action was initiated by the Ordnance Factories to off-load low technology items. Till July 1989, 152 items were off-loaded. But in view of the major changes in the product mix, declining load for certain items from the Services and proper capacity utilisation, the matter was reviewed in August 1989. The Ordnance Factory Board was advised that "before items are off-loaded to the civil trade, it should be seriously examined whether OFB can manufacture them in-house without any additional investment or only with very marginal investment". Since then off-loading is being done after very careful scrutiny of the demands

of the Services specially for items of the clothing and equipment group (OEF). Many items of clothing, which were off-loaded, have gradually been entrusted by the army back to the Ordnance Factories due to quality, specification and user satisfaction problems. This arose out of comparison of quality of materials supplied by private agencies *vis-a-vis* that supplied by Ordnance Factories as per a survey carried out by the then MGO and ADGOF in Central Ordnance Depot (COD), Kanpur in 1990. Blankets, woollen socks are some of the items. However, taking assistance from civil sector for supply of materials, components and sub-assemblies is an on-going process and assistance is taken wherever required and found suitable.

Inventory Management

36. The inventory management structure in each Ordnance Factory is meant to achieve :

- (a) procurement of materials of desired quality, in time and at reasonable price in order to maintain optimum levels of stock for meeting the stipulated delivery schedules of end products to the Armed Forces; and
- (b) periodical review of the stocks to identify items being surplus, obsolete, process scrap or waste and to make arrangements for their disposal in order to get revenues.

37. The quantum of materials to be procured is arrived at after taking into consideration :

- (i) annual production plan for the production items;
- (ii) estimated utilisation of stores of material for each end product as per the standard estimates; and
- (iii) net deficiency after taking into account the present stocks and the anticipated dues on the past actions.

38. The procurement of stores are carried out through tendering procedure. Open advertised tenders or limited tenders from the past established suppliers are invited. Capacity verification of the intending suppliers is done through the Quality Assurance Organisations. Inventory management is computerised in all the factories including the priced stores ledgers.

39. The inventory available in the stock are broadly classified into the following groups depending upon the status of utilisation for production or maintenance as the case may be :

- (i) active inventory meant for current consumption for production.
- (ii) slow moving items which are those items not in usage for the past one year.
- (iii) non-moving items which are those items which were not in use for the past three years.
- (iv) maintenance inventory—the essential spare parts meant for plant and machinery in use considered as insurance stores against machinery breakdown.
- (v) scrap/wastes comprising items arising out of production processes intended to be disposed of.
- (vi) surplus/obsolete items—for those stores not under current manufacture and also the stores which have become obsolete due to changes in design.

Disposal of unwanted stores

40. The Stock Review Committee at the factory level reviews all stock items twice a year. This Committee analyses those items coming under slow moving and non-moving categories for assessing the possibilities of their use in the next two/three years. In case the Committee finds that no suitable use in the foreseeable future is likely, it decides to declare the items as "serviceable surplus". These items along with other surplus stores items are circulated among other ordnance factories, defence departments including Ordnance Depots and then finally to the "Technical Co-ordination Committee" to explore the possibilities of any use. If the above users do not require such items, these are disposed of through open auction or by inviting sealed tenders. At times, the services of agencies like Metal Scrap Trading Corporation are also availed in the disposal of surpluses/wastes depending upon the nature of items. Items like non-ferrous scrap/waste materials like copper, brass, aluminium items are first offered to respective melting factories which make use of these scraps as input material during melting. Only after ascertaining their requirement action is taken for disposal. In 1996-97, slow/non-moving items in inventory amounted to Rs. 239 crore out of total inventory

of Rs. 1378 crore. Out of this Rs. 168 crore is blocked inventory on stores procured for indents since short closed/cancelled. In these cases efforts are being made to revive indents from the Services to the extent possible.

Exports

(1) Policy

41. The value of exports has steadily grown over the years. From a mere trifle figure in 1989-90, the growth of exports has shown an upward trend to almost Rs. 24 crores (shipped) in 1997-98. While direct aggressive marketing has been initiated by Ordnance Factory Board on the one hand, equally Agents, both in India and abroad have been appointed on the other hand to further boost Ordnance Factory Board's exports. Assistance is now also being taken for marketing OFB's products through Embassies/High Commissions of India abroad. The Ordnance Factory Board was authorised in 1989 to directly undertake the export of its products within the broad parameters of the country's foreign policy and strategic concerns. Under the revised guidelines, ordnance factories export their products wherever spare capacity is available as a result of fluctuation in demand from the Armed Forces. Regarding pricing, as per Ministry of Defence instructions, it should be possible to realise up to minimum of strategic price that is material plus 50% of labour plus 30% of overheads plus 5% towards freight, packaging and handling. Exports cannot be made to countries in the negative list maintained by the Ministry of External Affairs and all exports are done after due clearance from the Ministry of Defence.

