COMMITTEE ON PUBLIC UNDERTAKINGS

(THIRD LOK SABHA)

THIRTIETH REPORT

BHILAI STEEL PLANT OF HINDUSTAN STEEL LIMITED

(MINISTRY OF IRON AND STEEL)

LOK SABHA SECRETARIAT
NEW DELHI
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9	33	4	cuse	case
10	37	2nd table	Heading	Travancore Cochin Chemicals, Udyogamandal.
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"	"	last	qualify	quality
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34	S.No	8 from below	-	Transfer '18'and '63' from last line against this line.
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C O R R I G E N D A

THIRTIETH REPORT OF THE COMMITTEE ON PUBLIC UNDERTAKINGS ON BHILAI STEEL PLANT OF HINDUSTAN STEEL LIMITED.

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Page	Para	Line	For	Read
6	18	12	'500'	'5000'
8	22	6	'once'	'Once'
8	23	7	'Complev'	'Complex'
8	25	11	'Russian'	'Russians'
9	27	4	'mililon'	'million'
58	Cols 1 and 2	9	Insert '4' and '22'	respectively
59	Col. 3(Sl.No.7)	5	'locomoitves'	'locomotives'
59	Col. 3(Sl.No. 8)	7	'accoaut'	'accpint'
59	Col. 3(Sl. No.8)	9	'vehy'	'very'
59	Col. 3(Sl. No.9)	10	'have	'have been'
59	-do-	10&11	delete	'had there been no rejections'
60	Col. 3 (Sl.No.10)	4-5	delete	'price paid to it'
61	Col. 3 (Sl.No.15)	3-4	'negligable'	'negligible'
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(THIRD LOK SABHA)

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**Elected w.e.f. 23-2-1966 in the vacancies caused by appointment of Shri P. Govinda Menon as Minister and resignation of Shri Harish Chandra Mathur.

***Ceased to be a member of the Committee on retirement from Rajya Sabha w.e.f. 2nd April, 1966.

INTRODUCTION

I, the Chairman, Committee on Public Undertakings having been authorised by the Committee to submit the Report on their behalf, present this Thirtieth Report on Bhilai Steel Plant of Hindustan Steel Limited.

2. This report is based on the examination of the working of the Bhilai Steel Plant upto the year ending 31st March, 1965. The Committee took the evidence of the representatives of Hindustan Steel Limited on the 16th, 17th and 19th February, 1966 and of the representatives of the Ministry of Iron and Steel on the 24th February, 1966. The report was adopted by the Committee on the 16th April, 1966.

3. The Committee wish to express their thanks to the Officers of the Ministry of Iron and Steel and the Hindustan Steel Ltd., for placing before them the material and information that they wanted in connection with their examination. They also wish to express their thanks to the non-official organisations/individuals who, on request from the Committee, furnished their views on the working of the Steel Plant.

4. The Committee also place on record their appreciation of the assistance rendered to them in connection with the examination of Audit Paras pertaining to the Bhilai Steel Plant, by the Comptroller and Auditor General of India.

NEW DELHI;
April 21, 1966.
Vaisakha 1, 1888 (*S*).

D. N. TIWARY
Chairman,
Committee on Public Undertakings.

I

HISTORICAL BACKGROUND

Soviet Collaboration.

Towards the middle of 1954, the Soviet Government showed interest in collaborating for the setting up of a steel plant. On 10th September, 1954 the Production Committee of the Cabinet decided that an invitation should be extended to the Soviet Government to send a team of specialists to India to study the question of setting up a steel plant with their assistance.

2. The Russian team, after visiting all the principal sites proposed for location of the steel works, submitted a Preliminary Project Report on the 13th January, 1955. The Report was examined by Indian experts and was approved by the Cabinet on the 27th January, 1955. An inter-governmental agreement was entered into on the 2nd February, 1955 with the U.S.S.R. for setting up a modern integrated iron and steel plant at Bhilai, with an initial capacity of 1 million tonne of ingots or 7·5 lakh tonnes of finished rolled steel products, including rails and sleepers, and 3 lakh tonnes of foundry pig iron.

