

TWENTY-SECOND REPORT

COMMITTEE ON PUBLIC UNDERTAKINGS (1986-87)

(EIGHTH LOK SABHA)

BHARAT HEAVY PLATE AND VESSELS LIMITED

(MINISTRY OF INDUSTRY—DEPARTMENT OF PUBLIC ENTERPRISES)



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**LOK SABHA SECRETARIAT
NEW DELHI**

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~~CORRIGENDA TO 22ND REPORT OF COMMITTEE ON
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PLATE & VESSELS LIMITED~~

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COMMITTEE ON PUBLIC UNDERTAKINGS

(1986-87)

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*Elected w.e.f. 22-8-1986 in the vacancy caused by appointment of Miss Saroj Khaparde as Minister of State.

**STUDY GROUP IV ON BHARAT HEAVY PLATE & VESSELS LTD.,
NATIONAL BUILDING CONSTRUCTION CORPORATION LTD.
AND OIL INDIA LTD.**

1. Prof. C. Lakshmana—*Convener*
2. Shri V. S. Vijayaraghavan—*Alternate Convener*
3. Shri Satyagopal Misra
4. Shri K. R. Natarajan

INTRODUCTION

1. the Chairman, Committee on Public Undertakings having been authorised by the Committee to present the Report on their behalf, present the Twenty-Second Report on Bharat Heavy Plate & Vessels Limited.

2. The Committee's examination of the working of the Company was mainly based on the Report of the Comptroller and Auditor General of India, 1984, Union Government (Commercial), Part IV.

3. The Committee took evidence of the representatives of Bharat Heavy Plate & Vessels Ltd. on 4 and 5 September, 1986 and also of the representatives of the Ministry of Industry (Department of Public Enterprises) on 25 and 26 November, 1986.

4. The Committee considered and adopted the Report at their sitting held on 3 April, 1987.

5. The Committee wish to express their thanks to the Ministry of Industry (Department of Public Enterprises) and Bharat Heavy Plate & Vessels Ltd. for placing before them the material and information they wanted in connection with examination of the Company. They also wish to thank in particular the representatives of the Department of Public Enterprises and the Undertaking who appeared for evidence and assisted the Committee by placing their considered views before the Committee.

6. The Committee also place on record their appreciation of the assistance rendered by the Comptroller and Auditor General of India.

K. RAMAMURTHY

Chairman,

Committee on Public Undertakings.

NEW DELHI;

April 3, 1987

Chaitra 13, 1909 (S)

CHAPTER I

BHARAT HEAVY PLATE & VESSELS LTD.

General Background

BHVP was incorporated in the year 1966 primarily to manufacture custom-built capital equipment required by process industries like Fertilizers, Refineries, Petro-chemicals and Chemicals. The commercial production commenced during the year 1971-72.

Order Book Position

1.2 A major handicap in the development of Fertiliser, Petroleum and allied industries had been the need to import much of the capital equipment. The Bharat Heavy Plate and Vessels Ltd. was set up to meet this need and the types of equipment included in BHPV's plant product-mix, account for nearly one-third the cost of equipment in industries like Fertiliser and Petroleum. Prior to the establishment of BHPV some engineering units in the Private Sector used to manufacture equipment for various other process industries such as Sugar, Cement Paper etc. However, BHPV was established with the sole objective to manufacture custom built process plant and equipment for fertiliser, petro-chemical and refineries for which sustained demand was anticipated.

1.3 In 1966, the annual gap between demand and supply of Plate and Vessels type equipment was estimated at 72000 tonnes and keeping this in view BHPV was established with an annual capacity of 23,210 tonnes per annum. This capacity of 23,210 tonnes was expected to meet only 1/3rd of the estimated gap. However, right from the inception the Order Book Position of BHPV has been critical. During the first three years, after the commencement of the production in BHPV i.e. from the 1971-72 to 1973-74, the order inflow was considered to be satisfactory but the order inflow during 1974-75 to 1976-77 was considerably low as detailed hereunder :—

<i>Year</i>	<i>Orders received (Rs. lakhs)</i>
1971-72	1433
1972-73	2537
1973-74	2825
1974-75	908
1975-76	1484
1976-77	1788

1.4 Explaining the reasons for the low Order Book Position of the Company, the Ministry have stated in a note :

"Because of the Oil Crisis in the year 1974 various anticipated projects in the process field, particularly in the fertilizer and petrochemical sectors were deferred.

More and more fabrication facilities were also established within the country especially from small sector which could effectively compete for low technology items.

While the Company had an inflow of orders to the extent of Rs. 68 crores during the year 1971-72 to 1973-74, it could manufacture and deliver the equipment valuing Rs. 16.5 crores only. This low production was primarily due to longer gestation period involved in the development of manufacturing facilities and skills for sophisticated equipment. Consequent on the heavy backlog, even though BHPV's prices were competitive, shorter deliveries could not be committed which the customers were insisting. This partly resulted in the low Order Book Position in the ensuing years. However, the Company executed orders booked from 1971-72 to 1973-74 during the years 1974-75 and 1975-76.

From the year 1978-79 onwards and particularly from the year 1980-81, the Order Book Position has considerably improved as detailed hereunder :—

	<i>Rs. lakhs</i>
1980-81	3830
1981-82	5386
1982-83	16915
1983-84	6355
1984-85	5727
1985-86	7923
1986-87 (Upto end July 1986)	11152

1.5 During evidence the Committee pointed out that at the time of setting up of BHPV, it had been estimated that only 1/3rd of the total requirements of plate and vessels type equipment would be met by this Company but this demand did not materialise and the production in the Company was much below the targets. In this context, the Committee desired to know whether there had been over estimation of the demand initially in 1966 for this type of equipment and if not, why the Company could not get enough orders. The CMD stated in reply:—

“At that point of time the Fertilizer Plants were estimated at the capacity of 450 tonnes per day plants. And based on that, only BHPV was supposed to do that job which is roughly 1/3rd of the total fertiliser plants. Even before the BHPV came into operation they changed the plants size from 450 tonnes to 950 tonnes capacity.”

1.6 Since BHPV was primarily conceived to cater to the requirements of the Fertilizer plants in the country, the Committee enquired why the size of the fertilizer plants was changed from 450 tonnes to 950 tonnes

without any interaction with BHPV. The Ministry have in a note stated as under :—

“The shift to higher capacity plants of 950 tonnes from 450 T by the Project authorities is mainly on account of changes in the technology and also due to the change in the feed stock policy. The project authorities appoint the Process Consultants and based on their recommendations, the plant sizes were being finalised.”

1.7 When asked as to what type of coordination if any has been maintained by the Ministry with the Administrative Ministry dealing with fertiliser plants, it was stated :—

“An analysis of the order inflow at BHPV indicate that it could secure considerable portion of the orders from the expansion projects of Oil Refineries, i.e. Hindustan Petroleum Corporation Ltd., Madras Refineries Ltd., Cochin Refineries Ltd., etc. However, it did not get any major orders from the West-Coast gas based fertilizers plants, which were mostly lost to foreign competitors. BHPV had represented to the Ministry on several occasions regarding its low order book position from the Fertilizer Sector and desired that certain equipment may be earmarked for fabrication indigenously. These aspects were also brought to the notice of the Ministry of Fertilizers and Chemicals. However, the project authorities made their final decisions, keeping in view various financial aids being received for these projects, the overall deliveries specified etc. In this context, it is to be mentioned that due to non-availability of certain types of steel materials within our country, indigenous fabricators have to depend on imported material. The foreign competitors had an advantage due to ready availability of material within their own country and consequently could effectively compete both in price and delivery.”

1.8 It has been stated that considering the limited demand potential from the three core sectors i.e. Fertilizer, Petrochemicals and Refineries, BHPV approached the Government for extending its operations to other process industries. Accordingly Government endorsed Company's Industrial Licence to cover other industries like Steel, Minerals and Metals, Atomic Energy, Power, Paper and Pulp, Pharmaceuticals and Dairy. Apart from the above, BHPV has also taken up a number of diversification schemes from time to time which call for no further investments or only marginal investments towards balancing facilities. Some of the important new products taken by the Company include : (a) Cryogenics [Air & Gas Separation Plants, Nitrogen Wash Units, Cryogenic Storage System(s)], (b) Deaerators, (c) Industrial Steam Generators (Boilers), (d) Cryobio-

logical containers, (e) Titanium Anodes etc. It has been stated that by taking up these new lines, the order book position of the Company gradually improved.

1.9 Referring to the need for diversification into new areas such as cryogenics and steam boilers, the CMD stated during evidence :

"Keeping in line with the fast changing technological advancements in the process industries, the Company had to take up new lines for possible optimum utilisation of the facilities provided."

1.10 The Committee enquired whether the technological changes and changes in demand pattern were kept fully in view while planning diversification of activities by the Company. In a note, the Ministry have stated :

"Each Company tries its best to keep in view the change in demand pattern in future, but some of the technological changes and customer preferences and consequent changes in demand are difficult to foresee. Further a supplier has to depend upon the customer. BHPV can neither decide nor dictate regarding the size of the refinery or the fertilizer plant which should be set up by its customers. At a given point of time, the customer wants a smaller size of the refinery or fertiliser plant, but in view of technological changes abroad, it is decided that plants of a much bigger size would be set up. At such a time BHPV has no choice but to manufacture the equipment as per the new requirement of the client; otherwise the client will import the equipment."

The Ministry have further stated :

"An odd situation can be created by another factor. A big customer like ONGC attracts many suppliers, who legitimately hope to have good business and for that make some investment. Only about a year back, it was expected that ONGC would require a fairly good number of off-shore platforms for which investment facilities were created in two public sector undertakings. Facilities for Tubulars for these platforms were created in some other public and private sector undertakings. Suddenly, the programme of ONGC has been substantially curtailed as a result of which a number of their perspective suppliers are faced with infructuous investment. The point is that there are limitations to perspective planning. The customers need change with changes in technology, overall resource availability in national plans, comparative prices of different options in the international market and other factors."

1.11 The Committee desired to know what efforts were made by the Ministry to improve the order book position of the Company and whether the Ministry established any interaction with other Ministries so that the Company could secure enough orders from other public sector undertakings. In reply, the Ministry have stated :

“The order book of the Company has considerably improved during the last five years. However, it is observed that while the Company is able to secure good orders from the cryogenic fields, the quantum of orders for the process plants is considered relatively low. In order to overcome such a situation, the Company has taken up diversification schemes, the important of them being the industrial Steam Generators (Boilers). The Company is also proposing to enter into new fields like Atomic Energy, Defence etc. Recently, BHVP has received a major order valuing about Rs. 30 crores from ISRO for construction of a Space Simulation Chamber which is being manufactured for the first time in the country. The Ministry renders assistance to BHPV by taking up matters with other Ministries for placement of orders.”

1.12 The Order Book Position of the Company is indicated in the statement below :—

Year	(Rupees in crores)				Out- standing Order Book Position
	INFLOW OF ORDERS				
	Process Plants	Cryo	Boilers	Total	
1980-81	25.06	10.29	2.95	38.30	47.31
1981-82	34.50	16.61	2.75	53.86	69.00
1982-83	39.77	113.56	15.82	169.15	198.56
1983-84	56.95	6.09	0.51	63.55	212.00
1984-85	35.14	12.75	9.38	57.27	197.47
1985-86	33.44	26.69	19.10	79.23	184.29
Upto September 1986	19.47	96.96	0.61	117.14	271.21

It is seen from the above statement that while the outstanding order book position as at the end of March, 1986 was Rs. 184 crores, orders to the extent of Rs. 117 crores have been received during the first 6 months of the year 1986-87. It is also observed that in 1982-83 the Company received orders worth Rs. 170.25 crores, in 1983-84 & 1984-85, the corresponding figures were Rs. 63.55 crores Rs. 57.27 crores respectively. In this context, the undertaking has stated :

“There has been a considerable improvement in the inflow of orders from the year 1980-81 onwards. However, a critical

analysis of the inflow of orders indicate that while there has been a marked improvement in the inflow of orders for the cryogenic equipment (which the Company has taken up as a diversification scheme), the inflow orders for the process plants, for which the Company was primarily established, is considered quite low. In the cryogenic field, BHPV has more or less achieved a leading position by securing almost all the tonnage oxygen plants and a major portion of orders for the medium and small size plants. It is observed that in the case of foreign vendors, who have the obvious advantage of ready availability of raw materials, consequent on which they are able to offer better price and delivery terms."

1.13 The Committee were informed that in the case of process plants, BHVP had to compete with a number of indigenous competitors. Apart from that there was competition from foreign suppliers. When asked about the cost-structure of these competitors, the CMD stated in evidence :—

"For the processing plant equipment, the competition is very severe from the Japanese. In this respect, we have a very big disadvantage because of their prices. We have to buy the materials either from Japan or Germany. At the same time they are also bidding and competing. In our view, they, more or less, control our costs on the equipment. We have to be very much guarded against them."

1.14 The Committee enquired whether the foreign competitors were quoting lower prices because of this lower costs or they were doing it artificially to get orders. The witness stated :

"We have analysed in one or two cases how they could quote such a low price. We found that our material costs, the landed costs of our materials, were more than the total finished cost that has been quoted by the party outside. Between the supplier of the raw material from Japan and the Japanese party quoting for the equipment, there could be a possibility of coordination in such a way that the indigenous manufacturers could not really come into the market. That could happen. We have analysed in one or two cases and we have found that it is difficult."

1.15 As to the steps taken to reduce the costs in BHPV, the CMD stated during evidence :—

"The first thing was to reduce the cycle time. Secondly, since the large majority of cost is going to be materials, we have to

economise on that. Thirdly, we have to optimize the design so that the material cost can be reduced. Fourthly, we have to bring about improvements in the manufacturing process by deploying the latest available technology to improve the processes and thereby reduce the cycle time. We have specifically instituted a study on the value management. We have almost 25 groups of people working in different areas, each setting their own objectives to achieve their goal, so that the overall cost of the equipment comes down."

1.16 Referring to the Satyapal Committee which had made some recommendations about the working of BHPV in 1984, the CMD stated :

"We are already doing some of the things which they had recommended. However, some further steps were taken to streamline our operations. One was drawing up of PERT/CPM network charts for all the major projects; two, weekly review meetings to be held by production task force groups; then, various inputs to be reviewed, detailed activity schedules, operation-wise; critical slippages to be reviewed every-week and corrective actions to be taken. Then, weekly schedules for feeder shops to be drawn and monitored by shop managers; manufacturing schedules of sub-assemblies and assemblies to be monitored weekly by shop managers etc., shifting work to lightly loaded work centres from the heavy loaded work centres; productivity cell to identify the constraints and initiates corrective action plans; then, computerised production planning in selective areas; a separate cash collection cell has been constituted resulting in improvement in cash collection considerably. For some of the important projects independent project managers/monitors have been identified, who would be held responsible for coordinating all the activities. Then, Product division/concept has been introduced integrating the functions right from the design to erection and commissioning and after sales service.

1.17 In a performance review meeting taken by the Secretary, Department of Public Enterprises on 2-5-1986, the CMD explained that while the order book position in the cryogenic field was comfortable, the order book in respect of process plants continues to be critical and BHPV could secure only very few orders in respect of the new fertilizer plants being set up in the country. He mentioned that orders are lost to foreign competitors due to zero import duty and very short delivery periods being insisted by the customers which cannot be adhered to by the indigenous parties mainly because of the longer procurement lead time. As a result of the low order book position for the conventional equipment, BHPV has

taken up related manufacturing activities, in association with other parties as Joint Ventures. Consequently orders have been obtained for supply of 2 waste heat boilers to IPCL in association with G.E., USA, supply of bonzol plant to VSP in association with Otto Simen Carves, UK etc. are examples of such orders on hand."

1.18 The Committee desired to know the value of work done by the Company for the private industry during the last five years. In a note it has been stated :

"The value of the work done by the Company for the Private Industry for the last five years is given below :—

Year	(Rs. in lakhs)
1981-82	745.39
1982-83	801.73
1983-84	1081.65
1984-85	648.08
1985-86	355.25."

1.19 Asked as to what are the strategies the Company proposes to adopt to secure as many orders as possible from indigenous industry, the Company stated :

"The following strategic actions are being taken to improve the order book position :

- (i) A Business Development Division with separate marketing group has been set up during the year 1982-83 to closely inter-act with potential customers and identify new projects and schemes to supplement our existing product profile. Further, the Marketing Group has been assigned to devote its efforts to technological forecasting, environmental scanning, liaison with the policy making and regulating agencies in the Government, Customers, Process/Project Consultants etc. When once a project is identified, thrust is given for presentation of the capabilities of BHPV (sometimes with the assistance of our collaborators/world renowned engineering firms in relevant field) for obtaining qualification of the customers to place order either on nomination basis or to submit tenders alongwith other limited qualified tenderers. Under this approach, BHPV could receive orders from various refineries etc., on nomination basis.
- (ii) To increase the overall turnover and to avoid competition from small fabricators, emphasis is now being made to take up sub-system sale instead of individual equipment. The undertaking of such sub-systems involve

execution on turnkey basis, including considerable integration of bought out components with the equipment being supplied by BHPV.

- (iii) Some of the major orders are being accepted on a case to case basis with the technical know-how of some of the world renowned parties. For example, Evaporator Units of NALCO and Large size Simulation Chamber for ISRO, Bangalore."