(2) Steps for boosting exports

42. The Government have informed that in the context of budgetary constraints faced by the Services, all possible efforts are being made by the Ordnance Factory Board to increase their sales potential in the internal civilian market as well as international market. With a view to boosting exports, following steps have been taken :

- (1) potential items have been identified on the basis of spareability of services and cost competitiveness;
- (2) thrust countries have been identified where OFB products can be marketed and where the weapon system is similar to ours;

- (3) Embassies and High Commissions abroad have been approached to make in-roads in the respective countries;
- (4) assistance is being taken from PSUs and other firms abroad for sale of OFB products;
- (5) advertisements are being periodically inserted in International Defence Journals for publicity;
- (6) popularising OFB products through participation in International Defence Exhibitions;
- (7) presentation of OFB's capability to visitors and foreign delegates;
- (8) maintaining data bank on international prices of arms and ammunitions for reference and guide in quotations; and
- (9) formation of Task Force for suggesting measures for export promotion and identification of product potentials.

(3) Constraints

43. The Government have admitted that the following are some of the constraints faced by the Ordnance Factory Board in exporting OFB products :

- (1) non-compatibility of OFB items with those in use with many countries world-over;
- (2) less than competitive prices;
- (3) non-spareability on account of heavy domestic demand for certain items; and
- (4) licence restrictions prohibiting export of certain items.

In-house Research and Development

44. The basic research and development activity is vested with Defence Research and Development Organisation. However, the ordnance factories have been undertaking in-house research and development activities mainly in the areas of product/process improvement as well as some reverse engineering activities with investment limited to Rs. 1 crore for

each project. The total number of successful in-house R & D projects taken up by Ordnance Factory Board in the last five years are over 200 and total amount spent was Rs. 15 crores. Significant achievements have been made in the areas of development of propellants, fuses and explosives, components of ammunition, armaments as well as for armoured vehicles.

Indigenisation

45. The Government have stated that Armoured Vehicles group of ordnance factories have achieved self-reliance in most of the items to the extent capacities were created. Indigenisation has been achieved to the extent of 95 per cent by value of the assemblies/sub-assemblies except in some of the items for which indigenisation efforts are still in hand. Indigenisation has been achieved even for items for which technology transfer was not available. Some propellants and fuses of a few ammunition items for which technology transfer was not available are being imported. There were occasions which necessitated import of assemblies/sub-assemblies/components mainly due to non-receipt of sufficient quantities in time from indigenous trade sources. Value of such items is about 2 to 3 per cent of sales.

Modernisation efforts

46. The perspective plan of the Army and also the inputs from the Defence Research and Development Organisation on development of the Services, form the basis of planning for future capacities and modernisation of ordnance factories to meet the requirement of the Services. Approach for modernisation encompasses upgradation of process technology through renewal and replacement, abandoning obsolete processes and products, not investing where reliable trade sources can be developed, setting up of plant and machinery for new technology through in-house Research and Development, technology transfer from Defence Research and Development Organisation or from abroad for new products, processes and technologies.

47. During the 9th and 10th Plan, in addition to modernisation plans in core sector group of factories connected with arms, ammunitions and armoured vehicles, it is also contemplated to modernise facilities in certain factories associated with input material and components to widen this range of products to cover the futuristic requirements in areas like space, ship yards, Railways etc. It is also contemplated to re-orient the product range in certain factories not directly connected with core group activities,

so as to bring their product range to assist the main core group factories. While planning for modernisation, it will also be the objective to make the facilities flexible and capable of accommodating any futuristic items of similar nature. To give a thrust and direction to modernisation in ordnance factories, an Expert Committee has already been constituted for preparing the detailed modernisation plan. The Expert Committee has already started its deliberations in August 1998 in line with the specified terms of reference :

- (1) to examine the current capabilities and infrastructure available with each ordnance factory, on-going replacements and renewals and new projects and recommend the detailed modernisation plan, factory-wise;
- (2) to recommend casting away of low technology and graduate to high technology or sophisticated technology or state-of-the-art technology;
- (3) to work out investments and its year-wise spread keeping in view the implementation schedule; and
- (4) to recommend plan for basic modernisation and suggest bringing in new product profile in phased manner in respect of factories presently having low technology.

Currently, 40 per cent of the machinery in the ordnance factories is over 20 years old and are to be replaced on priority. In making replacements, CNC technology is resorted to judiciously. The population of such machines now is 2.5 per cent of the total machines.

Personnel Management

48. In the ordnance factories, infrastructure expansion and large scale induction of manpower took place during the post Chinese aggression (1962) and after the conflict with Pakistan (1965 to 1971). Most of the manpower was inducted in the ordnance factories during the 1960s and they are expected to waste out in large numbers during the coming years. The Government have stated that there is sharp declining trend in manpower. The organisation has a total strength of 1,51,642 as on 1st April, 1998 inclusive of all categories. It had a strength of 1,79,046 in the year 1988. However, increasing age profile of manpower is an area of

concern. The age profile of the industrial workers in the ordnance factories is given below :

Age	Percentage of total manpower
Below 25	1%
25-35	11%
35-45	32%
45-55	37%
Above 55	19%

[Accordingly, 56% is above 45 years of age]

Industrial Relations

49. The Government have stated that ordnance factories have harmonious industrial relations over the years. There is a culture of participative management. JCM (Joint Consultative Machinery) Level IV functions in each factory under the Chairmanship of the General Manager. JCM Level III functions at Ordnance Factory Board level under the Chairmanship of Director-General of Ordnance Factories and Chairman of Ordnance Factory Board. JCM Level II functions at the Ministry of Defence level under the Chairmanship of the Defence Secretary. There is an elected works committee in each factory as per the Industrial Relations Act. Each factory has qualified and trained Labour Officers posted by the Ministry of Labour. There is an apex productivity council operating at the Ordnance Factory Board level, in which recognised Federations and Associations participate actively.