3. The agreement provided that the U.S.S.R. Government would be responsible for the preparation of a Detailed Project Report and working drawings. They were to supply the plant, machinery and equipment and provide technical supervision for the construction, erection, installation and commissioning of the plant, machinery and equipment. They were also responsible for their performance according to the stated capacities. The agreement also stipulated that Indian personnel would be trained in the U.S.S.R. and that all possible assistance would be given in training of personnel in India. Under the agreement, the Government of India assumed the responsibility for the preparation of the plant site, construction of buildings, roads, railway tracks, planning and construction of township, procurement of construction materials, etc.

Submission and approval of Detailed Project Report.

4. The Detailed Project Report of the Plant was submitted by the Russians on the 9th December, 1955. A team of Soviet Experts came to India to explain the Report and to clarify the technical points. The report was examined by Government with the assistance of their consulting engineers (M/s. International Construction Co.) and a team of Indian experts from TISCO, IISCO, the Iron and Steel Controller, and the Central Water and Power Commission. Acceptance of the D.P.R. was com-

municated to the U.S.S.R. on the 8th March, 1956. The order for the Plant was placed in April, 1956.

5. Initially all matters relating to the setting up of the Plant were handled by the Government of India directly. On 1st April, 1957, the execution and operation of the Plant was entrusted to the Hindustan Steel Limited.

II

CONSTRUCTION AND COMMISSIONING

6. A statement showing the tentative schedule as envisaged in the Detailed Project Report, the revised schedule, and actual dates of commissioning of various units of the one million tonne plant is given in Appendix I.

7. It will be seen from the statement that a number of units, viz. Coke Oven Batteries Nos. 2 and 3; Sintering Machines Nos. 1 & 2; Blast Furnace No. 3; Open Hearth Furnaces Nos. 2, 4, 5 and 6, and Merchant Mill were completed more than a year after the tentative dates envisaged in the Detailed Project Report. Delay of 17 and 22 months occurred in the case of Rail and Structural Mills respectively.

8. The major reasons assigned for delay in the commissioning of the various units are— **Reasons for delays.**

(i) civil engineering works were started only in early 1957 as the approximate volumes of work for tendering were made available by the Soviet Experts only in the middle of 1956;

(ii) in the absence of suitable contractual agencies, all the electrical instrumentation, 90 per cent of mechanical erection, 50 per cent of refractory works, 30 per cent structural erection and the entire railways were to be done departmentally. The departmental engineers were fresh, the workers were untrained and the labour force unskilled;

(iii) non-receipt of equipment and other materials at site;

(iv) scarcity of raw materials due to non-availability of wagons; and

(v) difficulty in obtaining matching steel which delayed the fabrication of steel structures and non-standard equipment.

9. The Committee were informed that a Project Report by outside agencies, by its very nature, is not final. Several points are to be tied up before it is implemented. Assumptions made by designers have to be tested on the spot and changed according to requirements. The targets given in the Project Report are tentative which is a part of the exercise of designing. It is, therefore, not correct

to use it as a bench-mark for assessing loss in production though it is valuable for drawing lessons and reducing time where possible. The time taken for consideration of a first project report of its kind as that of a steel plant, is naturally longer due to lack of experience. Similarly the time taken on execution, which depends on timely receipt of drawings, fabricated structures and equipment, will not be the same as in the Project Report. The assumptions regarding indigenous availability of supplies cannot be accurate. There is, therefore, always a programmed date of commissioning as distinguished from the date given in the Project Report. This is a better bench-mark for comparative purposes.

10. The Committee, however, notice that the revised schedule for commissioning, which was more liberal than the schedule in the project report could also not be adhered to and further delays ranging between 1 to 7 months occurred in most of the units. The over all delay in the integrated working of the plant was over one year.

11. The estimated loss in production due to the delays in the completion of the various units has been indicated in the statement at Appendix I. According to these figures the loss of production of gross coke was 10 lakh tonnes, ingot steel 10.6 lakhs tonnes, and blooms 8.5 lakhs tonnes. The Plant has stated that it was a theoretical loss, as many factors like availability of raw materials, stores and supplies on time have been assumed. Be that as it may, the "losses" are substantial and give an indication of the effect of delays in the completion of the Plant.