In another note the Company has stated :

"While BHPV is in a position to secure orders for almost all tonnage oxygen plants, even against international competition, it is able to secure a major portion of the orders for medium and smaller size air and gas separation plants, thus maintaining a share of about 70% to 80% of the total Cryogenic market. However, in the process plant field and in particular from the fertilizer sector, competition is quite severe, from foreign firms who are able to offer better delivery and price terms compared to any indigenous parties. In order to minimise competition from the foreign competitors, we have approached the Government to formulate separate guidelines for earmarking equipment to indigenous parties who have acquired capabilities for the manufacture of certain equipment."

1.20 In one of the performance review meetings, the CMD brought to the notice of the Government the various constraints faced by BHPV in regard to procurement of raw material particularly imports through canalising agencies. During the course of evidence of the Ministry of Industry, the Committee asked how the delay in getting import licence for the Undertaking could be cut short. The Secretary, Ministry of Industry stated :—

"This is no doubt, a problem area because there are certain set procedures for imports and this company, like any other company be it public or private, has to go through that process. In the case of this company the quantity of stainless steel or boiler quality steel or tubes, is not very large. It is not as if they require steel in bulk quantities which could be imported easily by the canalising agencies. There are canalising agencies for importing stainless steel. The process involves getting clearance from the indigenous manufacturers and that itself takes time. After getting clearance indigenously, the canalising agencies pool up the requirements and place orders and then imports come in. It is not as if the Company can take advance action and import the material. In the case of BHPV these are genuine

difficulties and there were delays in the past. We are in touch with the Directorate General of Technical Development in this context, because they coordinate a lot of work connected with this and we are trying to see a way to get the clearance faster in the case of BHPV. Now you may say as to why we cannot decanalise the whole thing. I am told that in the past this issue was examined in detail and it was not agreed that there should be decanalisation. There are certain advantages in getting imports through canalising agencies like MMTC and STC. We agree that there are certain difficulties. But it is not possible that there should be some exception for BHPV alone. But as I said, we are in touch with the DGTD and we are trying to improve things."

The witness further added :

".....The efforts have been made in the past in regard to this. But the point remains that this needs to be tackled on priority and we will try to see how best we can tackle it and what is the time involved in this. There are some inherent problems in that and that is, if an expenditure is made for these public undertakings, then the enterprises of the private sector will like to have the same kind of treatment."

1.21 The Committee pointed out that Public Sector must get priority over the private sector in import matters. Since the Company has to wait for a longer period to get clearance certificate from the indigenous suppliers like SAIL, the suppliers could review their stock position once or twice a year and render suitable certificate to Commerce Ministry/Industry Ministry, and in that way waiting period for getting clearance certificate from indigenous supplier can be cut short. Replying to this suggestion of the Committee, the witness said :

"We have to see what best is possible within this procedure so that we can avoid the delays because these are the costly delays."

The witness further said :

"What is required finally is quick clearance through the indigenous angle, and quick placement of orders, on foreign suppliers. On this, we can suggest decanalization. We can take this matter up with the Ministries concerned. These are small equipments. BHPV itself can place orders on foreign suppliers. We will take up this matter once again with the concerned Ministries, so that the possibility of decanalization and making the process somewhat quicker in the case of indigenous and foreign suppliers, can be taken up with the Commerce Ministry....SAIL imports this quality of steel; MMTC imports the stainless quality of steel. If we exclude BHPV from this purview, the process could be made somewhat faster. We will take this exer-

cise up with the two Ministries concerned. If it is agreed to, we should be able to get results. If you agree, we will proceed on these lines.”

Exports

1.22 One of the objectives of BHPV is to develop export markets with a view to earning foreign exchange. As to the efforts made in this direction, the Company has, in a note, stated :

“The Commercial Division of BHPV has been making earnest efforts since inception to promote physical exports in the West Asia and South East Asian Countries by keeping in touch with some of the leading engineering consultancy organisations. Some of our Senior Commercial Executives were deputed to Middle East and West Asian countries, sometime along with the Trade Delegations. Consequent on such efforts, BHPV could secure an order for supply of 1 No. of 140 NM 3/hr and 1 No. 58 NM 3/hr Oxygen Plants to IRAN valuing Rs. 43 lakhs. However, no further orders have been received for hardware exports so far.”

It has been further stated :

“BHPV could secure an order for export of 2 Nos. of Air Separation Plants, to Iran at a value of Rs. 40 lakhs during the year 1977-78. Further, a major contract from Messrs ENCC of Algeria was secured for software services. Foreign exchange earned during the year 81-82 to 85-86 amounted to Rs. 685 lakhs approximately. Apart from the above, BHPV could receive OECF and IDA orders valuing Rs. 2038 crores which are considered as deemed exports.”

1.23 Asked why the Company could not get orders for direct export of normal equipment and for supply of air and gas separation plants against Global Tenders for Indian Projects under IDA Credit, the Company stated :—

“... constant efforts are being made to secure export orders. In this context, it is to be stated that BHPV is constrained to compete with foreign firms both in respect of delivery as well as price due to the following :

- (a) Dependence on imported raw material, due to non-availability of the same within the Country, involving longer lead time and higher price compared to the foreign vendors.
- (b) Foreign consultants' preference, and
- (c) International credit tie-ups for setting of the projects.

As regards Global Tenders for Indian Projects under IDA/OECF credit, the Company has been by and large successful in obtaining substantial orders for Cryogenic plant/equipments.”

1.24 As to the efforts made by the Company to promote exports, the Company has stated :

“the following export efforts are being made by this Division :

- (a) The Sales Literature of BHPV with complete details of the Organisation, equipment supplied, customers served etc., are sent to the various Embassies in other countries.
- (b) Necessary export information is being collected and suitable offers are being submitted wherever necessary. Keeping in view the potential market in Far East, efforts are being made in this direction.
- (c) Contacts are being established with reputed Sales agencies in various countries for obtaining pre-qualification which will enable submission of offers.
- (d) Efforts are also being made for reaching an Understanding with some of the foreign firms for submission of joint bids.”

1.25 Bharat Heavy Plate & Vessels Ltd. incorporated in June, 1966, was established with the sole objective to manufacture custom built process plant and equipment for use in the fertilizer, petroleum and allied industries for which sustained demand was anticipated. At that time the annual gap between demand and supply of plate and vessels type equipment has been estimated at 72000 tonnes and keeping this in view. BHPV was established with an annual capacity of 23,210 tonnes. However, right from the inception the order book position of BHPV has been critical and the installed capacity of 23210 tonnes, which was expected to meet only one third of the estimated gap, remained greatly underutilised. Obviously the projections of demand and requirements of process plant and equipment were not based on any scientific study but were more in the nature of perfunctory guess work. The Committee deprecate formulation of such faulty projections on the basis of which investment decisions have been taken.

1.26 The Committee have been informed that the capacity planned in BHPV was expected to take care of roughly one third of the requirements of the fertilizer plants in the Country. But even before BHPV started its operations, the sizes of the fertilizer plants were changed from 450 tonnes per day plants to 950 tonnes per day plants without any interaction with BHPV. This change in the demand pattern created a technological gap and no wonder BHPV did not get any major orders from fertilizer plants, which were mostly lost to foreign competitors. It has been stated that BHPV had represented to the Ministry on several occasions regarding its low order book position from fertilizer sector and desired that certain equipments may be earmarked for fabrication indigenously. No tangible action seems to have been taken in this regard although the Ministry of Industry have informed that the matter was brought to the notice of the Ministry of Fertilizers and Chemicals.

1.27 The Committee are surprised at the argument advanced by the Ministry of Industry that "BHPV can neither decide nor dictate regarding the size of the refinery or the fertilizer plant which should be set up by its customers". It has to be pointed out that BHPV had been established primarily to cater to the requirements of the process plants of fertiliser & petroleum industries and thus the technologies acquired and the skills developed were related to the demand projections of the user Ministries. Therefore any switch over from one technology to another in the user organisation was bound to have repercussions on the operations of BHPV. This underscores the need for perspective planning and a meaningful co-ordination between the Ministry of Industry and the user Departments. On the basis of the reviews of the working of some public undertakings like BHPV the Committee are constrained to conclude that capacities have been created at huge cost for meeting demand projections which were found highly inflated and unrealistic. Furthermore after the setting up of such undertakings, the administrative ministries concerned have not been able to provide the necessary protection needed to enable these undertakings to establish themselves fully and discharge the role assigned to them.

1.28 The Committee feel concerned to note that in view of the limited demand potential from the three core sectors i.e. fertilizer, petro-chemicals and refineries, BHPV was forced to take up new lines like cryogenics and steam boilers for possible optimum utilisation of the facilities created. With the various diversification schemes undertaken from time to time the Company has been able to improve its order book position to some extent but even then the capacity utilisation remains far below the rated capacity. It has been stated that the order book position in respect of the process plants continues to be critical as BHPV could secure only very few orders in respect of the new fertiliser plants being set up in the country. Orders are lost to foreign competitors as they are able to offer better delivery and price terms compared to indigenous manufacturers, who have necessarily to import their raw materials like steel from foreign countries. This involves longer procurement lead time and hence longer delivery schedules. In order to minimise competition from the foreign competitors, BHPV has approached the Government to formulate separate guidelines for earmarking some equipments for indigenous parties who have acquired necessary capabilities in their respective fields. This undoubtedly seems a workable proposition and the Committee desire that the Ministry of Industry should take it up urgently and if necessary, at the highest level. The Committee have no doubt that the acceptance of such a scheme will surely go a long way in better utilisation of the existing capacities set up with huge costs and consequential savings in precious foreign exchange.

1.29 The Committee find that as the fertiliser industry is a priority sector, global tendering is permitted. However, because of the stiff competition from foreign parties which are able to quote substantially low

rates as well as better terms of delivery on account of ready availability of raw materials within their country, the inflow of orders to BHPV for the process equipment for fertilizers is adversely affected. In Committee's opinion the least that can be done in such cases is that the benefits of deemed exports should be extended to BHPV wherever global tenders are invited. The Committee would like the Ministry of Industry to take up the matter with the appropriate authorities.

1.30 Yet another constraint faced by BHPV is in regard to procurement of raw material particularly imports of steel etc. through canalising agencies. The procedures involved in getting clearance for imports from indigenous angle are time consuming and the imports through the canalising agencies further adds to the problems of BHPV. The Secretary, Ministry of Industry was appreciative of the difficulties encountered by BHPV in this regard and had assured the Committee that the matter would be taken up with the appropriate Ministries. The Committee would like to be apprised of the outcome of these efforts within six months of the presentation of this Report.

1.31 One of the objectives of BHPV is to develop export markets with a view to earning foreign exchange. Precious little has been done in this field. Since inception, BHPV has been able to secure only two export orders and no further orders have been received for hardware exports so far. Here again the Committee find that problem is the stiff competition from the foreign firms. The Committee desire that more concerted efforts should be put in by BHPV to enter this area so that a break-through is achieved at the earliest.

CHAPTER II

CAPACITY UTILISATION

Under the agreement, reached between the Government of India and Messrs Skodaexport of Czechoslovakia, in Nov. 1965, for the establishment of Plate and Vessels Project in India, Messrs Skoda Export recommended the plant layout, buildings, production equipment needed, requirement of utilities, etc. The report of Skodaexport envisaged a capacity of 23,210 tonnes for various types of equipment with specific product mix involving manufacture of Columns, Storage Vessels, Heat Exchangers, Furnaces, Pressed parts (Dished ends). Piping etc.

2.2 According to the design documentation given by TECHNO EXPORT, the production totalling 23,210 tonnes annually included 4500 tonnes of piping and 3,000 tonnes of dished ends. The Company found that there was not much demand for prefabricated piping and dished ends and so reduced their production to 1000 tonnes per annum. The management also noticed that the product-mix was being tilted year after year towards more high value and sophisticated items than were conceived in the design documentation given by the collaborators. As adequate orders were not forthcoming the Company revised the annual capacity of the factory to 18,000 tonnes in April, 1975. The following table compares the revised product mix with the capacities as originally envisaged :

Product	(In tonnes)	
	As per design documen- tation	As re- vised
1	2	3
Columns	5,100	7,000
Vessels :		
Non-pressure vessels	3,600	200
Cryogenics	..	200
Storage vessels	1,100	700
Tonne containers	..	500
Vessels with stirrers	210	200
Vessels above 75mm thickness	..	500
Horton spheres	700	700
Other Vessels	..	1,500
Furnaces	1,000	300
Heat exchangers	2,750	3,000

(1)	(2)	(3)
Piping	4,500	500
Spares	250	500
Structures	1,000	600
Pressed parts (dished ends)	3,000	500
Multilayer vessels	..	500
Air and Gas separation plants (cold box)	..	600
Total	23,210	18,000

2.3 According to the Audit Report, the Company having originally installed plant and machinery (estimated cost Rs. 1061 lakhs) for an annual production of 23,210 tonnes created additional facilities in 1976 at a cost of Rs. 20.70 lakhs for the revised product-mix which was estimated to increase the production from 9,700 tonnes in 1976-77 to 18,000 tonnes in 1980-81. The gross value of plant and machinery installed to end of March, 1986 was Rs. 2311.69 lakhs (provisional).

2.4 Justifying the addition of more facilities in the factory even after derating the annual capacity from 23,210 tonnes to 18,000 tonnes, the Undertaking has stated :—

“During the year 1976, a capital expenditure of Rs. 20.70 lakhs was incurred towards procurement of certain erection and testing equipment. BHPV has gradually strengthened its erection and commissioning facilities for enabling to take up projects on a turn-key basis. Similarly, more sophisticated testing facilities are required for improving the quality front which is considered vital for any fabrication unit. The addition of such facilities would facilitate taking up more sophisticated jobs than directly reflecting the improvement in the capacity utilisation.”

2.5 As to the rationale for refixing capacities for various products by the Company in April, 1975, it has been stated that,

“In April 1975, BHPV made an exercise regarding its licensed capacity vis-a-vis the actual tonnage being manufactured. Based on the changes in the product-mix, it assessed its achievable capacity as 18,000 tonnes. This includes a number of new products like Multilayer Vessels, Air & Gas Separation Plants etc. which were not envisaged originally in the project report of 1966.”

2.6 In reply to a question whether approval of the Government was obtained for reducing the annual capacity, it has been stated :—

“Engineering industries in general and BHPV in particular have been facing problems in the expression of their physical production

tonnes due to constant changes in the product-mix. However, the Ministry had not accorded any approval regarding the fixing or revising the achievable capacity of 18,000 tonnes."

2.7 According to the Audit Report, the targets of production laid down each year from 1976-77 to 1983-84 were less than half the original capacity of 23,210 tonnes and were far below even the rated capacity of 18,000 tonnes. The actual utilisation of capacity (based on the reduced capacity of 18,000 tonnes) ranged from 33.7% (1979-80) to 60.5% (1977-78) during these years. Except in 1977-78, it was below 50% in all these years.

2.8 The original project report indicated a certain product profile and also specified the annual capacity in terms of each product by tonnage. As the product profile tilted towards greater sophistication and as the Company diversified into new fields, it was felt that while adding up the total production during the year the tonnage of more sophisticated products should be multiplied by an 'intensity factor' as they required higher inputs of resources per tonne. Thus the production figures in terms of equivalent production were being declared from 1980-81 onwards. This method of working out the production figures by applying the intensity figure has not been approved by the Board of Directors/Government. Explaining the reasons why this method of working out the production figures had not been approved so far, the Company has in a note stated as under :—

"The original Project Report envisaged a capacity of 23,210 Tonnes involving Carbon Steel/Normal Stainless Steel material. However, by taking up products like Cryogenic Storage Vessels, Multilayer Vessels etc., which need higher technological inputs, the comparison of capacity in terms of physical tonnage was found to be in appropriate. Consequently, in the year 1978-79, the concept of expressing physical production in terms of equivalent tonnage was evolved by application of an Intensity Factor to actual tonnage obtained.

Considering the limitations in the expression of physical production in terms of tonnes and to assess the capacity in more realistic norms, a Study Group was constituted with the representatives from Technology, Industrial Engineering and Finance to make a detailed study to identify realistic performance norms, along with the comparative norms being followed by other Engineering Companies engaged in similar field. This Group visited various Engineering Units like BHEL, HMT, BEL, BEML, L&T, Hyderabad Allwyn, Godrej etc. It was ascertained that similar problem of frequent changes in the product mix which affect capacity utilisation is being faced by these Engineering units also.

After their preliminary study, the Group observed that with multiplicity of the product mix and the constantly changing demand, capacity determination and the assessment of capacity utilisation for the unit as a whole poses problems, and this is in fact the characteristic feature of multi-product engineering enterprise. The imbalance in the working load arising out of changing product mix also affects the utilisation factor. However, it felt that the best way for expression of production in physical terms is the standard hours achieved instead of the present system of expressing the production in terms of metric tonnes. This Group further felt that the machine utilisation may be broadly classified into two categories viz. (a) Utilisation of Special Purpose Machines and (b) General Purpose Machines. To have a further control, it suggested a breakdown of the above two categories into (a) high cost items (Machines costing Rs. 5 lakhs and above each) (b) Low cost items (Machines costing less than Rs. 5 lakhs each).

A final report by this Group suggesting norms for measurement of physical production other than in Metric tonnes is under submission. This report shall be put up to the Board of Directors and thereafter submitted to the Government for its approval."