Welfare Measures

50. Since ordnance factories have been set up in the remote areas, these have been provided with basic minimum amenities and infrastructure for housing, health care facilities and schooling. Each ordnance factory has an attached township providing accommodation to various categories of employees to varying degrees of satisfaction levels. 25 Hospitals, 105 dispensaries, 17 family welfare centres, 24 departmentally run schools and 34 Central schools are there to cater to all the ordnance factories.

Safety Standards

51. Hazardous nature of work being carried out by the ordnance factories particularly in the production of ammunition and explosives calls for stringent safety standards, safety consciousness and vigilance. Safety manuals cover such aspects and elaborate safety instructions are promulgated where necessary from time to time. Safety committees have been constituted at central as well as shop level to ensure compliance. As per Factories Act/Rules, each factory has Safety Cells working round the clock to ensure safety as per "General Safety Directions" and "Standing Instructions". The use of protective gear and appliances is regularly emphasised. Regional Safety Controllerates at Kanpur, Avadi and Nagpur have been set up to enhance the efficacy of safety management. A three tier periodic safety audit set up exists as a non-going arrangement. The electrical safety administration as per Indian Electricity Rules, 1956 carried out at the factory level is audited by the four zonal electrical inspectors. The Government have stated that accidents are investigated and recommendations made by the Boards of inquiry and the audit teams, are implemented meticulously. The Government have further informed that because of the Ordnance Factory Board's safety management practices, the average rate of accidents in ordnance factories is much lower than the all India average.

CHAPTER II

COMMITTEE'S CONCLUSIONS AND RECOMMENDATIONS

52. On the basis of the information furnished and evidence tendered to the Committee by the Government on the ordnance factories in the country, the Committee have reached the following conclusions and accordingly make recommendations in the following paragraphs :

Organisation of Ordnance Factory Board

53. The Committee note that the term of Chairman and the Members other than the Member (Finance) of the Ordnance Factory Board is not fixed and sometime it can even be as short as three months. Only the tenure of the Member (Finance) who is appointed on deputation to the Board normally for a minimum period of three years is somewhat fixed.

54. The Committee note that the Army which is the biggest indentor on the ordnance factories, have not been provided with membership on the Board with duties and powers at par with the existing Members of the Board. On the other hand, they are made *ex officio* members at Special Board meetings. The Master General of Ordnances or the Director-General (Ordnance Services), Director-General (Quality Assurance), Chief Controller of Research and Development, Joint Secretary (Ordnance Factories) and Additional Financial Adviser of the Department of Defence Production and Supplies, are such *ex officio* members. The Committee recall the oral clarification the Government gave to the Committee in this regard on 13 August 1998 :

“The whole approach to the new Board was decided by a Committee in which the Army was represented. Some draft proposals, broad lines on which we could proceed were posted to them, not only to the Army but also to the Defence Research and Development Organisation, Ministry of Defence and other interests. As far as the Department of Defence Production and Supplies and the Army are concerned, practically, we sit in the same rooms and we are in daily contact and daily confabulations ...

In the enlarged Ordnance Factory Board, besides regular members, the Master General of Ordnances is a Member. The DRDO's

representative is there. Director-General of Quality Assurance is a Member and representatives from Defence Ministry (Finance) and Joint Secretary (Ordnance Factories) are there. We are having once in six months a special Board meeting, where the exchange takes place. Whatever is required from the Government, we interact with the Members. The perspective planning is also being talked about. It is called 'Special Board'. It is an extended Board."

55. The Committee further note that the five operating divisions and four staff functions currently operative for deploying each member to every operating division and every staff function need to be augmented to cope with the demands of the present day particularly to cope with modernisation needs.

56. The Committee, therefore, recommend that the full time Chairman and full time Members of the Board should have a tenure of not less than 3 years of service as Chairman/Member; appointments/promotions should be so made to the Board that this principle is complied with, without granting extensions in service. All those who could not fulfil this condition should be granted the pay which they would have received on promotion and not the powers and duties of functioning as Chairman/Member; they may even be adjusted suitably in the Ministry of Defence. This would ensure continuity of the decisions taken by the Board. The Committee strongly disapprove of the appointment of an officer as Chairman/Member when he has only three months or so to retire. The Committee consider that such a practice is against the larger public interest.