12. *While some delays could be expected owing to the lack of experience in setting up a complex project like a steel plant, the Committee feel that delays of over a year can hardly be justified.*

III

EXPANSION OF PLANT

A. Expansion to 2·5 Million Tonnes

Agreement with Consultants for expansion.

13. The Bhilai Steel Plant is presently being expanded to a production capacity of 2.5 million tonnes of ingots per annum. In pursuance of the Agreement between the Government of India and the Government of the U.S.S.R. dated the 12th September, 1959 and the additional Agreement dated the 12th February, 1960, a contract was concluded on the 16th August, 1960 between V/O Tyazhpromexport and the Hindustan Steel Ltd. for the preparation of Detailed Project Report for the expansion of the Bhilai Steel Plant to a rated capacity of 2.5 million tonnes of ingot steel per annum. The D.P.R. was submitted by the U.S.S.R. authorities in June, 1961. It was examined by a Technical Committee and a Memorandum of Acceptance was drawn up by H.S.L. and referred to Government for approval on the 4th November, 1961. Government's approval of the D.P.R. was communicated to H.S.L. on the 25th November, 1961. Orders for plant and equipment for expansion were placed in February, 1962.

Delays in Expansion.

14. According to the original schedule, the Plant expanded to 2.5 million tonne capacity, was expected to be commissioned by the end of 1965. However, upto November, 1965 only the following units could be commissioned:—

1. Coke Oven Battery No. 4.
2. Blast Furnace No. 4
3. Open Hearth Furnaces Nos. 7 & 8.
4. Blooming Mill—Soaking Pit Group Nos. 6 & 7.
5. Billet Mill—Cooling Beds
6. Merchant Mill—Reheating Furnace
7. Auxiliary Shops—Compressor Nos. 1 & 2.
8. Slag Processing Plant—Granulation Plant and Aggregate Crushing Plant.
9. Power and Blowing Station—Turbo Generator No. 3, Turbo Blower No. 5 & Boiler No. 4.

15. A statement, showing (i) original and revised (where fixed) schedules of commissioning in respect of the Units being set up in the expansion programme; (ii) actual dates of commissioning in regard to the Units completed upto November, 1965; and (iii) actual/anticipated delay in each case over the original schedule, is given at Appendix II.

16. It will be seen from the statement that delays ranging from 4 to 17 months occurred in respect of units completed up to November, 1965. In respect of the units yet to be completed, delays ranging from 5 to 23 months were anticipated according to the Schedule of Commissioning revised in August, 1965.

Reasons for delays.

17. The reasons assigned for these delays are: (i) late receipt of civil, structural, mechanical and electrical drawings from the USSR, (ii) delay due to non-availability of tested quality plates and matching structural steel, (iii) late receipt of fabricated structures from the USSR and from indigenous fabricators, (iv) delay in receipt of mechanical and electrical equipment both from the USSR and from indigenous suppliers, and finally (v) delay in construction work.

18. The General Manager of the Plant stated during evidence that the difficulty in getting the proper type of steel delayed the construction schedule by 8 months to a year. In most cases the delay has either been in moving of the steel or the structures being not supplied in time. The Hindustan Steel Ltd. booked the necessary capacity of the Indian structural firms as far back as 1960. The work was to be done in 1962/1963. Unfortunately the steel was not available in time. In 1963, out of the 30,000 tonnes of steel required 14,000 tonnes had not been moved to the proper places. On a complete review of the position it was found that it would not be possible to obtain about 500 tonnes of steel within the country. This quantity had, therefore, to be imported from Russia. It took some time to obtain the sanction from the Government of India for importing this steel. Difficulty was also experienced in obtaining Russian stores in time. The Indian fabricators too were also not able to supply the structures in time. When asked as to why compensation was not claimed for late delivery of equipment and structures, it was stated that there was no penalty clause in the contract with the Russians. In so far as the Indian fabricators were concerned, the fault was that of the Plant in not being able to supply them the steel in time.