2.9 From the Annual Report of BHPV for 1985-86, the figures of production & sales etc. have been extracted below :—

Year	Installed capacity	Actual production	Percentage of (3) to (2)	Production after applying intensity factor	Percentage of (5) to (2)	Value of production (Rs in lakhs).	Sales	
							Value (Rs. in lakhs).	Tonnes
1	2	3	4	5	6	7	8	9
1983-84	23210	6530	28.13	10964	47.24	5206.75	4509.79	9419
1984-85	23210	6520	41.01	12676*	54.61	7085.41	7571.50	12350
1985-86	23210	11141	48.00	15401*	66.35	8479.47	8897.67	14370

*The Company has changed the method of Calculating the intensity factor for the years 1984-85 and 1985-86 and the same has also not been approved by Government. During the above three years additional investment to the extent of Rs. 644.64 lakhs has been added to the plant and Machinery.

2.10 It has been pointed out by Audit that the Company has changed the method of calculating the intensity factor for the years 1984-85 and 1985-86 and the same has not been approved by Government.

The figures of capacity utilisation at BHPV as reported by the Company are as given below :—

<i>Year</i>	<i>Capacity utilisation (in M. T.) (in terms of M. T.)</i>
1980-81	60.10%
1981-82	57.29%
1982-83	55.71%
1983-84	47.24%
1984-85	54.56%
1985-86	66.36%

2.11 It is to be seen from the above that even though the percentages of capacity utilisation has been worked out by applying the 'intensity factor', which has not been approved by the Government, the utilisation factor has ranged between 47.24% and 66.36% from the years 1980-81 to 1985-86. It has, however, been stated :—

"There has been a continuous growth rate in finished production (in financial terms) during the last few years. While the production in the year 1971-72 was Rs. 211 lakhs, the same has crossed the mark of Rs. 90 crores in the year 1985-86. However, similar improved production performance trends in physical terms (i.e. in MT) could not be achieved, due to constant changes in the product mix involving more sophisticated equipment and a variety of input materials involved."

2.12 The following table gives details of some important performance indicators of the Company :—

PERFORMANCE HIGHLIGHTS

(Rs. in lakhs, unless stated otherwise)

	1981-82	1982-83	1983-84	1984-85	1985-86
Finished Production (including value of customers' free issue material)	3,298	4,216	5,408	7,259	9,134
Value of net production (excluding value to customers' free issue materials)	3,139	3,684	5,207	7,085	8,479
Net profit after tax	60	107	445	858	575
Value Added	1,736	2,082	3,081	3,826	3,989
Outstanding Orders	6,900	19,856	21,200	19,747	18,425

2.13 The Committee wanted to know the reasons for introducing the new concept of expression which was not originally envisaged in the project. The Chairman and Managing Director stated during evidence :—

“The capacity of 23,210 tonnes was envisaged for a particular product mix, at the initial stages. But the total product mix has changed, and we have to go away from the envisaged products to a totally different type of product and materials, which involve increased quantum of work, to reduce the weight of the equipment. For example, the original vessels were manufactured out of carbon steel which had a particular thickness. When we went in for alloy steel, weights came down appreciably; but the quantum of work involved did not come down, because of the higher technological processes involved. As a result, tonnage-wise we are constantly facing the problem of comparison. Government and the Board of Directors said we should maintain 23,210 tonnes, but try to find out another norm through which we can find out whether we are improving capacity utilisation. A team was constituted to find out different types of norms. They went around and saw a number of industries and came to a conclusion that the same problem is almost faced by all the engineering industries.

So, they suggested that we should look at the actual man hours and convert them into actual standard hours depending on the material used and reckon that as capacity utilization. We are now working out these parameters. For monitoring purposes, the Board suggested that we could do it at random with various materials. So, we did this exercise and this had been approved by the Board. But, meanwhile, Board wanted further exercise to go into and we came out with more realistic norms. This was about in January 1985. Subsequently, a team had gone around and collected a lot of data. They are in the process of finalising a report.”

2.14 When the Committee pointed out that there should be some realistic assessment which had something to do with the reality, the witness stated : —

“This problem has been worrying us very much. We brought this point to the notice of the Audit Board. On the suggestion of audit, we did refer the problem to BPE to find out how to solve the problem. We had a lot of discussion. They also did survey of some of the industries. They have given the result of their survey in the Annual Survey of Public Enterprises 1984-85—Vol. I.

“Multiplicity of product mix, changed pattern of demand, capacity determination and assessment if utilisation of the unit as a whole poses problem and this, in fact, is characteristic feature of multi-product imbalance in working”

They have not been able to throw light on any better system of working.”

2.15 The Committee observed that concept of Intensity Factor was not based upon engineering studies. Asked how did the Ministry view this concept, a representative of the Ministry stated in evidence :—

“The intensity factor was arrived at by standard hours calculation and the standard hours themselves were ascertained after industrial engineering studies. To that extent, there has been industrial engineering study in arriving at intensity factor. They have not been adopting an intensity factor which is reflecting the results in a favourable manner. That means, there has been on an industrial engineering study with regard to the standard hours required for executing a job. It is not a repetitive type of job. This job requires so many hours.”

2.16 Asked whether the Ministry sought any expert opinion on such areas of technical matters. The witness replied :—

“Actually, we are not taking help from outside. Experts are in the company itself. We interact with them. Discuss with them. Even if they set any norms which we feel are not a realistic one, we request them to change. We do not take assistance of any outside experts.”

2.17 The Committee observed that there were two ways to measure the efficiency of the enterprise with reference to its making profit or loss. One was the pricing structure and the other could be the Intensity Factor based upon the production capacity. The second could only be done by Industrial engineers. The Committee desired to know whether the Company had undertaken some engineering studies to arrive at Intensity Factor. The witness replied :—

“This is a valid observation. We have to set some norms to assess the performance of these companies. But what I was trying to submit was this. The intensity factor itself has been arrived at taking into account the standard hours as a factor. A particular job is assessed with reference to the standard hours computed by the industrial engineers, but the only lacuna which has rightly been highlighted by the Audit is that for the

previous years the intensity factor is taken and it is multiplied in the subsequent year. That is actually an empirical way of doing it. That is why, as an improvement over this system the Company has adopted a different method except for two highly sophisticated items. Even this may not be a perfect system. What could be an improvement over even this system is a matter which requires to be studied by industrial engineers."

2.18 When the Ministry was asked whether it felt satisfied with the procedure adopted by the Company regarding application of 'Intensity Factor', the Secretary, Ministry of Industry replied during evidence :—

"We are satisfied because the results show positively."

2.19 The Committee wanted to know whether the concept of Intensity Factor was prevalent in any other Public Sector Undertaking and why did the Company not obtain prior approval of the Board/Government before introducing this procedure. The Company stated in reply—

- (a) Some of the Public Sector Undertakings are following the method of expressing their production in equivalent standard products. For example, BPCL expresses their production in terms of equivalent pumps. Similarly, HMT also is following the expression of equivalent number of some of its products.
- (b) No separate sanction was sought since the technological content in terms of standard hours is considered for expressing of the equivalent tonnage. However, production reports from the year 1980-81 onwards, which were presented to the Ministry, BPE etc., were expressed in terms of such equivalent tonnage only. The approval of the Board was obtained for the revised intensity factor being adopted from the year 1984-85, at its 79th Meeting held in Feb. 85."

2.20 The Chairman and Managing Director of BHPV further explained this concept during evidence as under :—

"About intensity factor, some rationale was built in the initial stages. At that point of time the Company discussed about it to find out a via media and they have arrived at some rational figure. But then the Board of Directors some time in 1983 and also the Audit Board when they visited said, 'this is not a rational figure. you must go into more details to find out.' We did discuss it in the Board. The ultimate aim should be to evolve an indicator which will give a positive indication about the capacity utilisation more effectively."

2.21 The Ministry had stated to Audit Board in February 1984 that "Intensity Factor was applied for expressing production in terms of equivalent tonnage. Since the technological content in the diversified product mix greatly varied from product to product, no separate sanction was sought from the Board or Government for application of the Intensity factor, but whenever production was reported, it was mentioned that production was given in terms of equivalent tonnage. The Company was at present working out alternate methods of expressing production."

2.22 The Committee drew the attention of the Ministry to the above statement and wanted to know what could be the other parameters to assess the extent of capacity utilisation of the Company. The Ministry replied :—

"In an engineering industry, production in terms of tonnage is not the true index of proper utilisation of capacity. The strategy generally adopted is to maximise financial margins keeping the capacity utilization only as a secondary objective.

The financial parameter is one index of performance. Keeping the order book position and margins in view, the Company will have to review and monitor the utilization of capacity of the major machines and shop facilities."

2.23 The Committee wanted to know whether the Ministry was satisfied with the procedure adopted by the Company regarding application of Intensity factor.

The Ministry replied in a written note :

"In an engineering industry in general and a jobbing industry in particular, it is difficult to have permanent parameters for determining the extent of capacity utilisation. In the circumstances where no definite norms are available, the procedure adopted by the Company indicating the 'intensity factor' cannot be said to be unsatisfactory. There is scope for improving upon it and the Company have always been aware of it. They themselves modified the formula of intensity factor from 84-85. Even now they are engaged in the exercise of improving it further.

It may be stated here that the primary consideration before the Company is not full-capacity utilisation in the conventional sense, but making profits in its operations. If at a given point of time, the Company finds that while making sophisticated and high value-added-items, capacity utilisation would be only 50% but profits would substantially increase then they would rather go for 50% utilisation of capacity in the conventional sense of the term rather than utilise it fully by low-value-added items and making little or no profits. It is because of

this element that the Company would be continuously making an exercise for improving the norm of capacity utilisation. The Government is generally in agreement with the strategy adopted by the Company to maximise the financial margins."

2.24 The Committee pointed out that in 1983 BHPV had given certain reasons for the non-utilisation of capacity. The Committee wanted to know how many of those reasons still stood valid. The Chairman and Managing Director of BHPV replied :

"The problem of absence of standard and repetitive job still persists upon, because it varies from customer to customer. This is something which we have not been able to sort out. We still have the problem of low order book position in process plant in area. We are not able to improve it so much. Even for the gas-based fertilizer plants—because they are tied up with the aid—our shares in those areas are still very much limited. So, in order to improve the capacity utilization, we have gone into the area on ONGC operation. We are building and supplying equipments for refinery area.

As far as fertilizers are concerned, we have not improved. But to the best of our ability, we have gone into so many new areas. given presentation to the customers, proved our ability and convince them and taken orders. We still have the problem of loading the machinery. and we are trying to improve the situation by adopting new things and taking up new type of jobs in hands. As far as the second aspect is concerned, we have been able to convince a lot of customers and we can manufacture equipments under our inspection to a large extent. We have been able to do that. But wherever customers insist upon, we try to retain the Inspector in our works so that work will not be hampered. This problem has been eliminated. So, we are able to more or less streamline the working and has reduced idle time in the shop. Cycle time has also been reduced in a large majority of the equipments."

2.25 The Committee pointed out that one of the Corporate objectives of BHPV was to achieve effective utilisation of capacity installed. When asked what action has been taken to achieve this objective, the Company stated :

"Some of the important actions taken for effective utilisation of the installed capacity are detailed hereunder :

- (i) BHPV has taken up various diversification schemes which call for no investment or marginal investment towards balancing

facilities. The important diversification schemes which were taken up by the Company are—

- Cryogenic Equipment,
 - Multilayer Vessels,
 - Deaerators,
 - Industrial Boilers etc.
- (ii) Some of the projects were taken up on a case to case basis under joint bid system with some of the world renowned parties.
- (iii) Undertaking the execution of major projects on a turn-key basis.

In the above context, it is to be mentioned that the capacity utilisation in terms of tonnage is not considered a representative one in the case of engineering units like BHPV, since the utilisation very much depends on the order book."

2.26 The Report of the collaborators for BHPV envisaged a capacity of 23,210 tonnes for various types of equipment with specific product-mix and plant and machinery was accordingly installed. As adequate orders were not forthcoming the Company revised the annual capacity of the factory to 18,000 tonnes in April, 1975. The Committee find that even the targets of production in terms of tonnage laid down each year from 1976-77 to 1983-84 were less than half the original capacity of 23,210 tonnes and were far below the rated capacity of 18,000 tonnes. The actual utilisation of capacity (based on the reduced capacity of 18,000 tonnes) ranged between 33.7% (1979-80) to 60.5% (1977-78) during these years and except in 1977-78, it was below 50% in all these years. From 1980-81 to 1985-86, the figures of capacity utilisation in terms of metric tonnes have been arrived at by applying an "intensity factor" but even then the utilisation factor ranges between 47.24% and 66.36%. This shows that even at present a good portion of the installed capacity remains unutilised. This in the view of the Committee is a matter of serious concern.

2.27 The Committee are surprised at the argument adduced by the Ministry that the primary consideration before the Company is not full capacity utilisation in the conventional sense but working profits in its operations. It has been further stated that if at a given point of time the Company finds that while making sophisticated and high value added items, capacity utilisation would be only 50% but profits would substantially increase then they would rather go for 50% utilisation of capacity in the conventional sense. It needs to be mentioned that BHPV is not going into other areas of production out of choice but is forced to diversify its product-mix in order to improve its capacity utilisation. Unless the installed capacity of plant and machinery is made use of to the fullest extent possible, there will always remain an element of unproductive capital investment, which will affect the overall profitability of the Company. The Committee therefore feel that concerted efforts should be made for optimal utilisation of installed facilities.

2.28 The original project report indicated a certain product profile and also specified the annual capacity in terms of each product by tonnage. It has been stated that as the product profile tilted towards greater sophistication and as the Company diversified into new fields, it was felt that while adding up the total production during the years the tonnage of more sophisticated products should be multiplied by an "intensity factor" as they required higher inputs of resources per tonne. Thus the production figures in terms of equivalent production were being declared from 1980-81 onwards. The Undertaking again changed the method of calculating the intensity factor for the years 1984-85 and 1985-86. This innovative method of calculating the actual production in terms of equivalent production was neither based on any scientific method like industrial engineering nor had it been approved either by the Board or the Government. It was obviously a device worked out by the management to present a better picture of the production performance of the Company. That the formula adopted by the management for the expression of physical production has not been considered satisfactory is clear from the fact that in the consecutive performance review meetings held in the Ministry the need for making a scientific assessment of the capacity to enable better evaluation of performance in physical terms has been emphasised time and again.

2.29 According to the Company an exercise is now on for laying down norms for measurement of physical production. The Committee would like to emphasize that this exercise should be completed urgently so that suitable scientific computation formulae for assessing the actual capacity utilisation are devised.

2.30 While explaining to Audit the reasons for the under utilisation of capacity, the Company had in 1983 listed out certain constraints which affected their performance. These inter-alia included absence of standard and repetitive jobs, low order book position, longer cycle time etc. When asked which of these problems still persisted the Committee were informed that many of these factors were still having their influence on the production performance. The Committee desire that more concerted efforts should be made and better strategies should be adopted to get over these difficulties so that the Undertakings working becomes streamlined and the Undertaking is able to fulfil its corporate objective by achieving effective utilisation of the installed capacity.

CHAPTER III

MANPOWER ANALYSIS

(a) Staff Strength

In the project report, the collaborators recommended a total number of 2110 employees for an annual production of 23,210 tonnes; direct and indirect workers were to be about 38% and 32% respectively of the total strength (i.e. in the ratio of 100:84). The Company, however, made its own assessment of man-power requirements from time to time viz. 2568 in October, 1967, 3568 in April, 1973 and 4149 in June, 1974 although the actual production was far below 23,210 tonnes.

3.2 The following table reveals the actual staff strength and tonnage of production during the last 5 years :—

Year	Staff (in number)	Produc- (tion (in ton- nage)
1981-82	4009	7006
1982-83	4041	8222
1983-84	4188	7568
1984-85	4255	9520
1985-86	4266	11141

3.3 Asked what was the justification for employing higher number of employees when the actual tonnage produced was far less than 23,210 tonnes, the Company replied in a written note :

“The original project Report primarily envisaged the Direct and Indirect workers for production areas only. The areas such as Finance, Medical Township Maintenance and Administration, Security personnel and Administration, Training, R&D etc. have not been provided adequately. Also in the subsequent implementation of original Project Report, many new products have been added necessitating deviation from the norms fixed in the original Project Report, for staff strength. Taking all this into account, the sanctioned strength has been revised from time to time and duly approved by the Board of Directors. In April 1973, Board of Directors sanctioned the strength on an estimated per capita production of 10.4 tonnes per direct worker. In the year 1984-85 and 85-86

the per capita production per direct worker was 9.32 tonnes and 10.62 tonnes respectively. Thus, it could be seen that norms approved by the Board of Directors have been by & large achieved."

3.4 The Chairman and Managing Director of BHPV further explained this position during his evidence before the Committee :

"Originally, 2110 people were envisaged in Detail Project Report (DPR) for production of 20,000 tonnes. But then, there are certain areas which are not at all covered by the DPR. One is the personnel function. Similarly township, its administration, upkeep of township security, medical facilities, finance functions were not envisaged in the DPR. At that time their contention was that, they were not clear about the requirements of Indian conditions for these functions."

3.5 The break-up of actual number of employees into different categories in 1978-79, 1985-86 and as per original Project is given below :—

Category	As per Project Report	1978-79	1985-86
Total Staff	2,110	3,624	4,266
(a) Direct Workers	835	1,279 (35.29%)	1,144 (25.80%)
(b) Indirect workers	720	729 (20.12%)	1,203 (28.20%)
(c) Others	761	706
(d) Supervisors/Officers	555	855 (23.59%)	1,253 (29.37%)
(e) Ratio between direct & indirect	1:0.84	1:0.57	1:1.13

3.6 Giving out the reasons for engaging excess indirect workers as compared to the norms laid down by the Collaborators, the Company stated in a written note that :

"...the increase in the indirect workers is due to regularisation of 457 casual employees and also due to diversion of some of the indirect workers into direct workers category.