57. The Committee are not convinced by the oral clarifications of the Government in regard to assigning an active role to the representatives of the Army in the Ordnance Factory Board and recommend that two Army officers of suitable rank should be appointed as members on the Board for constantly participating in the deliberations of the Board instead of granting them the *ex officio* status at special Board meetings. The Committee feel that since a Member (Finance) is already a full time member on the Board, the Additional Financial Adviser of the Department of Defence Production and Supplies need not additionally be associated with the Board as *ex officio* member at special Board meetings. The Committee, however, favour the continued participation of the Joint Secretary (Ordnance Factories) and the Chief Controller of the Research and Development as *ex officio* members at special Board meetings.

58. Realising the need for orienting the Ordnance Factory Board to attend to urgent modernisation programmes involving the latest and hi-tech areas of Science and Technology, the Committee recommend to the Government to expand the operating Divisions and staff functions so that senior professionals, particularly in cost accounting and marketing areas, and scientists, particularly in information and digital technology as well as optics, working in Government, semi-Government and autonomous organisations in suitable rank are taken on deputation for a period of three years to serve on the Board as full time members in the newly created operating divisions/staff functions.

Removal of Production constraints

59. The Committee were informed that, apart from constraints like inadequate stores budget and inadequate skilled manpower in view of difficulties in training and re-deploying the workforce which has a high age profile, the delay in supplies from foreign countries, bunching of components at the testing ranges since these are located at a few strategic places resulting in delay in completing the final product, interruption in power supply and delay in supply of sub-systems are some of the major production constraints in the ordnance factories.

60. The Committee are disturbed over the fact that the ordnance factories are still functioning in a sub-industrial environ especially when the factories' production is considerably affected by power failures. The Committee have been informed that this problem has been partially overcome by installing diesel generating sets for essential/critical machines. Appreciating the fact that power is an essential input in production in ordnance factories, the Committee urge the Government to urgently study the pattern of power failures in the ordnance factories over the past five years and how these have affected the production and also to provide all necessary supporting devices in adequate quantities for uninterrupted power supply in contingencies of power failure.

61. The Committee also urge upon the Government to incorporate a clause in all future supply contracts for levying heavy demurrage on foreign and domestic suppliers if they fail to keep to the schedule in feeding our ordnance factories with critical material.

62. The Committee also urge upon the Government to study the feasibility of creating underground testing facilities or bunkers of suitable size for providing limited proximal testing ranges inside or near the ordnance factories to obviate the queuing of components at testing ranges located at distant places which contributes to delay in completing the products.

Capacity Utilisation

63. The Committee note the Government's admission that the production levels in the ordnance factories are far below the capacity created in these factories. The Committee recall the statement the Government had made on 13 August, 1998 before the Committee :

"If the ordnance factories in a war situation have got to work and produce at maximum capacity, they can work on three shifts. Now, most of them are working only on two shifts at this point of time. Therefore, there is that reserve. In other words, a certain amount of redundancy in capacity is automatically in-built into the ordnance factories system. Therefore, they cannot, under normal circumstances work at full capacity of hundred per cent. They have to work at a lower capacity. We have assessed the lower capacity on a two shift basis and we have calculated capacity utilisation at 73 per cent to 74 per cent."

64. However, when the Government confirmed in writing the figures of capacity utilisation in all the ordnance factories for the years 1993-94 to 1997-98, the figures showed that nearly 35% to 40% of the capacity had not been utilised on an average.

65. The Government have admitted that the low capacity utilisation is mainly due to reduced load requirements for the old type of propellants, high explosives and artillery guns etc.

66. The Committee, therefore, recommend that the Government pay serious attention to identifying all low and obsolete technologies either for the purpose of shutting down or for transferring the production line on export to needy Third World countries and re-invest the realisations in modernising the middle and high level technology

based ordnance factories for meeting sophisticated requirements of the Armed Forces.

67. The Committee also recommend that simultaneously the Government should explore all avenues for leasing out the unutilised portion of plant & machinery and manpower for a price at par with cost at least, to interested undertakings in civil sector so that capacity of the ordnance factories remains fully utilised.

Inventory holdings

68. The Committee are concerned over the increased inventory holdings in ordnance factories while there is reduction in utilisation of capacity of the ordnance factories. The average holdings in ordnance factories in terms of number of days exceeded the standard norms of 180 days to 210 days. The Committee recommend that the Government should keep the inventory holdings in ordnance factories under constant review and should take all corrective measures to bring these down to standard norms of 180 days or below.

Losses due to faulty production

69. The Committee note with concern that 0.32 per cent of the total value of production goes waste as losses due to faulty production mainly on account of internal defects in the input material and sudden change in design parameters. The Committee feel that though this is a low percentage, in terms of money value it cannot be ignored. The Committee, accordingly, recommend that in the case of losses due to faulty production ascribable to internal defects in input material, the value of losses should be debited from the payments made to the material suppliers. The Committee further feel that the design and development of the product should be undertaken with further care so that losses due to faulty production exclusively on account of sudden change in design parameters are kept to the minimum.