19. *The Committee do not consider that the difficulties mentioned in paras* 17 & 18 *were unsurmountable and beyond the control of the Plant authorities. Difficulties like delays in obtaining steel and having to import it as a last resort had arisen in the construction of the one million tonne plant also. It thus appears that the experience of the one million tonne stage was not utilised to avoid similar difficulties during the present expansion. It is clear that the anticipation of steel supplies was incorrect. That this should happen when the production capacity of each*

steel plant was known, when most of the steel required was produced in the Plants of the Hindustan Steel Limited, and when all the steel required is distributed by the H.S.L. to the various consumers on the basis of fixed priorities, is a matter of serious concern. It was only in 1963, *when all the steel should have reached the fabricators that it was discovered that* 5000 *tonnes of steel would not be available in the country and would have to be imported. The Committee regret to observe that there was lack of foresight and vigilance in this regard. It is hoped that greater care would be taken in this matter in the next expansion programme.*

Procedural delays.

20. One matter which was raised during the discussion on this subject was the procedural delay which took place between the decision to import 5000 tonnes of steel and the actual issue of sanction for this purpose by Government. The General Manager of the Bhilai Steel Plant during the course of his evidence stated as follows:—

> "It is all really a question of short circuiting some of the number of people involved. Twelve different organisations used to consider this issue. It would come from the Plant to the Iron and Steel Controller; and from him it will go to the Steel Ministry; from there to the Min. of Finance (Expenditure); from there to the Min. of Economic Affairs; from there to the Min. of Industry in the Development Wing side for clearance and lastly it comes to import Licensing side for import licence. If anywhere a brake is put in and one week is taken to decide about a very simple proposal there will be delay to that extent. The real need is to cut down the number of people involved on this".

21. *The Committee have already referred to the need for simplifying the procedure relating to sanctioning of foreign exchange and import licences for public undertakings in para* *127 *of their Thirteenth Report on Management and Administration of Public Undertakings. They suggest that the procedure in this regard should be simplified.*

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*"127. *It has not been possible for the Committee to examine the procedure regarding sanctioning of foreign exchange but from the above instances it is obvious that the existing procedure has hindered the timely completion of projects. The Committee understand that the procedure for release of foreign exchange has been enquired into by the V. K. R. V. Rao Committee on the Utilisation of Foreign Aid and the Study Team on the working of the D.G.T.D. The Committee trust that in the light of the recommendations made by these bodies the procedure relating to the sanction of foreign exchange for the public undertakings will be simplified."*

Revision of schedules.

22. It has to be mentioned in this connection that the original schedule of commissioning of the 2.5 M.T. expansion was revised 6 times within a period of 2 years, *Realistic estimation of completion targets is essential but such revisions should not be made everytime a delay occurs. once a time-schedule is prepared, all efforts should be made to fulfil the targets in time.*

B. Expansion to 3·5 Million tonnes

Installatoin of 6th Blas Furnace.

23. Proposals for further expansion of the Bhilai Steel Plant to approximately 3.5 million tonnes of ingot steel per annum capacity during the Fourth Plan period are in hand. With a view to immediately increasing the production of foundry grade pig iron, the sixth Blast Furnace and ancillary facilities are being installed earlier. The Detailed Project Report of the 6th Blast Furnace complev has already been prepared. Government has fixed the third quarter of 1967 as the date for the completion of this work. During evidence, the representative of the Plant informed the Committee that the foundation work was nearing completion and if the equipment came in time, it would be possible to commission the Blast Furnace towards the end of 1967.

Delay in the preparation of D. P. R. for Steel-making facilities.

24. Except for the sixth Blast Furnace complex, the details of the further expansion of the Bhilai Steel Plant in the Fourth Five Year Plan period have not been finalised. It is observed in the case of the Durgapur and the Rourkela Steel Plants that these details have been finalised. The Detailed Project Report in the case of the Durgapur Steel Plant has been completed.

25. Two reasons have been advanced for the delay in the preparation of Detailed Project Report of the Bhilai Steel Plant. The first is that Government was not sure of the source from which credit would be obtained for the expansion. When this matter was settled, negotiations were started with the U.S.S.R. regarding the nature and scope of expansion. The Design Cell of the Bhilai Steel Plant had prepared a feasibility report on the expansion and this was under discussion with the Russians. The second reason for the delay is that there were several points of disagreement with the Russian mainly about the size of the various units included in the expansion proposals of the Design Cell due to limitation of credit. Not much progress had been made in the matter of finalising the details of the Project.