Indirect labour increase was also necessitated because of other services, not particularly envisaged in the project report, had to be implemented. Keeping in view the organisational needs, the future growth potential, the workmen viz., both direct and indirect categories, efforts are being made to train

the workmen in multi-disciplines. Further, BHPV has enlarged its activities by taking up turn-key contracts which involves site management, erection and transportation work wherein the indirect employees are being engaged."

In another note, the Undertaking has stated :

"It was estimated that production per direct works out 10.4 tonnes. However, over a period of years, the total product mix has totally changed necessitating a different type of norm for assessment.

In the year 1985-86, the actual tonnage achieved was 11,141 tonnes with particular product mix, using 1104 direct employees. This works out approximately 10.62 tonnes per direct worker per annum, which compares even with the norm envisaged."

3.7 The Committee observed that the number of Supervisors and officers had gone up from 855 in 1978-79 to 1253 in 1985-86. The percentage of direct workers had come down from 35.29% to 25.80%. The percentage of indirect workers had gone up from 20.12% to 28.20%. The Committee, during evidence, asked for the reasons for deviating from the norms approved by the Undertaking itself. The Chairman and Managing Director of BHPV stated :—

"...The present ratio between direct and indirect workers, is 1:1.13. That has been worked out. Of course, this has been so partly because 457 people who were employed as casual at some point of time have been regularised. Coming to the increase in engineering and supervisory staff, we have taken a large number of turn-key projects and site works. Unless we improve the site-work operation, it is not possible to go on the turn-key operation. So new graduate engineers, IMES were inducted into the newer areas, they were trained and put on the job, which is going to be a long term benefit for the organisation... Similarly some of the direct workers who are working on shop floor have been diverted to site works. We do not want to add any new people in the area because we like to improve the contribution per employee rather than increasing the people. That is our intention. It is better to utilise the people on hand. We went in with that philosophy and where-ever there is a need for people on site work, we diverted the people and reduced it because the reduced number of people should increase the output and thereby contribution."

3.8 The Committee enquired whether any scientific evaluation of the manpower needs of the Undertaking had been attempted. In a note the Undertaking has stated :

“As seen from the records available, even though the subject of manpower utilisation at BHPV was referred in the year 1978-79 to Andhra Pradesh Productivity Council, there was no specific recommendation on the subject. We are having 1104 Direct Workers as against 835 envisaged in the Project Report. The increase of 269 Direct Workers is commensurate with the technologically more intensive work done now. We had to regularise 457 casual employees at one point of time, thus adding to indirect workers strength. While the number is in excess of the recommendations of the Collaborators, in view of the diversified activity, their employment is essential. As regards the excess employment in the Executives and other staff, many of the administrative departments, such as Personnel, Finance, Medical, Township, EDP, Security etc. have been left out or not been adequately provided for in the original Project Report. The Company has also expanded its activities in the systems engineering side involving erection and commissioning, which calls for more number of Supervisors and Executives strength. In view of this, it is felt that the existing manpowers is not much in excess requirements. The Company has been conscientiously striving to utilise its existing manpower to the maximum by diverting some of the workers to areas where there is heavy loading and avoiding over time.”

(b) *Utilisation of labour*

3.9 The table below gives details of the total available hours, net available hours and percentage of hours booked to jobs to net hours available from the year 1981-82 onwards :

(In Lakhs of Hours)

Year	Total available hours	Net available hours	Hours utilised on jobs	Percentage of hours booked to job net hours available
1981-82	27.21	23.28	13.91	59.50
1982-83	26.91	23.06	16.01	69.43
1983-84	26.95	23.15	16.57	71.58
1984-85	25.08	20.91	15.09	72.17
1985-86	25.55	21.63	15.74	72.77

From the above it is seen that the percentage of hours booked to jobs as compared to net available hours has gradually gone up to reach 72.77% in 1985-86. The percentage of idle hours to net available hours which was 11% in 1979-80 rose to over 26% in 1985-86.

3.10 In a note furnished to the Committee, the Undertaking has stated :

“During the year 1985-86, total available hours were 25.55 lakh hours. After taking the actual absentee hours, the net available hours for utilisation were only 21.63 lakh hours. The labour utilisation in the year 1985-86, remained at 73% leaving unutilised labour hours of 5.70 lakh hours i.e. 27%. An analysis of the idle time indicates that about 83% of the idle hours is for want of work. It has been explained that the Company did not have sufficient orders for process plants and despite loading the shops with orders from other products, there has been idle time for want of work. The Company is looking into the matter and will be taking corrective actions either by diversion of men or finding out other jobs to reduce idle time.”

3.11 Explaining the reasons for high percentage of idle time, the CMD, BHPV stated during evidence :—

“We have to make efforts constantly to reduce it. . . . We are not in a position to retrench anybody. The area where we need more people, we are retaining them to a particular job. We have a separate institution where we train and retain the employees. We are trying to identify people who can be trained to do a particular job rather than to the new recruits.”

The witness further explained—

“There are some extraneous conditions which are beyond our control. Some of the material which we order, the delivery period is given say by April. But it does not come in April. Then the delay comes in and contributes to idle times. What is happening is, the thrust is being put to see that the efficiency is increased or the overall cycle time is reduced. If we are not able to feed material in time, it comes to this and idle time increases.”

3.12 Specifically detailing the areas where idle hours are more than the justifiable level, the witness stated :

“Light machine shops-utilisation in that area is much less. This was installed at a point of time when no facility was available on a two shift basis. We have not been able to fully load even in one shift and hence we have idle capacity. We got all the dies and tools done in our own shop. But still we are unable to utilise them fully.”

3.13 Asked why the surplus workers could not be transferred to some other department where they can be assigned some other job. The witness replied :—

“At one point of time this establishment shop was supposed to utilise two shift operations. We found that even on a regular basis even to work on a single shift, full load was not possible. We have taken some of the people out and put them where there is workload. But still inspite of it we have not been able to reduce it. The minimum is to be kept in one shift operation.”

3.14 The Undertaking intimated the Audit in February 1984 that the loss of man hours due to want of work was not due to insufficient orders but due to non-availability of certain facilities for balanced working and that constraints have been identified and by providing marginal facilities labour could be used fully. Asked, what balancing facilities are required, absence of which contributed to idleness and what remedial steps have been taken in this regard, the Undertaking informed in a written note :—

“To improve the balanced working and to improve the productivity, new Material Handling system at a cost of Rs. 180 lakhs is being provided. Also, some automatic welding machines like Double headed Narrow Gap Arc welding, tube to tube sheet tig welding, pipe to pipe tig welding, nozzle to shell submerged arc welding, plasma tig welding etc. have also been established recently. It is also proposed to install multispindle computer programmed drilling-machine to debottleneck the H. E. Production facilities. Similarly, to improve material preparation particularly Petal Marking and cutting for Horton Spheres, it is planned to install Programmable marking and cutting machine.”

However CMD, BHPV stated during evidence :

“Between rolling & welding, the imbalances were identified, we have gone in for sophisticated machines to improve the overall utilisation. In the process we are unable to feed & hence the idle time could not be reduced. Efforts are being made to feed the material faster. Obtaining the import licence, getting material on time has become much more a difficult and time consuming and contributes for quite a bit of idle time.”

3.15 Regarding idleness arising from lack of material handling facilities, the factory had under consideration the relay out to provide additional material handling facilities. The Committee wanted to know the latest position of Undertaking's plan to relay-out. The witness replied during evidence :—

“We have identified the flow of materials has been the bottleneck and planned to improve the facilities so that these operations can go on smoothly. Estimates are prepared and approved by the Board.

This scheme material handling is under implementation. By next year we hope to get through the whole scheme completely. Some minor readjustments have been done. But this is a continuous process."

3.16 Enquired as to what measures were taken to streamline the system to reduce idle hours. The Company informed that the following steps have been taken in this regard :—

- (a) Constitution of Project Monitoring Cell.
- (b) Monitoring of Technological problems well in time by the Advance Technology Cell.
- (c) Monitoring of receipt of inputs.
- (d) Weekly review by the Pre-production task force groups.
- (e) Drawing up of detailed activity schedules—operation-wise.
- (f) Weekly review meeting to identify the slippages and to take corrective actions.
- (g) Maintain healthy order book so as to provide continuous work to the shops."

Overtime Payments

3.17 On the one hand the Undertaking had high percentage of idle hours to make use for production, on the other hand it had been making payments on account of overtime to its employees. It looked paradoxical. The Committee wanted to know the justification for making overtime payment. The CMD, BHPV replied during evidence :—

"On a number of days, the work load could not be fed into the machines due to late arrival of material. Then we had to finish the work in time. We were not happy with that. That is why, in the following years we did not get into this situation. In the subsequent years overtime payment has been drastically reduced."

3.18 The Committee were further informed that before 1983-84, considerable overtime hours were worked to achieve set targets. From 1984-85 onwards considerable reduction in O.T. hours was achieved. Strict controls reportedly adopted by the Undertaking resulted in considerable reduction of total available hours. Consequent on control measures, the over-time payment during the year 1985-86 came down to Rs. 20.67 lakhs as against Rs. 56.18 lakhs in the year 1983-84.

C. Production Incentive Scheme

3.19 To improve productivity, the Company introduced in 1979 a production incentive scheme, which provided for incentive payments for all those who achieved 70 productive standard man-hours (PSMH) a month. In spite of payment of substantial amounts as incentive (Rs. 11.22 lakhs

each in 1982-83 and 1983-84, Rs. 16.05 lakhs in 1984-85 and Rs. 22.28 lakhs in 1985-86), the total PSMH declined from 14.81 lakh hours in 1980-81 to 12.12 lakh hours in 1984-85 and increased to 14.19 lakh hours in 1985-86. Although the Company expected that the output would progressively increase from 7700 tonnes in 1979-80 to 12,800 in 1983-84, 14,100 tonnes in 1984-85 and 15,400 tonnes in 1985-86, the actual production was 7568 tonnes in 1983-84, 11,428 tonnes in 1984-85 and 13,798 tonnes in 1985-86. In spite of the introduction of incentive payment the percentage of idle man-hours and machine hours, which were 11% and 43% respectively in 1979-80 rose to 26% and 73% respectively in 1985-86.

3.20 Asked, why the introduction of the production incentive, did not contribute to an increase in production as was expected, the Undertaking replied in a written note :

“.....With the introduction of incentive scheme, the effectiveness of the workmen has generally improved, resulting in achievement of higher standard hours for lesser number of actual hours spent on the jobs than earlier. However, similar trend did not emerge in the case of machine utilisation hours since the actual time taken for completion of the job by the worker is lesser than the earlier times.”

3.21 Further explaining the position, CMD, BHPV said during his evidence :

“After the introduction of the production incentive scheme because of the improved operations during the year 1985-86 the standard hours we achieved during the year 1985-86 work out to 14.19 lakh hours against an average of 70 standard man hours set for the incentive scheme. There is an improvement from 70 to 107 after the introduction of the incentive scheme. Normally it is 70 standard man hours taken as base for incentives, but we have been able to achieve about 107 man hours, and it has contributed to the improvement in productivity.”

3.22 The Committee observed that what the Undertaking achieved (Actual Standard hours produced) in 1985-86 was still less than what it achieved in 1980-81. For instance in 1985-86 it was 14.19 lakh hours, whereas in 1980-81 it was 14.81 lakh hours. The Committee wanted to know whether the introduction of incentive scheme has actually contributed to the increase in production. In that case percentage of actual hours achieved to available Standard hours should also have gone up. Obviously, increase in production is not because of incentive scheme but due to the

general efficiency level. In this context, the Committee wanted to know the specific contribution of this scheme. The witness replied :

“After the incentive scheme is introduced the general trend has been on the increase as far as standard hours are concerned. But in the year 1980-81 it was higher, i.e., about 14.81 lakh hours, for two reasons. One was, in that particular year we had a standard product, a large number of tank wagons. So the quantity of work that turned out was much higher. That was one great advantage. But in the later years there is no repetitive type of jobs. So, that has contributed to a much higher achievement of standard hours in the years 1980-81. Secondly, partly there was some over-time also which has also contributed to the higher increase of standard hours. Because of the availability of jobs on hand and delivery conditions we had to put some people extra and had the jobs done. That had both advantages. You will notice if you take out 1980-81, then in the remaining years the standing hours were all on gradual increase.”

3.23 If the success of incentive scheme is viewed against the idle man and machine hours, these have not come down but on the contrary their number have increased after the introduction of the scheme as is evident from the following figures :—

	Percentage of idle	
	man hours	machine hours
1979-80	10.93	42.99
1980-81	24.83	64.19
1981-82	39.60	68.25
1982-83	29.58	70.65
1983-84	27.17	68.35

3.24 When the Committee drew attention to the above, the witness stated :

“As far as the machine hours are concerned, for utilisation there is limitation. It is because only when the jobs are available, we can load them. But they are inescapable equipment which we need to have. For better utilisation, if we have to feed the machine on continuous basis, we have to look for outside jobs and what type of jobs can be loaded on those machines. We are trying our best but unfortunately, Vizag being such a small place, we are not able to get much jobs from the Industry.”

Only recently we got some jobs from Vizag Steel Plant. We are certainly keeping this in mind and working at it.

The idle-time hours which were 9,26,000 in 1981-82 had come down to 5,70,000 in 1985-86. Utilisation of man-hours available had been increased from 1981-82 to 1985-86."

3.25 The Committee enquired whether the incentive scheme was being reviewed in Board's meeting annually or not, the witness said :

"It has not been reviewed on annual basis if I remember correct, after we introduced this scheme, we discussed and reviewed it once in 1983."

3.26 Asked whether the Board was aware that this scheme has not yielded desired result, the witness said :

"We have brought to the notice of the Board from time to time the total results achieved. The targets were reviewed with respect to financial year and of course, every quarterly production targets and achievements were also put up to the Board."

3.27 On enquiry whether the Ministry reviewed the performance of this scheme or not, the witness stated :

"The scheme, in particular, was not reviewed because, as far as I know, the over all performance has been improving and production was going up and whatever targets have been set, we have been able to achieve on over-all basis and see that the customers' requirements are not defaulted very much. They took it that things are all right. The particular scheme has not been gone into detail and discussed in detail in the review meetings of the Ministry."

3.28 The Committee desired to know as to why the introduction of the production incentive scheme did not contribute to increase in production as expected. In a written note, the Ministry have stated :

"Increase in production in terms of tonnage is dependant upon product-mix. A low technology item can be manufactured easily and do in a given period of time its tonnage is larger than the tonnage of a high technology item which takes more time. Secondly, there are times when all shops are not full. Some shops have very low load while others are full. In the Shops which are full, incentive money has to be given to attain full production. On the other hand, unloaded shops decrease production and cause idle hours. This results in the lop-sided view that while money is spent on incentive scheme, the production appears less in terms of tonnage and there are also idle man-hours and idle machine-hours. It is in this context that

the importance of an incentive scheme should be appreciated by value added per employee."

3.29 In the project report of Bharat Heavy Plate & Vessels, the collaborators had recommended for an annual production of 23210 tonnes, a total number of 2110 employees of which direct and indirect workers were to be about 38% and 32% respectively. The Undertaking, however, made its own assessment of man-power requirements from time to time viz. 2568 in October, 1967, 3568 in April, 1973 and 4149 in June, 1974 although the actual production was far below 23210 tonnes. From 1979-80 onwards indirect workers increased rapidly and in 1983-84, the ratio of indirect and direct workers stood at 114:100 as against the norm of 84:100 indicated by the collaborators. An analysis of the employees strength at the end of 1985-86 reveals that against the norm of 555 there were as many as 1253 supervisors and officers. The Committee are constrained to say that in the context of the largely underutilised capacity, more idle man-hours and very poor machine utilisation, substantial additions in man-power from time to time sound paradoxical. Since there has been no scientific evaluation of the manpower needs of the undertaking at any time, the Committee desire that for a proper and realistic appraisal of the man-power needs, the undertaking may entrust this work to a recognised management institution like National Productivity Council. The Committee may be informed of the action taken in the matter.

3.30 From the data made available to the Committee it is seen that the percentage of hours-booked-to-jobs to available hours has gradually gone up to reach 72.77% in 1985-86. However, the percentage of idle hours to net available hours which was 11% in 1979-80 rose to over 26% in 1985-86. Thus the labour utilisation in the year 1985-86 remained at about 73% with 5.70 lakhs unutilised labour hours, which constitute about 27% of the total available hours. This by no means can be considered to be a satisfactory state of affairs. The Committee have been informed that an analysis of the idle time indicates that about 83% of the idle hours are for want of work as the undertaking did not have sufficient orders for process plants and despite loading the shops with orders from other products there has been idle time for want of work. It is thus clear that the undertaking has more manpower than warranted by the needs of the work in hand. The matter needs to be looked into for taking corrective action either by diversion of manpower or finding out other jobs to reduce idle time.