Pricing for the civil sector and exports

70. The Committee note that for the supplies made by the ordnance factories to the Armed Forces, the element of profit is nil. However, the

ordnance factories charge some profit from the other Departments and State Police Organisations. The profits in prices quoted for civil market or for export are little more than those quoted for the other Departments and State Police Organisations. **The Committee recommend that marketing and costing analysts should be involved in drawing up the prices of ordnance factories' products for the sectors other than the Armed Forces so that a reasonably realistic profit is made by the ordnance factories.**

Interfacing with civil industries

71. The Committee recall the figures quoted by the Secretary, Department of Defence Production and Supplies on outsourcing of orders in respect of ordnance factories before the Committee on 13 August, 1998 :

“The integration with the civil industry in terms of outsourcing of orders which we placed appears to be in the region of 48 to 50 per cent from year to year depending on what we may have to look for in any particular year. I think the optimum world average today in case of established industries with sound infrastructure base would be the outsourcing to the extent of 70%. We are still a little far of from that target for increasing our interface with civil industry.”

72. The Committee note the Government's admission that the total indents which the Ordnance Factory Board places on the civil industry is about Rs. 1800 crore. The Avadi Tank Factory outsources from private sector to 35% of the components for production of T-72 tanks. The Heavy Vehicle Factory outsources to the extent of 55 per cent from SAIL (Steel Authority of India Limited) and other Government departments. The Government further admitted that they have a mechanism for interacting with the FICCI, ASSOCHAM and CII for increased interfacing of the ordnance factories with the civil industries. The Government conceded the point of the Committee that interaction with industries should not be selectively restricted to some industrial associations but extended to specialised organisations like the All India Engineering Association etc., and there should be a combined meeting with all the industrial groups. **The Committee recommend that the interaction of the ordnance factories with civil industries should**

be frequent, continuous and on a high organisational platform for reaping the intended benefits. The Committee further recommend that the idle manpower in unutilised capacities should be identified for deployment on short term basis to civil industries for production related industrial/trade training for upgrading the skills.

73. The Committee also desire that the Government should off-load low technology items to civil sector and concentrate on production of high technology items. The Committee also feel that an intensification of the interfacing of the ordnance factories and the civil industries will not only be in the larger interest of the nation, but will also helping reinforcing each other. The civil sector plays an important role in manufacturing intermediate products, components and spare parts for the defence sector. The Committee feel that in regard to a number of sophisticated areas particularly electronics and optics, there is much in common in technologies for civil and defence use. The development of an integrated industrial sector could be greatly stimulated by encouraging and promoting this commonality which would also help in avoiding incidence of new investments by the Government on the same technologies already available in civil sector.

Exports

74. The Committee note with concern that the Government have not been able to successfully tap the markets abroad for export of ordnance factories' products. The Committee recommend to the Government to provide a special waiver of licence restrictions currently applicable to export of OFB (Ordnance Factory Board) items. Once these restrictions are removed, the export of OFB goods, the Committee feel, may grow. The Committee also recommend to the Government to gear up our High Commissions/Embassies to formulate strategies for defence exports to the respective countries and also set up a separate marketing division in the Ordnance Factory Board for boosting their sales potential in the international market. If necessary, the Government should also have a re-look at the negative list of countries maintained by the Ministry of External Affairs for pruning it to the minimum.

Modernisation

75. The Committee are aware that the Government have constituted a Committee on Modernisation to upgrade the technologies/facilities

in ordnance factories. The Committee feel that due representation to the professionals/scientists from non-defence areas particularly from premier academic and other research institutions, should be given so that the task of modernisation is undertaken perfectly and comprehensively. The Committee also feel that modernisation once undertaken should be valid for at least 15 to 20 years. The Committee further feel that it is only appropriate for the Government to place the blue-print prepared by the Modernisation Committee before them or before a select group of them so that Honourable Members some of whom are scientists themselves could offer their valuable suggestions particularly in the fast changing technological areas like optics etc.

Research and Development

76. Research and Development is the backbone for indigenisation and modernisation in any industry. The Committee note with concern the paltry sums earmarked for in-house research purposes in ordnance factories. Constant and continuous training programmes in workshops, Universities and other Institutes of higher learning is a pre-requisite for the manpower to engage themselves in research and development. Opportunities for such learning exercises should be increased and special departmental programmes should be chalked out for encouraging manpower to diversify into research. The Committee, therefore, recommend that the sums earmarked for research and development should be increased for achieving these objectives and the current ceiling on amounts spent on research and development should be removed.

Manpower planning

77. The Committee note that there is a need to regulate manpower to improve cost effectiveness, yet at the same time there is a need for qualified technical staff for meeting the challenge of the emerging and changing requirements of the Armed Forces. The Committee also note that the existing manpower has high age profile. The Committee also note that the age-old piece-work system of work assignment is still being followed in ordnance factories.