26. *The Committee hope that it will be possible to finalise the details at an early date and take up the preparation of the Detailed Project Report without further delay. The Bhilai Steel Plant is already behind the other two Plants in this matter and the Committee hope that it will make all efforts to regain the lost time.*

27. The percentages of indigenous content of equipment, structures and refractories as has been achieved at 1 M.T. stage and as will be achieved at 2.5 and 3.5 mililon tonne stages are given below— Indigenous content at 3·5 M. T. Stage.

Item	1 M.T. stage	2·5 M.T. stage	3·5 M.T. stage
Equipment	12%	23%	58%
Structures	22%	29%	100%
Refractories	7%	44%	88%

28. The Committee were informed that by the end of the Fifth Plan it would be possible to manufacture most of the equipment required for steel plants indigenously. It might still be necessary to use a certain quantity of foreign components which were either of a very sophisticated nature or of such infrequent use that it would not be worth while manufacturing them in the country.

29. *The Committee think that the progress in developing manufacturing capacity in respect of equipment has been rather slow. To achieve indigenous equipment, to the extent of 58 per cent at the 3.5 M.T. expansion stage is not satisfactory. The Committee hope that during the Fourth Plan period accelerated progress in this regard would be made. The object should be to set up a Steel Plant with wholly indigenous equipment and know-how.*

IV

PRODUCTION

A. Fall in Production

30. The following Table shows the actual production of the Plant during the years 1963-64 and 1964-65:—

(Figures in lakh tonnes)

Products	1963-64	Percentage of rated capacity	1964-65	Percentage of rated capacity
Hot metal	12·95	116·7	11·72	105
Steel Ingots	11·33	113·3	10·54	105·4
Ingots Rolled	11·21	112·1	11·38	113·8

31. It will be seen that the level of production of hot metal and steel ingots which was attained in 1963-64 could not be maintained in 1964-65. While the production of hot metal and steel ingots were 116.7 per cent and 113.3 per cent respectively of the rated capacity in 1963-64, it came down to 105 per cent and 105.4 per cent respectively in 1964-65.

Reasons for short fall.

32. The Committee were informed that the main reason for the shortfall was the fact that 1964-65 was the peak period for expansion of the Plant to 2.5 million tonne ingot capacity. Work in many Departments had either to be deliberately stopped or slowed down, to facilitate the progress of construction. The second main reason was inordinate strain on the internal transport system, which had to carry the load both of operation and construction besides circumlocutory movements necessitated by blocking of the shortest available routes.

33. So far as the latter reason is concerned, the Committee note that in 1964-65, the plant and machinery could not be utilized for the period indicated below due to shortage of raw materials arising from traffic bottlenecks.

Unit	No. of hours lost
(1) Sintering Plant	2022
(2) Blooming and Billet Mills	1971
(3) Merchant Mill	1110

Locomotives.

34. When the Committee asked for details of strain on the internal transport system, they were informed that the Plant purchased 37 Russian Diesel Locomotives during the one million tonne stage. These locomotives were found unsatisfactory and spare parts had constantly to be obtained from Russia for their repairs. The maintenance cost of these locomotives was also extremely high i.e. Rs. 80,000 per annum as compared to Rs. 13,000 per annum for other locomotives. The operational efficiency of these locomotives was also low. For the 2.5 M.T. expansion stage the Plant refused to purchase these locomotives. As the U.S.S.R. were giving credit for these locomotives, the choice was confined to countries approved by the Russians. Ultimately 19 locomotives were ordered from Czechoslovakia. The negotiations took some time and the locomotives arrived about a year after the requirement. These were assembled and made operational only by the end of 1965.