3.31 The Committee find that on the one hand the undertaking had staff strength much in excess of the originally envisaged strength and had high percentage of idle hours. on the other hand the undertaking had been making payments on account of overtime to its employees. Despite various controls, reportedly exercised by the undertaking, it had paid Rs. 20.67 lakhs in the form of overtime payments during the year 1985-86. The

Committee do not find any justification of this payment in view of apparent over staffing of the undertaking. The Committee would urge that the undertaking should carefully examine this aspect in the context of its manpower and idle hours and deploy the available staff in shifts in such a manner that need to pay overtime does not arise. The Committee desire that power to sanction overtime should be given to fairly senior officers who should be accountable to Chief Executive of the organization on this score.

3.32 The Committee find that with a view to improve productivity, the undertaking introduced in 1979 a production incentive scheme, which provided for incentive payments for all those who achieved 70 productive standard man-hours (PSMH) a month. In spite of payment of substantial amounts as incentive (Rs. 11.22 lakhs each in 1982-83 and 1983-84, Rs. 16.05 lakhs in 1984-85 and Rs. 22.28 lakhs in 1985-86) the total PSMH declined from 14.88 lakhs hours in 1980-81 to 12.12 lakhs hours in 1984-85, which figure increased to 14.19 lakhs hours in 1985-86. In spite of the introduction of incentive payment the percentage of idleman hours and idle machine hours, which were 11% and 43% respectively in 1979-80 rose to 26% and 73% respectively in 1985-86. From this the Committee get an inevitable impression that the introduction of the incentive scheme has not contributed to an increase in production as was expected. It is also seen that this scheme has not been reviewed on an annual basis by the Board of the management. The Committee desire that a systematic review of the incentive scheme should be undertaken to see how far the extra expenditure involved has been commensurate with the improvement in productivity of men and machines at BHPV.

CHAPTER IV

MACHINE UTILISATION

In the Project Report, the machinery needed was assessed for an annual production of 23,210 tonnes of the product-mix then envisaged. The product-mix was changed from time to time as assessments of demand changed and balancing equipment was added to meet the changed requirements. It has been stated that out of 173 machines, 24 machines valuing Rs. 257.37 lakhs were added as balancing facilities or as replacements after the original provision of Plant and Machines. 75 machines valuing Rs. 667.48 lakhs had been procured from outside the country. As against the original estimate of Rs. 10.61 crores, plant and machinery valued at Rs. 23.12 crores have been installed upto 1985-86.

4.1 The Committee have been informed that apart from auxiliary equipment such as cranes etc. 173 machines for aiding the manufacture of equipment of BHPV have been installed. The machinery have been classified as High Cost machines valuing more than Rs. 5 lakhs each and low cost machines valuing less than Rs. 5 lakhs. A statement showing Machine Utilisation in the year 1985-86 is given below :

High Cost Machines

No. of machines not used	No. of machines springly used	Percentage of utilisation	No. of machines fully utilised	Percentage of utilisation
3	13	4% to 44%	14	32% to 91%
Low Cost Machines :				
8	66	1% to 23%	69	3% to 60%

4.2 It is seen from the above that 11 machines including 3 high cost machines have not been used at all. In respect of 79 machines (including 13 High Cost machines) the utilisation factor is as low as 1% and ranges between 1% and to 44%. There are 83 machines (including 14 High Cost machines) which are stated to be fully utilised but their utilisation factor ranges between 3% and 91%.

4.3 The percentage of idle machine hours to available hours was over 68 in each of the last 5 years ending 1985-86 as detailed below :

Year	Percentage of idle hours to available hours
1981-82	68.25
1982-83	70.65
1983-84	68.35
1984-85	70.09
1985-86	73.25

4.4 The Committee desired to know what were the reasons for such a large scale idleness of machines.

The Chairman and Managing Director of BHPV explained this position as under during his oral evidence :

“It is true that whatever machine is absolutely essential for working or for developing the production which we have envisaged in the production report, we need to go in for. The normal practice is even to decide whether, if it is a very low utilisation machine, it is worthwhile to have the machine or if facilities are around we make use of those facilities and do not invest on the machinery. That is normally gone into. What we are able to see from the records is that in the year when we envisaged this, there were no facilities available around anywhere and moving any of the big thing and getting the work done from a place like Madras or Hyderabad, moving back and forth, would cost us a lot of money. We divide the machinery into two broad categories, high-value machines and low-value machines. In the case of low-value machines, the utilisation may be poor but still they are inevitable because the amount of money we would otherwise have to spend in transporting things would be much more than the cost of the machine itself. By and large, we find that utilisation in the case of high-cost machines is about 60 per cent as compared to about 30 per cent utilisation in the case of low-cost machines...”

4.5 Asked as to how many machines are there in the high cost or in the low cost whose utilisation has been less than 10 per cent.

The witness replied:—

“In high-cost machines, there are one or two machines. One is a

big central lathe. It is inevitable for us because there is no facility available either in Hyderabad or in Madras for doing that job. We have no option but to do the job on the machine. We are trying to utilise the machine for something else also. May be, the cost of production, if I use that machine, may be more, but we will make use of the machine to the extent possible. That arrangement, we are trying to do. There are one or two large-sized machines."

4.6 Amongst 11 machines not at all used during 1985-86, one machine viz. the Electro Slag Machine (Rs. 5.69 lakhs) was used in the initial stages only. Asked about the reason for not utilizing this machine now. The witness replied :

"It might have been used in the initial stages for working. But thereafter I do not think this has been worked at all. The machine is in order, but there is no use for the machine. Technologically, we do not use it. I have the original project report, when it was prepared for large thick-walled vessels, what the Russians follow, the same technology was adopted, but we found that technology was obsolete; we have much better technology available and we have changed over and gone to the different technology which is much more beneficial. Technologically, if you view the machine and do the welding, the whole vessel requires normalising. If we want to use the machine, we have to go for normalising which is a problem. We have not gone for that."

When further asked, what was the Company going to do with this machine. The witness said :

"We have tried to find a market. In India nobody is using this machine, nobody wants this We have been trying to find out whether any big boiler manufacturers like BHEL will require this."

4.7 Explaining the steps taken to improve utilisation of machines the witness deposed during evidence :

"We have examined and identified certain balancing facilities to work in conjunction with. One facility has a bearing on the second facility. Wherever there was a deficiency in the capacity available, we have added things here and there, which ultimately improves the overall working. Secondly, with regard to the timely inflow of materials into the shop, we have lots of problems. There are cases where for the import licence, we have been struggling for 4-5 months. In the process, there was lean period and peak period. During the

peak periods, lead increases and during the lean period, there is a spare capacity."

4.8 The Committee enquired whether the large scale under utilisation of machines had come to Ministry's notice and if so, what measuring had been suggested for optimum utilisation. In a note, the Ministry has stated :

"Three machines, viz. Electroslag Welding Machine, Plate Bending Machine and Wrapping Machine, which are not being used, have already been declared as surplus and prospective purchasers/users for these machines are being located. Some of the machines even though with low percentage utilisation are required for manufacture of equipment, for which BHPV has been established.

During the Review Meetings, the Ministry has pointed out about the low capacity utilisation and asked the Company to take necessary remedial measures. Further, during the Board Meetings (where the representative of the Ministry is present as a Director of the Company), the issues were discussed and necessary remedial steps were suggested. Consequent on such low capacity utilisation, the Company has taken up a number of diversification schemes. In this context, it may be stated that in any Engineering Industry, certain machine, which are of general purpose in nature, cannot be fully utilised and at the same time, the same becomes essential for taking up certain jobs. Also in one of the Board Meetings, it was suggested that the Company may examine the possibility of hiring out the idle facilities to some other undertakings. Due to various practical problems such a hiring out was not found feasible."

4.9 As stated earlier the capacity of the Company was reduced from 23,210 to 18,000 tonnes in 1975. The Committee desired to know to what extent the machines were rendered surplus on account of reduction in capacity and how were these machines being utilised. The Company have in a note stated :

"Originally, the Company envisaged to produce 23,210 T of equipment of a particular product mix laying more stress on pressure Vessels, storage Vessels, furnaces, large quantum of piping, large quantity of pressed parts with carbon steel. However, due to paucity of orders in some of the areas (being low technology items)—Fired Heaters and Furnaces, piping and pressed parts (dished ends)—the product mix had to be redefined, depending upon the market needs so that the overall standard hours worked can be utilised without substantial

change in the tonnage. Thus, when the diversification plans were developed readjustment in tonnage had to be made. This, however, enable the utilisation of manpower available on the reduced tonnage rendering certain machine capacity surplus for future years. Thereafter, with the introduction of diversification plans for Boilers and introducing hot metal pressing technology for the manufacture of spheres, these facilities are being utilised to a large extent reducing their idle time."

4.10 At the time of derating the capacity from 23210 to 18000 tonnes, the capacity of 4500 tonnes for pipe fabrication and 3000 tonnes for dished ends was reduced to 1000 tonnes. In regard to utilisation of facilities created for dished ends, the Company have stated:

"BHPV requested BHEL to off load some of their piping jobs till 1979 to 1983, which enabled improvement in the utilisation of facilities for production upto 500 tonnes per annum as against 12 Tonnes during 1976-77 and 4 tonnes during the period 1977-78.

BHPV in its own turn has taken up manufacture of Industrial Steam Generators, which, once again, has helped in utilising pipe fabrication facilities.

In order to meet the specific requirements for Boilers, one more Pipe Bending Machine has been added. It is expected that with the improved order book position in the Boiler field, the utilisation would improve gradually even though presently it is below 10%. As these machines are specific purpose machines required for both Boilers as well as Piping, they cannot be dispensed with.

4.11 Dished Ends

The capacity utilisation in respect of Dished Ends as indicated in the CAG Report under reference dealt only with the Dished Ends that have been pressed for outside agencies. Apart from pressing the Dished Ends required for manufacture of other capital equipment within the Company, the same machines are being utilised for other pressing purposes i.e. for Horton Spheres etc. During the year 1985-86, the total tonnage pressed on these equipment was 3424 tonnes.

The utilisation of the 3 Presses during the year 1984-85 and 1985-86 is indicated hereunder:

	1984-85	1985-86
(i) 1600 T. Press	92%	91%
(ii) 400 T. Press	50%	61%
(iii) 250 T. Press	68%	79%

Thus, it could be seen that the facilities created for the pressed parts (Dished Ends) is being utilised to the fullest extent possible."

In another note, the Company has stated :

"Utilisation of Pipe fabrication facilities during the year 1985-86 was around 7%. Consequent on BHPV's taking up the diversification scheme of Industrial Boilers, the facilities are necessarily to be maintained and the capacity utilisation for Pipe fabrication is expected to improve.

We have also been requesting BHEL to utilise our facilities for their work, in order to improve the utilisation."

4.12 The Committee enquired whether any forecast on the load for the machines/machine centres was being prepared at least now to plan for full and profitable utilisation of capacity of the machines and if not how is the Company ensuring that all the machines are being fully utilised. The Company has stated :

"BHPV is a jobbing shop manufacturing the custom-built equipment and any forecast of the load on machine/machine centres can be prepared as and when the orders are received and the manufacturing drawings are made. With various constraints, it will be difficult to plan for full utilisation of machine/machine centres. However, with the installation of the modern computer, the entire manufacturing technology is being computerised. This would enable us to write the rough technological process for various equipment at the enquiry stage itself which, in turn, will enable us to get the approximate load on various machine centres when once the enquiry results in an order."

4.13 The Committee note that the BHPV had originally installed plant and machinery at an estimated cost of Rs. 1061 lakhs for an annual production of 23,210 tonnes. It created additional facilities in 1976 at a cost of Rs. 20.70 lakhs for the revised product mix. Subsequently also substantial capital investment has been made in providing balancing facilities for the production of specialised products. During the years 1983-84 to 1985-86 additional investment to the extent of Rs. 644.64 lakhs has reportedly been added to the plant and machinery. At the end of March, 1986, the gross value of plant and machinery installed at BHPV amounted to Rs. 2311.69 lakhs against the original estimate of Rs. 1061 lakhs. Thus even though the production capacity of the Company has been reduced from 23,210 tonnes to 18,000 tonnes, there have been substantial additions to the plant and machinery.

4.14 With the overall utilisation factor of the plant ranging between 50 and 60 percent only, a major portion of the installed capacity in machines has remained unutilised or underutilised. From the information made available to the Committee it is seen that the percentage of idle machine hours to available machine hours was as high as 73.25% in 1985-86 and this figure was never less than 66.8% during the last 5 years. Such large scale idleness of the machines should necessarily be a cause for serious concern both to the undertaking as well as to the Ministry of Industry. The Committee desire that suitable corrective measure, both short-term and long term, should be taken urgently to ensure that the idle and underutilised machines are put to maximum productive use.

4.15 The Committee have been informed that apart from auxiliary equipment such as cranes etc., 173 machines for aiding the manufacture of equipment at BHPV have been installed. Out of these 75 machines valuing Rs. 667.48 lakhs had been procured from outside the country. Depending on the cost these have been categorised as High Cost and Low Cost machines. It is seen that 11 machines including 3 High Cost machines have not been used at all. In respect of 79 machines (including 13 High Cost Machines) utilisation factor ranges between 1% and 44% and there are 83 machines, which are stated to be fully utilised but their utilisation factor ranges between 3% and 91%. This presents a very dismal picture and calls for immediate remedial steps. Not only the huge capital involved in the purchase of these machines is blocked without any return, avoidable expenditure is incurred on their servicing and maintenance. It also results in misutilisation of the precious space. The Committee, therefore, recommend that the machines not being utilised should be disposed of immediately in whatever manner possible. Possibility of using these machines in other public sector undertakings may be explored and if there are no takers there, these may be put on sale to private users. A fresh exercise may be made to identify such of the sparingly used machines which can be dispensed with in the interest of economy. These may also be disposed of at the earliest. The Committee would expect to be apprised about the concrete action taken in this regard within six months.

CHAPTER V

RESEARCH AND DEVELOPMENT

The broad objectives set out for BHPV *inter alia* provide that BHPV will strive :

- (a) To achieve a leading position in designing, engineering and manufacturing of quality process, storage and distribution equipment required by various industries.
- (b) To design, engineer & manufacture cryogenic plants and create a network for distribution of cryogenic liquids.
- (c) To achieve a leading position in research and development in different fields of engineering and technology in the areas of work relating to its business and to strive for greater self-reliance through import substitution.

5.2 The Research & Development Division was set up in BHVP in the year 1975 mainly with the objective of developing manufacturing technologies, to improve the process designs and to bridge the technological gaps. As on date, the R & D Division has 21 Executives, 5 Supervisory personnel, and 19 workmen. This Division has reportedly completed 32 projects upto the year 1979-80. During the period 1980—83, 16 projects (spilled over from the year 1979-80) and another 19 proposed during this period were completed. However, 12 projects which were taken up during the year 1982-83 spilled over to the next year. Out of these total 12 projects under progress during the year 1982-83, 11 projects were completed during the year 1984-85 and 1 project was dropped.

5.3 The R & D programmes are divided into 3 groups viz.,

- (a) Improving the technological process for the existing products.
- (b) Developing new technologies both for the products already manufactured and the new products needed for the market, and
- (c) The long term development programmes keeping in view the market requirement for the future business.

It has been stated that upto the end of March, 1986, Rs. 225.29 lakhs were spent (Rs. 104.61 lakhs on capital account and Rs. 120.68 lakhs on revenue account) on R & D programmes. An estimated outlay of Rs. 684.91 lakhs has been provided during the VII plan period for taking up a number of new projects, which would greatly help for taking up new products/processes which have commercial applications. It has been stated in this context that the expenditure on R & D forms less than 1% when compared to the total turnover of the Company.

5.4 In regard to achievements of R & D it has been stated that :

- (i) Apart from effective contribution in bridging the technological gaps, the division has been making efforts for continuous indigenisation and for development of new products and systems.
- (ii) Presently the R & D is dealing with manufacture of titanium anodes for caustic soda industry and cryobiological containers for dairy industry.
- (iii) Certain products viz. super insulated piping and tanks, quick freezing units, L. N. 2 tanks, titanium heat exchangers/ columns/vessels, etc., are poised for release for commercial exploitation.

5.5 During evidence before the Committee, the CMD deposed as under :

“..... for designing equipment we have been by and large able to achieve and today we are quite confident of designing all the equipments. May be some more work needs to be done in order to optimise this equipment to make it more economical. That is in the process.

He added :

“There are three product groups, viz. Process Plants Cryogenics and steam generators. In the Process Plants originally we get the technology through the collaboration agreements and it was primarily for the manufacture of the carbon steel vessels. But as the product mix and the profile of the process industry changed over a period of time, we have no option but to develop our own equipment that is required. These are all with our own efforts we have gone through with the basic technical know-how that is available for the carbon steel equipment. These have all been fully developed by us and we are now confident that we can design. In some areas we may have to optimise these things depending upon the feedback information from the industries. As far as the Cryogenic is concerned, till 1981-82 we have been manufacturing the equipment with the design and process know-how available from our collaborators. But in 1980-81 we signed a collaboration agreement and thereafter we have been successfully able to absorb the technical know-how and today we are confident to say that we can design the plants ourselves. As a matter of fact, 3-4 plants which we have now recently been constructed are of complete indigenous design. But we would not like to take too much risk of the equipment. So we got them vetted and there is not much change about them which the collaborators

have ever made. So, we are confident that we can get through this equipment without any problem. The third product is the steam generator. It is basically in collaboration with another public sector undertaking, Bharat Heavy Electricals. We are confident to say that we can design the boiler upto 200 tonnes. But because of the availability of orders only upto 100 tonnes, we are doing it. Beyond 100 tonnes, orders are not available. But upto 100 tonnes, we have been able to do that."