78. The Committee recommend to the Government that all surplus manpower particularly in higher age groups should be phased out. A golden hand shake scheme specifically targeting the higher age groups should be introduced. The Committee note with concern the unrest amongst workers in some ordnance factories which has a detrimental

effect on defence production. The Committee, therefore, recommend that laws should be suitably amended so that interests of the nation are harmoniously reconciled to the interests of the individual workers. It should be considered whether posts falling vacant because of retirements should at all be filled and whether the need of skilled workers could be met by transferring staff from one ordnance factory to another. Only after examining this possibility recruitment should be undertaken. A personnel policy valid for next 25 to 30 years should be immediately drawn up to meet the challenges posed by the present problems in manpower planning.

NEW DELHI;
28 January, 1999

8 Magha, 1920 (Saka)

SQN. LDR. KAMAL CHAUDHRY,
Chairman,
Standing Committee on Defence.

MINUTES OF THE FIRST SITTING OF THE SUB-COMMITTEE—III
OF THE STANDING COMMITTEE ON DEFENCE (1996-97)

The Sub Committee sat on Friday, the 20th December, 1996 from 1500 hrs. to 1530 hrs.

PRESENT

Maj. Gen. Bikram Singh — *Convenor*

MEMBERS

2. Shri Baburao Paranjpe
3. Dr. Chhatrapal Singh
4. Shri Ram Chandra Benda
5. Shri Nihal Chand
6. Prof. Ram Kapse

SECRETARIAT

Shri V.N. Gaur — *Director*

2. At the outset, the Convenor welcomed the Members of the Sub-Committee—III (Ordnance Factories) to the first sitting of the Sub-Committee.

3. The Sub-Committee considered the list of points on the subject 'Ordnance Factories' prepared by the Secretariat and circulated to the Sub-Committee. The Members suggested some additional points which it was decided to include in the list of points.

4. The Sub-Committee also decided to undertake on-the-spot study visits to Ordnance Factories located at Kanpur and Jabalpur during the period between the last week of January and first half of February, 1997 for an in-depth study and to have an on-the-spot impression and first hand information regarding the working of Ordnance Factories.

The Sub-Committee then adjourned.

MINUTES OF THE SECOND SITTING OF THE SUB-COMMITTEE—III
OF THE STANDING COMMITTEE ON DEFENCE (1996-97)

The Sub-Committee sat on Monday the 28th July, 1997 from 1500 hrs. to 1715 hrs.

PRESENT

- Maj. Gen. Bikram Singh — *Convenor*
Shri P. Namgyal — *Alternate Convenor*

MEMBERS

3. Shri Baburao Paranjpe
4. Dr. Chhatrapal Singh
5. Shri Nihal Chand
6. Prof. Ram Kapse

SECRETARIAT

1. Shri V.N. Gaur — *Director*
2. Shri K.D. Muley — *Assistant Director*

Representatives of Ministry of Defence

- Dr. A.P.J. Abdul Kalam — S.A. to R.M. & Secretary
(DR&D)

Department of Defence Production & Supplies

1. Shri T.S. Vijayaraghvan — *Secretary (DP&S)*
2. Shri Dipankar Basu — *Addl. Secretary (DP&S)*
3. Shri P.K. Sivasubramanian — *FA (DS)*
4. Shri Satish Kumar — *JS (OF)*

- | | | |
|--------------------------|---|---------------------|
| 5. Shri O.P. Rawat | — | JS (SY) |
| 6. Shri Anjali Ahluwalia | — | Addl. FA (A) |
| 7. Shri S.S. Natarajan | — | DGOF & Chairman OFB |

2. The Convenor welcomed the SA to RM and the Secretary (DP&S) and his colleagues to the sitting of the Sub-Committee and invited their attention to the provisions contained in Directions 55 and 58 of the Directions by the Speaker.

3. The Sub-Committee then took evidence of the representatives of the Ministry of Defence on various points arising out of examination of the subject 'Ordnance Factories' and also written replies furnished by the Ministry to the List of Points thereon.

The representatives of the Ministry explained and elaborated on the queries from the Members.

4. A verbatim record of the evidence was kept.

(The witnesses then withdrew)

The Sub-Committee then adjourned.

MINUTES OF THE EIGHTH SITTING OF THE STANDING
COMMITTEE ON DEFENCE (1998-99)

The Committee sat on Thursday, the 13th August, 1998 from
1100 hours to 1410 hours.

PRESENT

Sqn. Ldr. Kamal Chaudhry — *Chairman*

MEMBERS

Lok Sabha

2. Smt. Bhavnaben K. Dave
3. Shri Suresh Chandel
4. Shri Gaurishanker Chaturbhuj Bisen
5. Shri Dada Baburao Paranjpe
6. Shri Bachi Singh Rawat
7. Shri Sohanveer Singh
8. Smt. Suryakanta Patil
9. Shri Arvind Tulshiram Kamble
10. Col. Sona Ram Choudhary
11. Shri Ram Narain Meena
12. Shri A. Venkatesh Naik
13. Shri Hannan Mollah
14. Shri S. Ajayakumar
15. Smt. Reena Chaudhary
16. Shri Digvijay Singh
17. Shri Madhukar Sirpotdar
18. Shri Promothas Mukherjee