35. *It will be seen that production was affected during the expansion stage mainly due to late receipt of the locomotives. The Plant was aware that the Russian locomotives were ineffective and extremely expensive to maintain. Therefore, negotiations should have been carried out with the Russians from the beginning to find an alternative source for the locomotives. It is mainly due to failure to initiate timely action for the purchase of locomotives that the production suffered to that extent.*

36. The Committee were in this connection informed that the transport bottleneck would continue as long as the defects in the Russians locomotives are not rectified. It is understood that efforts are being made to replace the engines of these locomotives. *The Committee are unhappy with the present state of affairs both on account of the bottleneck which these locomotives are creating and on account of the very high cost of their maintenance. Both these factors are having an adverse effect on the cost of production and it is necessary to take urgent measures to rectify the situation. The Committee recommend that the efforts to replace the engines of these locomotives should be expedited. The Railway Board should also be consulted for expert advice on the subject if not already done.*

B. Rejections of rails

37. Of all the mills, the percentages of rejections in the Rails mill were the highest. The figure for the last 3 years are given below:—

Item.	1962-63		1963-64		1964-65	
	Rejections in tonnes.	Percentage of rejections.	Rejections in tonnes.	Percentage of rejections.	Rejections in tonnes.	Percentage of rejections.
Rails:						
(i) 90 lbs.	9,096	9.3	12995	10.2	8,586	12.4
(ii) 105 lbs.	17,878	12.1	16,276	14.6	23,564	16.3

38. It will be seen that the percentage of rejections both in respect of 90 lbs. and 105 lbs. rails have been increasing year by year. In the case of 90 lbs. rails though the production during 1964-65 was less than the earlier years, the percentage of rejections has increased. In the case of 105 lbs. rails, rejections increased from 12·1 per cent in 1962-63 to 16·3 per cent in 1964-65.

39. The rejections in 1964-65 were attributed to the following causes:—

(i) Scrappiness increased during the year because of changeover to Indian stoppers in the Blast Furnaces. A great deal of effort was made jointly with manufacturers to stabilise their quality but considerable leeway remains to be made.

(ii) Fluctuating gas supply leading to irregular heating at times due to expansion imbalances during 1964-65 which also affected steel quality.

(iii) Shortage of ingot moulds made it difficult to prepare them adequately or teeming according to strict technological requirements. The shortage resulted from imbalances due to delay in the expansion of the foundry and inability of Indian market to make adequate supplies.

(iv) About 30 persons attending to the open hearth furnaces were sent for training to Russia for the expansion stage and their place was taken by inexperienced workers. This led to inferior quality of rail steel being produced. These contributed to higher rejections.

40. The Committee were also informed that the specifications laid down by the Indian Railways were very rigid and what was put down as second class quality would be treated as first class even in U.S.S.S.R. The standards of the Indian Railways were more rigid than those prescribed by the American, British and Russian Railways.

41. The prices (excluding extras and taxes) for good and defective rails are as follows:— Loss suffered due to defective Rails.

Types of Rails	Quality of Rails		Price per tonne
90 lbs.	Tested	12	658
90 lbs.	Tested	18	653
90 lbs.	Untested		638
105 lbs.	Tested	12	688
105 lbs.	Tested	18	683
105 lbs.	Untested		528

42. Thus, while a tonne of defective 90 lbs. rails is sold at a loss of Rs. 20, the loss incurred on the sale of a tonne of defective 105 lbs. rails is as much as Rs. 160. Calculated on this basis, the loss suffered by the Plant on account of rejections comes to about Rs. 39·42 lakhs during 1964-65 alone.

43. The Plant authorities informed the Committee that according to the price formula the Plant breaks-even at about 81 per cent of standard and 19 per cent of sub-standard rails.

The production of sub-standard rails has been below 19 per cent during the last 3 years and viewed in this light, there had been no loss on the production of sub-standard rails.

44. The General Manager of the Bhilai Plant, however, admitted during evidence that the year 1964-65, was comparatively the worst period. Rejections had, however, come down to about 12 per cent in respect of 105 lbs. rails during 1965-66. He also hoped that by the end of 1965-66, the position would further improve because the quality of steel was now better.