5.6 The Committee wanted to know whether in the areas of production and design, BHPV was dependent on imported technology or indigenous technology and processes had been developed. The Committee also wanted to know whether the technology being used was internationally competitive and upto date. In this connection the CMD stated in evidence :

"As per the present level of confidence, I would like to say that we are confident of handling all these equipment wherever we have signed agreements or collaborations earlier. Even if the collaboration period expires, we are confident that we can meet the requirements. As a matter of fact, there are a few developments which we have done based on the know-how collaboration of these equipment. For example, one of the equipments has been supplied by us to the Department of Atomic Energy recently. It may be the technology that we have got 10 years ago but still we have been doing it. But unless we work economically we will not be competitive in the market compared to any manufacturer outside the country. So, we are trying to develop our own technology so that we can be competitive. That is why in the process of development, a prototype of multi-layer vessel is being fabricated, even though it will cost a little bit money. It is because otherwise in that particular field, we are likely to be completely out of the picture. In order to avoid that situation we have taken up developments and we are confident that we can handle completely 100% equipment in the process plant area except very high pressure heaters for hydro cracking process. In cryogenics, except a few critical areas like hydrogen for which we do not have know-how because we did not think it necessary at that time, may be in the future course of time, it may be necessary for us to get into that particular area—other areas like air separation plant, nitrogen washing plant, purge gas recovery for fertilizer plant are all in our field and we are absolutely confident to handle them. As far as

boilers are concerned, up to the capacity 100 to 150 tonnes per hour there is no difficulty. But apart from that we have also gone into joint working into the waste heat recovery system. Even though it is not covered by collaboration agreement, we have quoted along with big outside supplier for waste heat recovery system and the order is now under execution. So we will be able to gain a lot more experience even in waste heat steam generator. But in the process plant field, even though we have gained a lot of experience in the manufacture of equipment we would like to be the leaders in the engineering field also and we would like to start developing systems because in the system engineering, we are still not able to independently work. Of course, in a few areas, we are doing it well. But that does not satisfy us and we can not say that we have achieved the objective in the system engineering set-up."

5.7 In reply to a question whether the technologies obtained from abroad were upto date the witness stated :—

"About technological information and what we got through various collaborations, I agree that they have been very old technology. It was nearly 8 or 10 years ago. We have not signed any collaboration agreement for process equipment in the later part of the history of the company. But in the areas where we have gone into for new collaboration in the years 1981-82 and 1982-83, two collaboration agreements and one was for process know-how from L' Air Liquide of France and other for atmospheric storage tanks with BSL of France. It is one of the best technologies in the world and we have mastered the technology and in the process, we have been able to compete in the international tenders for Indian projects. And I am very proud to say that we have not lost even a single tender in the international tenders for Indian projects. Whenever we have quoted with L'Air Liquide technology for the Indian projects we have not lost even one single tender for the last 4 years. In the cryogenics area, we entered into an agreement with L' Air Liquide of France in 1982. It is one of the latest technologies and we have entered into a collaboration with M/s. BSL France for Storage systems and that is for storage at minus 180 deg. In the process plant we had collaboration 8—10 years ago. Based on that we developed our own technology. May be it is not the optimum one, but we are trying to make it more optimal to derive the maximum benefit out of that."

5.8 The Committee enquired whether the R&D in BHPV was working on the development of various processes to make them upto date and internationally competitive. In reply the CMD stated :

“Our R & D are working on the development of various manufacturing process to improve the overall productivity and reduce the cycle time. As far as the equipment is concerned our engineers are doing very well. Our problems are going to be in the areas of system engineering for which we do not have enough know-how in the company. We are associating in certain areas, Engineers (I) Ltd., PDIL, FACT etc. wherever possible, but there are certain areas like ONGC gas collection units, gas and oil separation units where there is no know-how available. In these areas from case to case we try to tie up with one of the leading consultants outside.”

5.9 In a note furnished at the instance of the Committee, it has been stated that :

“The R & D Division of BHPV, which was established during the year 1975, is also helping in improving the manufacturing/fabrication processes for the existing products and also working on technologies for development of new products etc. The development of manufacturing technology for the Trays used in the Tonnage Oxygen Plants development of technology for the fabrication of Diesel Exhaust Manifolds, development of Oil Separators for fired tubes etc. have resulted in an import substitution to the extent of Rs. 150 lakhs approximately. Similarly, development of some of the new products like 68 Kg Chlorine Containers, 160 Lit. capacity Super-insulated containers, Super-insulated piping and technology like Cupronickel cladding, welding and overlaying of Monel resulted in improvement of the turnover by Rs. 100 lakhs. To keep pace with the new technological changes and different Standards and codes, BHPV has become a Member of various Engineering Institutions like HTFFS, UK etc. The literature published by these Institutions is considered invaluable. BHPV attained a number of International reconditions in the Quality field like ASME Certificate (U, U2 R and S Stamps), Lloyds Class I Certificate etc. These reflect the calibre and competence of BHPV for fabrication of Quality products to International standards needed for process industries.”

5.10 The Committee enquired whether BHPV have executed any job on the basis of self-developed designs and if so what percentage of the total jobs do they constitute. In a note the Company has stated :

"BHPV has executed a number of products on self-developed design and the details of the same are as follows :

- (i) Large-sized Pressure Vessels, Column with alloy steel and non-ferrous metal and stainless steel Heat Exchangers and other equipment with exotic metals like Titanium, Zirconium etc. However, these are still required to be optimised and oriented towards systems and sub-systems. Accordingly, efforts are being made in this direction.
- (ii) In the Horton Sphere manufacture, erection and stress relieving of large-sized spheres upto 17 M. diametre.
- (iii) Transfer of know-how for design and manufacture of Pressure Vessels, Heat Exchangers and Columns for ENCC, Algeria.
- (iv) Development of manufacturing technology for equipment with exotic metals like Titanium, Zirconium, etc. This enabled BHPV to enter into Titanium Air Bottle manufacturing and some of the special equipment for strategic sector.

The details regarding the percentage of the jobs executed on the basis of self-developed designs to the total production for the year 1985-86 are given hereunder :

Description	Percentage to Production of 1985-86
1. Special Steel Equipment	3.78%
2. Horton Spheres	6.41%
3. Defence Jobs	0.50%
4. Consultancy	1.31%

5.11 The Committee have been informed that the total engineering & R & D expenditure on account of personal payment alone will be about Rs. one crore per year. It has also been stated that BHPV has received a letter from the Govt. that they must use as many technical Institutes as possible for development apart from their own R&D and they must aim to reach an expenditure of about 5%. The Committee asked whether

the results of technological innovations developed by R & D had been evaluated and quantified. In a note, the Company has stated :

“The R & D programmes are divided into 3 groups viz.,

- (1) Improving of the technological processes for the existing products;
- (2) Developing new technologies both for the products already manufactured and the new products needed for the market;
- (3) The long-term development programmes keeping in view the market requirement for the future business.

In respect of (1), various technologies developed are already put to use and no quantification has been done. In respect of (2), the quantification has been done as given below :

- (a) The development of manufacturing technology for trays used in the Tonnage Oxygen Plants, Development of technology for the fabrication of Exhaust Manifolds, Development of Oil Separators for finned tubes, Development of Vacuum insulated piping etc., resulted in an import substitution to the extent of Rs. 150 lakhs approximately so far.
- (b) Development of some of the new processes/components like 68 Kg Chlorine Containers, 160 Lit. capacity super-insulated containers, super insulating piping cupronickel cladding technology, welding and overlaying of monel etc. resulted in improvement of the turnover by about Rs. 100 lakhs.
- (c) Development Stress Relieving Technology including the related system and equipment. We have saved approximately Rs. 20 lakhs in foreign exchange.
- (d) We have also developed Technology for Strategic Sector for which quantification has been made.

In respect of (3), we intend doing quantification as and when the product finds market.”

5.12 The Committee enquired whether the expenditure and effort so far taken on R&D was adequate to achieve the goal of self-reliance as laid down in the corporate objectives. In a note it has been stated :

“As may be seen from the list of projects completed, the concentration was mainly to develop new processes and to bridge technological gaps required to meet the latest technology. Since

D&D efforts are continuous, it can not be stated that self-reliance has been achieved."

5.13 The Committee find that BHPV had set up a R&D Division as far back as in 1975 mainly with the objective of developing manufacturing technologies, to improve the process designs and to bridge the technological gaps. As on date the R&D Division has 21 executives, 5 supervisory personnel and 19 workmen. It has been stated that upto the end of March, 1986, an amount of Rs. 225.29 lakhs had been spent on R&D programmes. An estimated outlay of Rs. 684.91 lakhs has been provided during the VII plan period for taking up new products/processes which have commercial applications. When the Committee enquired whether the expenditure and effort so far taken on R&D was adequate to achieve the goal of self-reliance as laid down in the corporate objectives, it was stated that since R&D efforts are continuous it can not be stated that self-reliance has been achieved.

5.14 The Committee have been informed that the total engineering and R&D expenditure on account of personnel payment alone will be about Rs. one crore per year. As large amounts are being spent on R&D activities, it is imperative that the results of the technological innovations made and processes developed by R&D are properly evaluated and quantified. The Committee therefore feel that it would be in the fitness of things that the performance of the R&D Division is subjected to a scrutiny by an independent body of experts to make an assessment as to how far the benefits of R&D efforts have been commensurate with the expenditure incurred thereon.

5.15 The Committee find that BHPV's dependence on foreign collaborations has not ended. As a matter of fact whenever some new product is taken up BHPV has been entering into agreements for the supply of technical documentation concerning the specific product/equipment. For the process equipments, BHPV had various collaboration agreements at the time of its inception. In the years 1981-82 and 1982-83, BHPV has entered into fresh agreements with L'Air Liquide of France and BSL of France for cryogenics and atmospheric storage tanks respectively. The Committee have been informed that the undertaking was now proposing to go into the areas of system engineering for which there is not enough know-how and the undertaking may have to seek the help of a collaborator. If these trends continue, BHPV's dependence on foreign technology will never come to an end and the possibility of self-reliance in technology will never be realised. It is significant to note that the percentage of jobs executed by BHPV on the basis of self-developed designs is very small in the context of the total production of the undertaking. The Committee feel that the aim of any R&D effort should be

that the undertaking is enabled to assimilate various technologies obtained from foreign collaborators and is in a position to develop its own systems and processes for new products. The Committee trusts that BHPV will strive to ensure that when the present set of collaborations come to an end it would not be necessary to renew them.

CHAPTER VI

MATERIAL MANAGEMENT & INVENTORY CONTROL

The following table gives details of the inventory at BHPV *vis-a-vis* BPE norms for the last 3 years i.e. from 1983-84 to 1985-86 :

	1983-84			1984-85			1985-86		
	Inventory held	Inventory to be held as per BPE norms	Excess	Inventory held	Inventory to be held as per BPE norms	Excess	Inventory held	Inventory to be held as per BPE norms	Excess
Raw material and Components :									
(a) Imported	855.28	958.14	—	3565.63	622.14	2943.49	2088.93	1836.39	252.5
(b) Indigenous	586.14	203.76	279.52	1072.51	611.01	461.50	1136.75	485.01	651.7
Stores, spares & tools etc. :									
(a) Imported	129.85	66.24	63.61	107.65	31.49	76.16	92.00	59.60	32.4
(b) Indigenous	208.55	100.98	107.57	260.16	138.83	121.33	253.04	175.07	77.9
TOTAL	1779.82	1329.12	450.70	5005.95	1403.47	3602.48	3570.72	2556.07	1014.6

6.2 It will be seen from the above that the inventory in excess of the norms to the extent of Rs. 450.70 lakhs in 1983-84, Rs. 3602.48 lakhs in 1984-85 and Rs. 1014.65 lakhs in 1985-86 was being maintained by BHPV.

6.3 It is also seen from the Annual Report of the Company for the year 1985-86 that the total inventories held by the Company at the end of the last 3 years were as under :

<i>Year</i>	<i>Amount (in lakhs)</i>
1983-84	6144.61
1984-85	7242.11
1985-86	5586.70

The total inventory held includes non-moving inventory for more than 3 years of Rs. 284.39 lakhs in 1983-84, Rs. 200.78 lakhs in 1984-85 and Rs. 170.79 lakhs in 1985-86.

Asked, why had the Company procured inventory in excess of the norms fixed by BPE, the Company stated in a written note :

- “(a) BHPV being a job manufacturing unit undertaking fabrication of equipment against specific customer orders, procurement of raw material is closely tied up with the inflow of orders. In most of the cases, procurement of material has to be done with detailed technical delivery conditions to be followed by the manufacturing mills to suit the specific customer requirements. In view of the above, bulk of the raw material inventory is being regulated in accordance with the orderbook position. Further, consequent on taking up some of the recent orders on the basis of system sales, inventory of Bought-out components has also increased considerably.
- (b) BHPV received an important order from Visakhapatnam Steel Project for supply of 3 Nos. 500 TPD Air & Gas Separation Plants valuing Rs. 96 crores. Consequent on deferment of delivery schedules by the customer, many of the Bought-out components procured against this order could not be despatched to customer and retained as inventory.”

6.4 Expressing its inability to adhere to BPE's norms for holding of inventory, the Company explained the position as under :

“BPE suggested certain norms for holding of inventory in terms of which 6 months holding was suggested in the case of indigen-

ous raw material against 12 months for imported raw material. However, in actual practice, it was observed that longer lead times were required for procurement of indigenous steel material due to heavy demand with limited allocations by SAIL."

6.5 The Committee observed that material management should be very efficient and Company should know future requirements. Replying to this observation of the Committee, the Chairman and Managing Director of BHPV said during his evidence :

"As far as materials are concerned, we are not in a position to take advance action. Only after we get the order, designs are finalised; then we indent for the material. We do borrow material from customers wherever possible and then replace them subsequently. But in certain cases we have to wait for the materials to arrive and then feed into the shop. Some of the procedure are so difficult we are not able to get the material faster to meet our delivery commitments."

6.6 The Committee pointed out that on the one side the Company says that material is not available while on the other side looking at inventory, it is found that material held both indigenous and imported is in excess than BPE's norms. In this context the witness said :

"Suppose I need one tonne of certain special material. No rolling manufacturer ever accepts my order for one tonne of material. We have no option but to buy the minimum quantity acceptable to him. Otherwise we will not get material at all. So we may get 2 tonnes. We use one tonne. We keep one tonne extra. There are some areas where I cannot use it. I have to depend upon the incoming material. This sort of a situation is very common. We always try to save time by using as much as possible from the available stocks. Otherwise we have to wait for raw material to come from abroad. Take the case of stainless steel, alloy steel, etc. These are imported. We know there is lot of difficulty. Even the deliveries get affected not because of our inefficiency but because of the cumbersome and long drawn procedures and we are unable to solve this."

6.7 Referring to indigenous raw material, the witness continued :

"We try our best to identify whether we can order in some bulk quantities but not been successful. The Company at one point of time tried to identify the material and rationalise this thing. There was bulk quantities and there was difficulty because of high inventory build up and these could not be used for other things. Some how we managed to come out of this situation. We did not want to get into the same situation."

6.8 The Committee noted that not only the inventory holding was on the highers side but even the finished stock as detailed under, got prepared as far back as February, 1980 was laying in Company's stores.

Month	Description	Value	Reason
2/1980	Digester . . .	5,48,000	This work order was cancelled in the year 1980.
1/1985	Pipe bends .	1,05,800	Customer has not lifted the material.
3/1983	IC-Piping . .	29,800	Orders cancelled by customers.
6/1984	Drying bottle . .	66,900	Damaged stores
6/1984	Vaporisers . . .	20,100	Damaged stores.

6.9 When the Ministry was asked whether it reviewed the position of excess/surplus inventories in the Company and suggested any measures to reduce them. The Ministry replied in a written note :

"There are some reasons on account of which inventory has to be kept at a high level. Firstly, the procurement of material has to be done with detailed technical delivery conditions to be followed by the manufacturing mills to suit the specific customer requirements. Secondly, taking up of some orders on the basis of system sales, inventory of bought-out components increases considerably. Thirdly, the delivery schedules are sometimes deferred at the instance of the customer. In such cases, bought-out components are not despatched to the customer and retained as inventory.

Periodical reports are being called for by the Ministry from time to time to review the excess/surplus inventory. While drawing the annual plans each year, this review is made and the company is asked to review the inventory position on quarterly basis regularly."

In a note the Company has stated :—

"Following actions are being taken for controlling the excess inventory :

1. Periodic exercises to review the surplus/non-moving inventory are being made. Task force groups have been constituted to study the possible alternative uses in regard to surplus/non-moving stocks.
2. Commercial group has been regularly followed with customer for getting the despatch clearances to transport some of the bought-out components and the finished goods.

3. Despatch programmes are drawn and weekly despatch meetings are being held for bringing down the finished goods inventory."

Surplus and non-moving stores

6.10 The value of surplus and non-moving stores as on 31st March, 1986 was Rs. 416.10 lakhs (including surplus stores of Rs. 95.92 lakhs). Audit has informed that a review of non-moving stores (each item worth Rs. 1.00 lakh and above) held in stock showed that 38,623 Kg. of carbon steel plates (value Rs. 5.25 lakhs) were imported against specific sale orders after completion of which the material has been lying in stock since March, 1976. Similarly 76 tonnes of stainless steel bends flanges etc. (value Rs. 8.75 lakhs) bought before August, 1976 against specific requirements remain unutilised.