Rajya Sabha

19. Shri V.N. Gadgil
20. Shri V. Kishore Chandra S. Deo
21. Shri K.R. Malkani
22. Shri A. Vijaya Raghavan
23. Dr. Raja Ramanna
24. Shri Pritish Nandy
25. Shri Pramod Mahajan

SECRETARIAT

Shri K.D. Muley — *Assistant Director*

Representatives of Ministry of Defence**Department of Defence Production & Supplies**

1. T.S. Vijayaraghvan — Secretary (DP&S)
2. Shri Dipankar Basu — Addl. Secretary (DP&S)
3. Shri P.K. Sivasubramanian — FA (DS)
4. Shri Om Prakash — Joint Secretary (SY)
5. Shri Karnail Singh — JS (HAL)
6. Ms. Veena Maitra — JS (S)
7. Ms. Anjali Ahluwalia — Addl. FA (A)
8. Shri L.M. Mehta — JS (O)

Ordnance Factory Board

1. Shri D. Rajagopal — Chairman/OFB
2. Shri K. Sampath — Member/OFB
3. Shri R.N. Mehtani — Member/OFB
4. Shri A.K.D. Dave — Member/OFB
5. Shri S.K. Mohanty — Member/OFB

- | | | | |
|----|----------------------|---|------------|
| 6. | Shri D.K. Dutta | — | Member/OFB |
| 7. | Shri S. Vishwanathan | — | Member/OFB |
| 8. | Shri D.B. Betigeri | — | Member/OFB |
| 9. | Shri B. Banerjee | — | Member/OFB |

DRDO

- | | | | |
|----|---------------------|---|-----------|
| 1. | Shri R. Swaminathan | — | CCR&D (R) |
| 2. | Shri P.V. Deshpande | — | CCR&D (D) |

2. At the outset, the Chairman welcomed the Secretary (DP&S), Ministry of Defence and his colleagues to the sitting of the Committee and invited their attention to the provisions contained in Directions 55 and 58 of the Directions by the Speaker, Lok Sabha.

3. The representatives of the Ministry of Defence (Department of Defence Production & Supplies, OFB and DRDO) briefed the Committee on the points arising out of examination of the subject 'Ordnance Factories'. The representatives of the Ministry then explained and elaborated on the queries from the Members.

4. A verbatim record of the evidence was kept.

(The witnesses then withdrew.)

The Committee then adjourned.

MINUTES OF THE SIXTEENTH SITTING OF THE STANDING
COMMITTEE ON DEFENCE (1998-99)

The Committee sat on Monday, the 25th January, 1999, from 1130 hours to 1230 hours.

PRESENT

Sqn. Ldr. Kamal Chaudhry — *Chairman*

MEMBERS

Lok Sabha

2. Shri Suresh Chandel
3. Shri Gaurishankar Chaturbhuj Bisen
4. Shri Dada Baburao Paranjpe
5. Shri Bachi Singh Rawat
6. Shri Sohanveer Singh
7. Shri Parvathaneni Upendra
8. Shri Arvind Tulshiram Kamble
9. Col. Sona Ram Choudhary
10. Shri Ram Narain Meena
11. Shri A. Venkatesh Naik
12. Shri S. Ajayakumar
13. Smt. Reena Chaudhary
14. Shri Madhukar Sirpotdar
15. Dr. Subramanian Swamy

Rajya Sabha

16. Shri V.N. Gadgil
17. Shri Ish Dutt Yadav

18. Dr. Raja Ramanna
19. Shri Pritish Nandy
20. Shri Suresh Kalmadi

SECRETARIAT

1. Shri Harnam Singh — *Joint Secretary*
2. Shri R. Kothandaraman — *Deputy Secretary*
3. Shri K.D. Muley — *Assistant Director*

2. The Committee considered the draft Report on the subject 'Ordnance Factories'. The Chairman invited Members to offer their suggestions for incorporation in the Draft Report.

3. The Members suggested certain additions/modifications/amendments and desired that those be suitably incorporated in the Report.

4. The Committee while adopting the draft Report authorised the Chairman to finalise the Report in the light of verbal and consequential changes and for presentation of the Report to Parliament.

The Committee then adjourned.

APPENDIX I

COMPOSITION OF THE STANDING COMMITTEE ON DEFENCE (1996-97)

Shri B.K. Gadhvi — *Chairman*

Lok Sabha

2. Shri Jaswant Singh
3. Smt. Sushma Swaraj
4. Shri Banwari Lal Purohit
5. Shri Baburao Paranjpe
6. Lt. Gen. (Shri) Prakash Mani Tripathi
7. Shri Rajendra Agnihotri
8. Dr. Chhatrapal Singh
9. Dr. Vallabhbhai Kathiria
10. Shri Ram Chandra Benda
11. Shri Nihal Chand
12. Col. Sona Ram Choudhary
13. Dr. Mallikarjun
14. Shri Shivraj V. Patil
- *15. Shri Rajesh Pilot
16. Shri P. Upendra
17. Shri P. Namgyal
18. Maj. Gen. Bikram Singh
19. Smt. Nisha Amarsinh Chaudhary
20. Shri H.D. Kumaraswamy
21. Shri Hannan Mollah
22. Shri A. Sampath
23. Shri C. Narasimhan

*Ceased to be Member *w.e.f.* 8.10.96.