45. *The Committee are glad to learn that the percentage of rejections will go down in* 1965-66. *They do not, however, appreciate the argument that because the production of sub-standard rails had been below* 19 *per cent during the last three years, therefore there was no loss on their pro-*

duction. Had there been no rejections, the net value of Rs. 39.42 lakhs calculated above would have been realised. Public Undertakings cannot be complacent about rejections or sub-standard products as costs of both material and labour are involved. Every effort should be made to avoid such a loss. In the opinion of the Committee a figure of 12 per cent rejections is on the high side, which should warrant a close scrutiny by the General Manager and the Head Office. They should take concrete measures to bring down this figure. The Committee also recommend that efforts should be made to obtain a better price for untested 105 lbs. rails.

C. Ammonium Sulphate

46. Ammonium Sulphate is produced by the Bhilai Steel Plant as a by-product. The production cost in 1964-65 was as follows:—

	Rs./Tonne
Ammonia . .	23·04
Sulphuric Acid	103·58
	126·62
Operating cost	37·38
Overheads . . .	8·93
Packing . .	15·71
Depreciation . . .	68·44
Total Cost	257·08

47. The Bhilai Steel Plant obtains a retention price of Rs. 246 per tonne of ammonium sulphate from the Fertilizer Pool of the Ministry of Food and Agriculture. As such, it loses Rs. 11·08 on every tonne of ammonium sulphate sold. As against the price of 246 per tonne paid to the Bhilai Steel Plant, the retention price paid to the Sindri Fertilizer Plant is Rs. 316 per tonne and that paid to FACT, Always is Rs. 356 per tonne. Asked how this difference arose, the Committee were informed that the prices paid to the Sindri Fertiliser Plant and FACT are based on the cost examination carried out by the Chief Cost Accounts Officer of the Ministry of Finance and includes a return of 10 per cent on capital employed. The price paid to the H.S.L. Steel Plants, however, is not based on any cost examination of their by-product. It was the

price paid to TISCO and IISCO where the following method was adopted:—

> "No separate cost determination for sulphate of Ammonia is made. While fixing up the retention price of steel, depreciation and return are taken overall on the gross block which includes also the block on sulphate of ammonia plant. In the process of fixing the retention price of steel, credit is given in the coke ovens cost sheet to the extent of the net sale price of sulphate of ammonia produced".

Since the Bhilai Steel Plant was obtaining only Rs. 246·00 per tonne, as against its cost of Rs. 257·08, the difference was in practice charged to the cost of steel making.

48. *The Committee feel that it is not proper to fix the price of ammonium sulphate produced by the Bhilai Steel Plant on par with that of TISCO and IISCO. The gross block per tonne of saleable steel in the case of TISCO and IISCO is much less than the corresponding figure relating to the HSL plants, as the private sector plants were constructed several years back when the cost was much less. The Committee understand that during the last 3 years, the Plant had approached the Government of India several times for a revision of the price of ammonium sulphate paid to it. The Chief Cost Accounts Officer had also been asked to examine the costs of the plant but he had not done so. The Committee recommend that this should be undertaken at an early date.*

D. Sales and Marketing

(i) *Pig Iron.*

49. The Committee found that the Bhilai Steel Plant had a stock of 35,200 tonnes of pig iron on the 30th September, 1965, as against orders upto 31,000 tonnes placed on them. The latest position was that they had a stock of 18,000 tonnes.

50. The General Manager, Bhilai Steel Plant, stated that there was no disposal problem regarding the foundry grade pig iron produced by one of the blast furnaces. But the pig iron produced by the other two blast furnaces, which was in excess of the requirements of the Steel Melting Shop, presented some difficulty as it had a lesser silicon content. He, however added that for a Plant which produced 40,000 tonnes of pig iron a month, a stock of 18,000 tonnes was not excessive.

51. The Committee, in this connection, note that 1,06,370 and 45,956 tonnes of pig iron were imported during 1964-65 and 1965-66 (upto November, 1965) respectively.

52. Asked for the reasons for importing pig iron when the steel mills were unable to sell what they produced, the Secretary of the Ministry of Iron & Steel, stated that the D.G.T.D. had estimated a demand of 2 million tonnes of pig iron a year. The Ministry placed this demand at 1·5 million tonnes. Production in the country was only 1·2 million tonnes. The gap was, therefore, of the order of 300,000 tonnes. Because of the serious shortage, Government allowed an import of 1,00,000 tonnes. Government however, found that even this quantity was difficult to sell which showed that the outcry in the press and elsewhere about shortage was not genuine. On the other hand because of delay in operating the 7th Open Hearth Furnace, the pig iron produced in the 4th Blast Furnace, which started working from December, 1964, also became available for sale. Then came the credit squeeze which again dried up the orders. Government, therefore, decontrolled pig iron in August, 1965 as a result of which the position slightly improved.