6.11 The Company informed the Audit in September, 1983 that bought out components and spares do not have general use and efforts are being made to identify suitable requirements in which these could be used when new orders are received; for raw materials, efforts are also being made to identify the items which have alternative use.

6.12 The Committee wanted to know the steps taken by the Company to utilise/dispose of the surplus/non-moving stores. CMD, BHPV replied during evidence :—

"Material stocks are periodically reviewed and identified into non-moving items, slow moving items etc. Even if it is a slow moving item we do not dispose it off. We keep it. It is cheaper to keep it rather to go in for the market; it is cheaper to keep it with us even with the inventory cost involved. So we keep it. If it is a totally non-moving item, what we do is this : We circulate this item to other public sector undertakings in order to find out whether they require it or not. We find out whether they can make use of. If it cannot be made use of, periodically we call for the tender and try to dispose it off."

Regarding surplus stores, the witness said :

"We have created a task force which consists of engineering group, materials group and technology group. These three groups are there. These three of them sit together and they try to identify as to where these materials can be used; how they can be used in the new designs and so on whatever is being developed, to the extent possible. They make use of it in the new designs if possible. If really it cannot be used, the Committee recommends action for disposal. At that time we take disposal action"

About non-moving items, he added :—

“On non-moving items we have got a regular group to analyse. They analyse the utility etc. of those things. Wherever it is not possible to use anything, we try to dispose of it.”

6.13 The Company explained the steps taken to utilise/dispose off the surplus/non-moving stores :

- (i) Task force groups have been constituted to analyse possible alternative uses of the surplus/non-moving inventory;
- (ii) Items identified for disposal were circulated to other Public Sector Undertakings and actions are taken to dispose off the same by public auctions wherever necessary.

One officer has been identified exclusively to interact with various Departments to find alternative uses for non-moving materials. Positive results could be obtained by this exercise.”

Off-cuts

6.14 The off-cuts arise when regular plates are cut. Some of these off-cuts form part of non-moving stock. A study of the arising of off-cuts and their utilisation in manufacture during 1980-81 to 1985-86 revealed the following position :—

Year	(In tonnes)				
	Opening Balance	Off-cuts during the year	Total	Off-cuts utilised during the year	Closing Balance
1980-81	727.48	204.06	931.54	270.40	661.14
1981-82	661.14	452.17	1113.31	351.36	761.95
1982-83	761.95	210.99	972.94	117.44	855.50
1983-84	855.50	1599.38	2454.88	1022.30	1432.58
1984-85	1432.58	1111.60	2544.38	1131.38	1413.00
1985-86	1413.00	803.00	2216.00	934.00 (Provisional)	1282.00

The off-cuts are valued at rates applicable to regular plates for purposes of arriving at the value of inventories.

6.15 It is observed from the above position that closing balance of offcuts has been increasing year after year upto 1983-84. Though the Company has utilised substantial stock during the last three years yet no success seems to have been achieved in passing of this stock to other Public Sector Undertakings as Company is stated to have planned.

6.16. The Committee find that the total inventories held by BHPV at the end of the last 3 years amounted to Rs. 6144.61 lakhs, Rs. 7242.11 lakhs and Rs. 5586.70 lakhs respectively. Considering the total annual turnover of about Rs. 91 crores in 1985-86, the Committee find that the level of inventory holdings is on the high side. Not only the levels of inventory holdings are very high, the total holdings are much in excess of the various norms laid down by the BPE. It is seen that inventory in excess of the norms to the extent of Rs. 450.70 lakhs in 1983-84, Rs. 3602.48 lakhs in 1984-85 and Rs. 1014.65 lakhs in 1985-86 was being maintained by BHPV. This is a serious matter and undoubtedly calls for intensification of efforts for bringing it down to a reasonable level in the shortest possible time. The Committee would like to be informed about the concrete steps taken in this direction.

6.17 Apart from excessive inventories, some items of finished stock of substantial value have been lying in company's stores. Furthermore the value of surplus and non-moving stores as on 31st March, 1986 was as high as 416.10 lakhs (including surplus stores of Rs. 95.92 lakhs). Yet another item of inventory being accumulated from year to year is the arising of off-cuts, which are valued at rates applicable to regular plates for purposes of arriving at the value of inventories. Task Force Groups have reportedly been constituted to identify the surplus inventory and to study possible alternative uses of surplus/non-moving stocks. Apparently these efforts have not brought about commensurate results. The Committee desire that more vigorous efforts are needed to streamline the system of material management in BHPV.

CHAPTER VII

WORKING RESULTS & FINANCIAL PERFORMANCE

The working results of the Company for the last 3 years ending 31st March, 1986, as per Annual Report for 1985-86, are as under :—

(Rs. in lakhs)

	1983-84	1984-85	1985-86
Profit for the year .	406.15	979.02	880.38
Add/Deduct prior period adjustments	38.50	(—)87.40	30.07
Profit before tax .	444.65	891.62	910.45
Less : Provision for tax	—	34.00	335.17
Profit after tax	444.65	857.62	575.28

7.2 It is seen that during the year 1985-86 the Company's working resulted in a profit (before tax) of Rs. 910.45 lakhs (including prior period adjustments) as against the profit of Rs. 891.62 lakhs in 1984-85 and Rs. 444.65 lakhs in 1983-84. However, there was a cumulative liability of Rs. 844.25 lakhs on account of Penal Interest (Rs. 190.08 lakhs) and Interest on interest (Rs. 654.17 lakhs) on Government Loans upto 31st March, 1986, against which an amount of Rs. 181.42 lakhs has been provided for. In case, the balance liability of Rs. 662.83 lakhs (Penal Interest Rs. 190.08 lakhs and interest on interest Rs. 472.75 lakhs) is also provided in the Accounts, the General Reserve would have been Rs. 120.99 lakhs as against Rs. 783.82 lakhs shown in the accounts.

7.3 Giving details of the financial performance of the Company, the CMD informed the Committee during evidence :—

“The Company incurred losses upto the year 1978-79 which accumulated to Rs. 13.03 crores. However, with certain financial relief for three years i.e. from 1978-79 to 1980-81, the estimation has gradually changed thereafter and in particular during the last three years the Company could not only wipe off its past accumulated losses, but could appropriate about Rs. 2.5 crores towards the General Reserve Fund in the year 1984-85. The provisional operating results for the year 1985-86 indicate a net profit of Rs. 9.3 crores before tax which would further

improve cumulative profitability position of the Company. The finished production has also reached an all time high record of Rs. 91.34 crores in 1985-86 as against Rs. 32.98 crores during 1981-82. By the end of the Seventh Plan i.e. by 1989-90, the Company with set goals expects to reach a level of Rs. 140 crores turnover."

7.4 The Audit Report brings out that the accumulated loss upto 31st March 1979 worked out to Rs. 1302.78 lakhs. From 1979-80 the Company earned profits and accumulated loss to end of 1983-84 came down to Rs. 609.33 lakhs as against the paid up capital of Rs. 1731.28 lakhs as on that date. It has been pointed out that the cumulative loss of Rs. 609.33 lakhs would go up further, if penal interest amounting to Rs. 537.56 lakhs payable to the Government for belated repayment of loan instalments, not provided for in the accounts, is also taken into account.

7.5 The Committee desired to know the steps taken by the Company to improve the profitability and the results achieved in this respect. In a note, the Company have stated :—

"As a result of undertaking many diversification schemes, improving productivity, reducing procurement lead time, reduction in production cycle time etc., the Company could considerably improve its profit position particularly during the last three years, as could be seen from data given below :—

(Rs. in Lakhs)

Year	Net profit before tax	Tax	Net profit after tax	Accumulated profits (+)/ Losses (—) at the end of the year
1983-84 . . .	444.64	Nil	444.64	— 609.32
1984-85 . . .	891.62	34.00	857.62	+ 248.29
1985-86 . . .	910.45	335.17	575.28	+ 823.57

Thus, the Company has a reserve of Rs. 823.57 lakhs as at the end of March 1986.

Consequently, the Net Worth (i.e., Paid Up Capital Plus Reserves less intangible assets) of the Company has increased from 52.09 lakhs in 1979-80 in the first year of making profits to Rs. 2751 lakhs as at the end of March, 1986."

7.6 Asked whether the penal interest of Rs. 537.56 lakhs has been paid by the Company or has it been waived by the Government, the Company stated :

"The estimated total liability on account of penal interest and interest on outstanding interest charges on Government loans upto 31-3-1986 amounts to Rs. 844.25 lakhs (Penal interest Rs. 190.08 lakhs and interest on interest Rs. 654.17 lakhs) against which an amount of Rs.181.42 lakhs has been provided for in the accounts. No provision has been made in the Accounts for the balance amount of Rs. 662.83 lakhs (Penal interest Rs. 190.08 lakhs and interest on interest Rs. 472.75 lakhs) as the waiver of penal interest and interest on interest on Government Loans, is under consideration of the Government."

7.7 The question of granting moratorium on repayment of outstanding term loans and waiver of penal interest as also the reorganisation of the capital structure of the Company has been considered from time to time. In this context, the Company has stated :

"Keeping in view the payments already made to the Government upto the year 1985-86, the earlier proposal of the Company for rescheduling of outstanding loans and liquidating liability of interest on interest etc. has been submitted to the Government in May 1986 envisaging the following :

- (i) Government loans of Rs. 1241 lakhs outstanding as on 31-3-1985 are to be consolidated and the repayment of the same to be rescheduled for payment in 5 years commencing from 1988-89.
- (ii) Penal interest on the delayed payment of loan instalments and interest charges to be waived by the Government.
- (iii) To liquidate the liability for interest on interest in a period of two years. Out of the total amount of Rs. 654 lakhs, liability has been set up in the accounts to the extent of Rs. 181 lakhs upto 1985-86. For balance amount of Rs. 473 lakhs, the liability will be set up in the accounts on cash basis in the respective years of payment.

Although the above proposals were submitted by the Company to the Government, efforts are still being made to obtain Government sanction for waiver of both interest on interest on Government loans and penal interest, which would greatly help current operating results of the Company. The final decision in this regard is awaited from the Government."

In this connection the Ministry have informed as under :

"The Company paid the normal accumulated interest in 1985-86 and again applied for waiver of interest on interest and penal

interest. This request, considered in consultation with the Ministry of Finance, was not acceded to because the Company not only continued to make profits but also wiped off accumulated losses. It was felt that such a Company could pay interest on interest as well as penal interest."

7.8 Referring to the question of waiver of interest. Secretary, Ministry of Industry stated in evidence :

"Over a period of time, there was an accumulated loss in the company. By better functioning, efficiency and productivity, the company has been able to wipe out these accumulations in 1984-85. It shows the health of the Company. The point made by us, internally and within the Government in consultation with various departments, was that interest upon interest or penal interest are areas where there could be a waiver. On outstanding loans, there can be re-scheduling. The Company felt that Government would be able to give some relief. But unfortunately, in the inter-Ministry deliberations it has not been possible for us to get this done, but we have not given up hope, because we feel this company does deserve support in terms of re-scheduling of loans and some relief on interest upon interest and penal interest. We will take it up once again."

7.9 The Committee observed that as a matter of policy wherever penal interest is charged, in subsequent years some kind of relief should be given to the Companies, so that they get an incentive to do better work and put in more efforts to achieve efficiency. To this suggestion, the witness responded :

"Certainly, some relief does need to be given. But in priorities, where there are some extremely bad cases, cash loss and problems even in making payment of salaries, there is a problem. In such cases, Government tries to help them out."

7.10 It is gratifying to note that BHPV, which had accumulated losses of the order of Rs. 1302.78 lakhs upto 31st March, 1979 has been able to show profits from 1979-80 onwards. Against an undistinguished performance profile for a very long period, the Company has made a steady and marked recovery culminating in very impressive performance during the last 3 years ending 1985-86. In the process the Company has not only wiped off its past accumulated losses, but has also made appropriations towards General Reserve out of the undistributed profits. The Committee hope that BHPV will not only keep up its profit making performance but will also put in more extra efforts to improve its profitability.

7.11 From the working results of the Company for the last 3 years it is seen that the profit of Rs. 406.15 lakhs earned by the Company

in 1983-84 went up to Rs. 979.02 lakhs in 1984-85. In 1985-86, there is a drop in the profit and it has come down to 880.38 lakhs. This fall of about Rs. 100 lakhs in the profit during 1985-86 needs to be looked into for taking immediate remedial steps.

7.12 In the annual report for 1985-86, an amount of Rs. 783.82 lakhs is shown as General Reserve. It has been pointed out by Audit that there was a cumulative liability of Rs. 844.25 lakhs on account of penal interest (Rs. 190.08 lakhs) and interest on interest (Rs. 654.17 lakhs) on Government loans upto 31st March, 1986, against which an amount of Rs. 181.42 lakhs only has been provided for in the accounts. In case the balance liability of Rs. 662.83 lakhs (Penal interest Rs. 190.08 lakhs and interest on interest Rs. 472.75 lakhs) is also provided in the accounts, the General Reserve would have been only Rs. 120.99 lakhs as against Rs. 783.82 lakhs shown in the accounts. The Committee desire that such distortions in the accounts should be scrupulously avoided so that the accounts exhibit a faithful picture of the real state of affairs of the undertaking.

7.13 The Committee have been informed that the question of financial relief regarding waiver of penal interest and rescheduling of the outstanding loans of BHPV has been under the consideration of Government for quite some time. The Committee cannot but emphasise that a decision on the subject may be taken early and necessary approvals expedited. In this context the Committee would like to point out as a matter of policy, wherever penal interest is charged, some kind of relief should be given to the Undertakings in subsequent years so that they get an incentive to do better work and put in more efforts to improve their efficiency.

K. RAMAMURTHY,
Chairman
Committee on Public Undertakings

NEW DELHI;
April 3, 1987
Chaitra 13, 1909 (S)

APPENDIX

Statement of conclusions/Recommendations of the Committee on Public undertakings contained in the Report

Sl. No.	Reference to Para No. In the Report	Conclusions/Recommendations
1	2	3
1,	1-25 to 1-28	<p>Bharat Heavy Plate & Vessels Ltd. incorporated in June, 1966, was established with the sole objective to manufacture custom built process plant and equipment for use in the fertilizer, petroleum and allied industries, for which sustained demand was anticipated. At that time the annual gap between demand and supply of plate and vessels type equipment had been estimated at 72000 tonnes and keeping this in view, BHPV was established with an annual capacity of 23,210 tonnes. However, right from the inception the order book position of BHPV has been critical and the installed capacity of 23,210 tonnes, which was expected to meet only one third of the estimated gap, remained greatly underutilised, Obviously the projections of demand and requirements of process plant and equipment were not based on any scientific study but were more in the nature of perfunctory guess work. The Committee deprecate formulation of such faulty projections on the basis of which investment decisions have been taken.</p>
1.26		<p>The Committee have been informed that the capacity planned in BHPV was expected to take care of roughly one third of the requirements of the fertilizer plants in the country. But even before BHPV started its operations, the sizes of the fertilizer plants were changed from 450 tonnes per day plants to 950 tonnes per day plants without any interaction with BHPV. This change in the demand pattern created a technological gap and no wonder BHPV did not get any major orders from fertilizer plants, which were mostly lost to foreign competitors. It has been stated that BHPV had represented to the Ministry on several occasions regarding its low order book position from fertilizer sector and desired that certain equipments may be earmarked for fabrication indigenously. No tangible action seems to have been taken in this regard although the Ministry of Industry have informed that the matter was brought to the notice of the Ministry of Fertilizers and Chemicals.</p>

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The Committee are surprised at the argument advanced by the Ministry of Industry that "BHPV can neither decide nor dictate regarding the size of the refinery or the fertilizer plant which should be set up by its customers". It has to be pointed out that BHPV had been established primarily to cater to the requirements of the process plants of fertilizer & petroleum industries and thus the technologies acquired and the skills developed were related to the demand projections of the user Ministries. Therefore any switch over from one technology to another in the user organisation was bound to have repercussions on the operation of BHPV. This underscores the need for perspective planning and a meaningful coordination between the Ministry of industry and the user Departments. On the basis of the reviews of the working of some public undertakings like BHPV the Committee are constrained to conclude that capacities have been created at huge cost for meeting demand projections which were found highly inflated and unrealistic. Furthermore after the setting up of such undertakings, the administrative ministries concerned have not been able to provide the necessary protection needed to enable these undertakings to establish themselves fully and discharge the role assigned to them.