24. Shri Pratap Singh
25. Shri T. Nagaratnam
26. Shri Raja Ram Parasram Godse
27. Shri Nitish Kumar
28. Shri Major Singh Uboke
29. Shri Madhavrao Scindia
- *30. Shri Suresh Kalmadi
- ***31. Shri Bhanu Prakash Mirdha

Rajya Sabha

32. Shri Sushil Kumar Sambhajirao Shinde
33. Shri S. Peter Alphonse
34. Shri Lachman Singh
35. Shri Satchidananda
36. Shri Surendra Kumar Singh
37. Shri K.R. Malkani
38. Shri Satish Agarwal
39. Shri N. Thangaraj Pandian
40. Shri Adhik Shirodkar
41. Shri Suresh A. Keswani
- **42. Prof. Ram Kapse

SECRETARIAT

1. Dr. A.K. Pandey — *Additional Secretary*
2. Shri V.N. Gaur — *Director*
3. Shri K.D. Muley — *Assistant Director*

* Nominated *w.e.f.* 8.10.96.

** Nominated *w.e.f.* 5.11.96.

*** Nominated *w.e.f.* 26.2.97.

APPENDIX II

COMPOSITION OF SUB-COMMITTEE-III OF THE STANDING COMMITTEE ON DEFENCE (1996-97)

- Shri B.K. Gadhvi — *Chairman*
2. Major Gen. Bikram Singh — *Convenor*
3. Shri P. Namgyal — *Alternate Convenor*

MEMBERS

4. Shri Baburao Paranjpe
5. Dr. Chhatrapal Singh
6. Shri Ram Chandra Benda
7. Shri N. Thangaraj Pandian
8. Shri S. Peter Alphonse
9. Shri Nihal Chand
10. Smt. Nisha Amarsinh Chaudhary
11. Prof. Ram Kapse

APPENDIX III

COMPOSITION OF STANDING COMMITTEE ON DEFENCE (1997-98)

Shri B.K. Gadhvi — *Chairman*

MEMBERS

Lok Sabha

2. Shri Jaswant Singh
3. Smt. Sushma Swaraj
4. Shri Banwari Lal Purohit
5. Shri Baburao Paranjpe
6. Lt. Gen. Shri Prakash Mani Tripathi
7. Shri Rajendra Agnihotri
8. Dr. Chhatrapal Singh
9. Dr. Vallabhbbhai Kathiria
10. Shri Ram Chandra Benda
11. Shri Nihal Chand
12. Col. Sona Ram Choudhary
13. Dr. Mallikarjun
14. Shri Shivraj V. Patil
15. Shri Suresh Kalmadi
16. Shri P. Upendra
17. Shri P. Namgyal
18. Maj. Gen. Bikram Singh
19. Smt. Nisha Amarsinh Chaudhary
20. Shri H.D. Kumaraswamy
21. Shri Hannan Mollah
22. Shri A. Sampath
23. Shri C. Narasimhan

24. Shri Pratap Singh
25. Shri T. Nagaratnam
26. Shri Raja Ram Parasram Godse
27. Shri Nitish Kumar
28. Shri Major Singh Uboke
29. Shri Madhavrao Scindia
30. Shri Bhanu Prakash Mirdha

Rajya Sabha

31. Shri Sushil Kumar Sambhajirao Shinde
- *32. Shri S. Peter Alphonse
33. Shri Lachhman Singh
34. Shri Satchidananda
35. Shri Surendra Kumar Singh
36. Shri K.R. Malkani
- **37. Shri Satish Agarwal
38. Shri N. Thangaraj Pandian
39. Shri Adhik Shirodkar
40. Shri Suresh A. Keswani
41. Prof. Ram Kapse

SECRETARIAT

1. Dr. A.K. Pandey — *Additional Secretary*
2. Shri V.N. Gaur — *Director*
3. Shri K.D. Muley — *Assistant Director*

*Ceased to be Member *w.e.f.* 9.9.97.

** Expired on 10.9.97.

APPENDIX IV

COMPOSITION OF SUB-COMMITTEE-III OF THE STANDING COMMITTEE ON DEFENCE (1997-98)

- Shri B.K. Gadhvi — *Chairman*
2. Major Gen. Bikram Singh — *Convenor*
3. Shri P. Namgyal — *Alternate Convenor*

MEMBERS

4. Shri Baburao Paranjpe
5. Dr. Chhatrapal Singh
6. Shri Ram Chandra Benda
7. Shri N. Thangaraj Pandian
8. Shri S. Peter Alphonse
9. Shri Nihal Chand
10. Smt. Nisha Amarsinh Chaudhary
11. Prof. Ram Kapse