1.28

The Committee feel concerned to note that in view of the limited demand potential from the three core sectors i.e. fertilizer, petro-chemicals and refineries, BHPV was forced to take up new lines like cryogenics and steam boilers for possible optimum utilisation of the facilities created. With the various diversification schemes undertaken from time to time the Company has been able to improve its order book position to some extent but even then the capacity utilisation remains far below the rated capacity. It has been stated that the order book position in respect of the process plants continues to be critical as BHPV could secure only very few orders in respect of the new fertilizer plants being set up in the country. Orders are lost to foreign competitors as they are able to offer better delivery and price terms compared to indigenous manufacturers, who have necessarily to import their raw materials like steel from foreign countries. This involves longer procurement lead time and hence longer delivery schedules. In order to minimise competition from the foreign competitors,

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		<p>BHPV has approached the Government to formulate separate guidelines for earmarking some equipments for indigenous parties who have acquired necessary capabilities in their respective fields. This undoubtedly seems a workable proposition and the Committee desire that the Ministry of Industry should take it up urgently and if necessary, at the highest level. The Committee have no doubt that the acceptance of such a scheme will surely go a long way in better utilisation of the existing capacities set up with huge costs and consequential savings in precious foreign exchange.</p>
2.	1.29	<p>The Committee find that as the fertiliser industry is a priority sector, global tendering is permitted. However, because of stiff competition from foreign parties which are able to quote substantially low rates as well as better terms of delivery on account of ready availability of raw materials within their country, the inflow of orders to BHPV for the process equipment for fertilizers is adversely affected. In Committee's opinion the least that can be done in such cases is that the benefits of deemed exports should be extended to BHPV wherever global tenders are invited. The Committee would like the Ministry of Industry to take up the matter with the appropriate authorities.</p>
3.	1.30 & 1.31	<p>Yet another constraint faced by BHPV is in regard to procurement of raw material particularly imports of steel etc. through canalising agencies. The procedures involved in getting clearance for imports from indigenous angle are time consuming and the imports through the canalising agencies further adds to the problems of BHPV. The Secretary, Ministry of Industry was appreciative to the difficulties encountered by BHPV in this regard and had assured the Committee that the matter would be taken up with the appropriate Ministries. The Committee would like to be apprised of the outcome of these efforts within six months of the presentation of this Report.</p>
	1.31	<p>One of the objectives of BHPV is to develop export markets with a view to earning foreign exchange. Precious little has been done in this field. Since inception, BHPV has been able to secure only two export orders and no further orders have been received for hardware exports so far. Here again the Committee find that problem is the stiff competition from the foreign firms. The Committee</p>

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desire that more concerted efforts should be put in by BHPV to enter this area so that a break-through is achieved at the earliest.

4. 2.26 to 2.27

The Report of the collaborators for BHPV envisaged a capacity of 23,210 tonnes for various types of equipment with specific product-mix and plant and machinery was accordingly installed. As adequate orders were not forthcoming the Company revised the annual capacity of the factory to 18,000 tonnes in April, 1975. The Committee find that even the targets of production in terms of tonnage laid down each year from 1976-77 to 1983-84 were less than half the original capacity of 23,210 tonnes and were far below the rated capacity of 18,000 tonnes. The actual utilisation of capacity (based on the reduced capacity of 18,000 tonnes) ranged between 33.7% (1979-80) to 60.5% (1977-78) during these years and except in 1977-78, it was below 50% in all these years. From 1980-81 to 1985-86, the figures of capacity utilisation in terms of metric tonnes have been arrived at by applying an "intensity factor" but even then the utilisation factor ranges between 47.24% and 66.36%. This shows that even at present a good portion of the installed capacity remains unutilised. This in the view of the Committee is a matter of serious concern.

2.27

The Committee are surprised at the argument adduced by the Ministry that the primary consideration before the Company is not full capacity utilisation in the conventional sense but working profits in its operations. It has been further stated that if at a given point of time the Company finds that while making sophisticated and high value added items, capacity utilisation would be only 50% but profits would substantially increase then they would rather go for 50% utilisation of capacity in the conventional sense. It needs to be mentioned that BHPV is not going into other areas of production out of choice but is forced to diversify its productmix in order to improve its capacity utilisation. Unless the installed capacity of plant and machinery is made use of to the fullest extent possible, there will always remain an element of unproductive capital investment, which will affect the overall profitability of the Company. The Committee therefore feel that concerted efforts should be made for optimal utilisation of installed facilities.

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5.	2.28 to 2.29	<p>The original project report indicated a certain product profile and also specified the annual capacity in terms of each product by tonnage. It has been stated that as the product profile tilted towards greater sophistication and as the Company diversified into new fields, it was felt that while adding up the total production during the years the tonnage of more sophisticated products should be multiplied by an "intensity factor" as they required higher inputs of resources per tonne. Thus the production figures in terms of equivalent production were being declared from 1980-81 onwards. The Undertaking again changed the method of calculating the intensity factor for the years 1984-85 and 1985-86. This innovative method of calculating the actual production in terms of equivalent production was neither based on any scientific method like industrial engineering nor had it been approved either by the Board or the Government. It was obviously a device worked out by the management to present a better picture of the production performance of the Company. That the formula adopted by the management for the expression of physical production has not been considered satisfactory is clear from the fact that in the consecutive performance review meetings held in the Ministry the need for making a scientific assessment of the capacity to enable better evaluation of performance in physical terms has been emphasised time and again.</p> <p>According to the Company an exercise is now on for laying down norms for measurement of physical production. The Committee would like to emphasize that this exercise should be completed urgently so that suitable scientific computation formulae for assessing the actual capacity utilisation are devised.</p>
6.	2.30	<p>While explaining to Audit the reasons for the under utilisation of capacity, the Company had in 1983 listed out certain constraints which affected their performance. These <i>inter-alia</i> included absence of standard and repetitive jobs, low order book position, longer cycle time etc. When asked which of these problems still persisted, the Committee were informed that many of these factors were still having their influence on the production performance. The Committee desire that more concerted efforts should be made and</p>

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better strategies should be adopted to get over these difficulties so that the Undertaking's working becomes streamlined and the Undertaking is able to fulfil its corporate objective by achieving effective utilisation of the installed capacity.

7.

3.29

In the project report of Bharat Heavy Plate & Vessels, the collaborators had recommended for an annual production of 23210 tonnes, a total number of 2110 employees of which direct and indirect workers were to be about 38% and 32% respectively. The Undertaking, however, made its own assessment of man-power requirements from time to time viz. 2568 in October, 1967, 3568 in April, 1973 and 4149 in June, 1974 although the actual production was far below 23210 tonnes. From 1979-80 onwards indirect workers increased rapidly and in 1983-84, the ratio of indirect and direct workers stood at 114:100 as against the norm of 84:100 indicated by the collaborators. An analysis of the employees strength at the end of 1985-86 reveals that against the norm of 555 there were as many as 1253 supervisors and officers. The Committee are constrained to say that in the context of the largely underutilised capacity, more idle man-hours and very poor machine utilisation, substantial additions in manpower from time to time sound paradoxical. Since there has been no scientific evaluation of the manpower needs of the undertaking at any time, the Committee desire that for a proper and realistic appraisal of the manpower needs the undertaking may entrust this work to a recognised management institution like National Productivity Council. The Committee may be informed of the action taken in the matter.

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3.30

From the data made available to the Committee it is seen that the percentage of hours-booked-to-jobs to available hours has gradually gone up to reach 72.77% in 1985-86. However, the percentage of idle hours to net available hours which was 11% in 1979-80 rose to over 26% in 1985-86. Thus the labour utilisation in the year 1985-86 remained at about 73% with 5.70 lakhs unutilised labour hours, which constitute about 27% of the total available hours. This by no means can be considered to be a satisfactory state of affairs. The Committee have been informed that an analysis of the idle time indicates that about 83% of the idle hours are for want of work as the undertaking did not have sufficient orders for

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process plants and despite loading the shops with orders from other products there has been idle time for want of work. It is thus clear that the undertaking has more manpower than warranted by the needs of the work in hand. The matter needs to be looked into for taking corrective action either by diversion of manpower or finding out other jobs to reduce idle time.

9. 3.31

The Committee find that on the one hand the undertaking had staff strength much in excess of the originally envisaged strength and had high percentage of idle hours, on the other hand the undertaking had been making payments on account of overtime to its employees. Despite various controls, reportedly exercised by the undertaking, it had paid Rs. 20.67 lakhs in the form of overtime payments during the year 1985-86. The Committee do not find any justification of this payment in view of apparent over staffing of the undertaking. The Committee would urge that the undertaking should carefully examine this aspect in the context of its manpower and idle hours and deploy the available staff in shifts in such a manner that need to pay overtime does not arise. The Committee desire that power to sanction overtime should be given to fairly senior officers who should be accountable to Chief Executive of the organization on this score.

10. 3.32

The Committee find that with a view to improve productivity, the undertaking introduced in 1979 a production incentive scheme, which provided for incentive payments for all those who achieved 70 productive standard man-hours (PSMH) a month. In spite of payment of substantial amounts as incentive (Rs. 11.22 lakhs each in 1982-83 and 1983-84, Rs. 16.05 lakhs in 1984-85 and Rs. 22.28 lakhs in 1985-86) the total PSMH declined from 14.88 lakhs hours in 1980-81 to 12.12 lakhs hours in 1984-85, which figure increased to 14.19 lakh hours in 1985-86. In spite of the introduction of incentive payment the percentage of idlemen hours and idle machine hours, which were 11% and 43% respectively in 1979-80 rose to 26% and 73% respectively in 1985-86. From this the Committee get an inevitable impression that the introduction of the incentive scheme has not contributed to an increase in production as was expected. It is also seen that this scheme has not been reviewed on an annual basis by the Board or the management. The Committee desire

that a systematic review of the incentive scheme should be undertaken to see how far the extra expenditure involved has been commensurate with the improvement in productivity of men and machines at BHPV.

11. 4.13 to 4.14

The Committee note that the BHPV had originally installed plant and machinery at an estimated cost of Rs. 1061 lakhs for an annual production of 23,210 tonnes. It created additional facilities in 1976 at a cost of Rs. 20.70 lakhs for the revised product mix. Subsequently also substantial capital investment has been made in providing balancing facilities for the production of specialised products. During the years 1983-84 to 1985-86 additional investment to the extent of Rs. 644.64 lakhs has reportedly been added to the plant and machinery. At the end of March, 1986, the gross value of plant and machinery installed by BHPV amounted to Rs. 2311.69 lakhs against the original estimate of Rs. 1061 lakhs. Thus even though the production capacity of the Company has been reduced from 23,210 tonnes to 18,000 tonnes, there have been substantial additions to the plant and machinery.

4.14 With the overall utilisation factor of the plant ranging between 50 and 60 percent only, a major portion of the installed capacity in machines has remained unutilised or underutilised. From the information made available to the Committee it is seen that the percentage of idle machine hours to available machine hours was as high as 73.25% in 1985-86 and this figure was never less than 66.8% during the last 5 years. Such large scale idleness of the machines should necessarily be a cause for serious concern both to the undertaking as well as to the Ministry of Industry. The Committee desire that suitable corrective measures, both short-term and long term, should be taken urgently to ensure that the idle and underutilised machines are put to maximum productive use.

12. 4.15

The Committee have been informed that apart from auxiliary equipment such as cranes etc., 73 machines for aiding the manufacture of equipment at BHPV have been installed. Out of these 75 machines valuing Rs. 667.48 lakhs had been procured from outside the country. Depending on the cost these have been categorised as High Cost and Low Cost machines. It is seen that 11 machines including 3 High Cost machines have not been used at all. In respect of 79

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machines (including 13 High Cost Machines) utilisation factor ranges between 1% and 44% and there are 83 machines, which are stated to be fully utilised but their utilisation factor ranges between 3% and 91%. This presents a very dismal picture and calls for immediate remedial steps. Not only the huge capital involved in the purchase of these machines is blocked without any return, avoidable expenditure is incurred on their servicing and maintenance. It also results in misutilisation of the precious space. The Committee, therefore, recommend that the machines not being utilised should be disposed of immediately in whatever manner possible. Possibility of using these machines in other public sector undertakings may be explored and if there are no takers there, these may be put on sale to private users. A fresh exercise may be made to identify such of the sparingly used machines which can be dispensed with in the interest of economy. These may also be disposed of at the earliest. The Committee would expect to be apprised about the concrete action taken in this regard within six months.

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and
5.14

The Committee find that BHPV had set up a R&D Division as far back as in 1975 mainly with the objective of developing manufacturing technologies, to improve the process designs and to bridge the technological gaps. As on date the R&D Division has 21 executives, 5 supervisory personnel and 19 workmen. It has been stated that upto the end of March, 1986, an amount of Rs. 225.29 lakhs had been spent on R&D programmes. An estimated outlay of Rs. 684.91 lakhs has been provided during the VII plan period for taking up new products/processes which have commercial applications. When the Committee enquired whether the expenditure and effort so far taken on R&D was adequate to achieve the goal of self-reliance as laid down in the corporate objectives, it was stated that since R&D efforts are continuous it cannot be stated that self-reliance has been achieved.

5.14

The Committee have been informed that the total engineering and R&D expenditure on account of personnel payment alone will be about Rs. one crore per year. As large amounts are being spent on R&D activities, it is imperative that the results of the technological innovations made and processes developed by R&D are properly evaluated and quantified. The Committee therefore feel that it would be in the fitness of

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things that the performance of the R&D Division is subjected to a scrutiny by an independent body of experts to make an assessment as to how far the benefits of R&D efforts have been commensurate with the expenditure incurred thereon.

14.

5.15

The Committee find that BHPV's dependence on foreign collaborations has not ended. As a matter of fact whenever some new product is taken up BHPV has been entering into agreements for the supply of technical documentation concerning the specific product/equipment. For the process equipments, BHPV had various collaboration agreements at the time of its inception. In the years 1981-82 and 1982-83, BHPV has entered into fresh agreements with L'Air Liquide of France and BSL of France for cryogenics and atmospheric storage tanks respectively. The Committee have been informed that the undertaking was now proposing to go into the areas of system engineering for which there is not enough know-how and the undertaking may have to seek the help of a collaborator. If these trends continue, BHPV's dependence on foreign technology will never come to an end and the possibility of self-reliance in technology will never be realised. It is significant to note that the percentage of jobs executed by BHPV on the basis of self-developed designs is very small in the context of the total production of the undertaking. The Committee feel that the aim of any R&D effort should be that the undertaking is enabled to assimilate various technologies obtained from foreign collaborators and is in a position to develop its own system & processes for new products. The Committee trust that BHPV will strive to ensure that when the present set of collaborations come to an end it would not be necessary to renew them.

15.

6.16 The Committee find that the total inventories held by BHPV at the end of the last 3 years amounted to Rs. 6144.01 lakhs, Rs. 7242.11 lakhs and Rs. 5586.70 lakhs respectively. Considering the total annual turnover of about Rs. 91 crores in 1985-86, the Committee find that the level of inventory holdings is on the high side. Not only the levels of inventory holdings are very high, the total holdings are much in excess of the various norms laid down by the BPE. It is seen that inventory in excess of the norms to the extent of Rs. 450.70 lakhs in 1983-84, Rs. 3602.48 lakhs in 1984-85 and Rs. 1014.65 lakhs in 1985-86 was being maintained by

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		<p>BHPV. This is a serious matter and undoubtedly calls for intensification of efforts for bringing it down to a reasonable level in the shortest possible time. The Committee would like to be informed about the concrete steps taken in this direction.</p>
16.	6.17	<p>Apart from excessive inventories, some items of finished stock of substantial value have been lying in company's stores. Furthermore the value of surplus and non-moving stores as on 31st March, 1986 was as high as 416.10 lakhs (including surplus stores of Rs. 95.92 lakhs). Yet another item of inventory being accumulated from year to year is the arising of off-cuts, which are valued at rates applicable to regular plates for purposes of arriving at the value of inventories. Task Force Groups have reportedly been constituted to identify the surplus inventory and to study possible alternative uses of surplus/non-moving stocks. Apparently these efforts have not brought about commensurate results. The Committee desire that more vigorous efforts are needed to streamline the system of material management in BHPV.</p>
17.	7.10	<p>It is gratifying to note that BHPV, which had accumulated losses of the order of Rs. 1302.78 lakhs upto 31st March, 1979 has been able to show profits from 1979-80 onwards. Against an undistinguished performance profile for a very long period, the Company has made a steady and marked recovery culminating in very impressive performance during the last 3 years ending 1985-86. In the process the Company has not only wiped off its past accumulated losses, but has also made appropriations towards General Reserve out of the undistributed profits. The Committee hope that BHPV will not only keep up its profit making performance but will also put in more extra efforts to improve its profitability.</p>
18.	7.11	<p>From the working results of the Company for the last 3 years it is seen that the profit of Rs. 406.15 lakhs earned by the Company in 1983-84 went up to Rs. 979.02 lakhs in 1984-85. In 1985-86, there is a drop in the profit and it has come down to 880.38 lakhs. This fall of about Rs. 100 lakhs in the profit during 1985-86 needs to be looked into for taking immediate remedial steps.</p>
19.	7.12	<p>In the annual report for 1985-86, an amount of Rs. 783.82 lakhs is shown as General Reserve. It has been pointed out by Audit that there was a cumulative liability of Rs. 844.25</p>

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lakhs on account of penal interest (Rs. 190.08 lakhs) and interest on interest (Rs. 654.17 lakhs) on Government loans upto 31st March, 1986, against which an amount of Rs. 181.42 lakhs only has been provided for in the accounts. In case the balance liability of Rs. 662.83 lakhs (Penal interest Rs. 190.08 lakhs and interest on interest Rs. 472.75 lakhs) is also provided in the accounts, the General Reserve would have been only Rs. 120.99 lakhs as against Rs. 783.82 lakhs shown in the accounts. The Committee desire that such distortions in the accounts should be scrupulously avoided so that the accounts exhibit a faithful picture of the real state of affairs of the undertaking.

20.

7.13

The Committee have been informed that the question of financial relief regarding waiver of penal interest and rescheduling of the outstanding loans of BHPV has been under the consideration of Government for quite some time. The Committee cannot but emphasise that a decision on the subject may be taken early and necessary approvals expedited. In this context the Committee would like to point out as a matter of policy, wherever penal interest is charged, some kind of relief should be given to the Undertakings in subsequent years so that they get an incentive to do better work and put in more efforts to improve their efficiency.

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