53. In a note furnished to the Committee by the Head Office, after the evidence, the position about pig iron for all the 3 Steel Plants has been explained as follows:—

> "The psychological lull that follows decontrol has affected pig iron also. Coupled with this is the recent increase in production of pig iron in HSL steel plants and the cut in the requirements of cast iron sleepers from Railways to the extent of nearly one lakh tonnes. These, added to the general decline in demand for iron and steel items as explained above, have greatly affected demand for pig iron with the result the off-take of pig iron even at the level at which it used to go previously has become slightly doubtful."

54. *It is evident from the observations of the Secretary, Ministry of Iron and Steel and the Head Office that declining demand for pig iron is going to present a problem. The Committee therefore recommend that Government should make a realistic survey of the demand in the country. That the estimate of demand prepared by the DGTD and the Ministry of Iron and Steel varied to the extent of 25 per cent and that even the lower estimates of the Ministry were higher than the off-take, indicates that there is no proper procedure for calculating the demand. Unless this is done on a scientific basis and the Government is able to know the exact demand for a particular item unnecessary imports might be made or the capacity in the Steel mills for the production of this item might be over or under estimated.*

55. As regards the off-take of pig iron with a lower silicon content which the Bhilai Steel Plant has been finding

difficult to sell, the Committee were informed that this grade of pig iron could be easily utilized by the foundries by addition of ferro-manganese or ferro-silicon, as the case may be, and that this could be achieved by making slight atlerations in the cupolas. The foundry industry were not accepting this grade of pig iron and were proclaiming shortages merely with the object of obtaining pig iron of their choice.

56. *If that is so, when the expansion of the steel Plants takes place, the problems of selling this grade of pig iron will also correspondingly increase. A quick market survey for its disposal at home and abroad should therefore be carried out.*

(ii) *Rails and Merchant products.*

57. The Committee were informed that the sales prospects in respect of the Merchant products included in the product-mix of the 2·5 million tonne stage of the Plant were not good. During 1966-67, the Plant might be able to get orders only for about 4,40,000 tonnes as against the rated capacity of 5,00,000 tonnes of Merchant Mill products. Some of the sections for which it is difficult to get orders are:—

(1) Rounds—40 mm, 45 mm, 50 mm & 56 mm;
(2) Channels—100/50;
(3) Angles—75/75 and 80/80;
(4) Flats—63 & 80 width, thickness 10, 12, 16, 18 and 80 width with the same thickness.

58. In regard to rails, the capacity of the Plant under the 2·5 million tonne expansion would be 5,00,000 tonnes. This capacity was fixed on the basis of the demand of rails in the country. The Committee were informed that there might be a temporary glut in rails produced at Bhilai, not because of excess production but because of curtailment of orders by the Railways. Due to lack of funds, the Railways would be able to place orders for heavy rails only for 200,000 tonnes as against capacity of 500,000 tonnes.

59. The cause of the slump in the market was attributed mainly to the Indo-Pakistan war which had resulted in a certain amount of dislocation in business and industry. For example, most of the merchant mill angles are used for electricity towers but as Zinc was not available for galvanising, the demand for these angles had gone down. It was hoped that with the situation becoming normal, the sale of these products will improve.

60. Asked if it was possible to roll products which were in short supply in lieu of those for which there was no

demand, the General Manager of the Plant stated that theoretically this would be possible. It would, however, not be possible to roll an uneconomic order for say, a few hundred tonnes. Similarly the product-mix had to be so balanced that the profits of the Plant had to be taken care of. There were more profitable and less profitable products. The balance had, therefore, to be maintained.

61. *Though the Secretary of the Ministry of Iron and Steel informed the Committee that this slump was a temporary phase, the Committee feel that it is necessary for the Government to study the demand position carefully before deciding the product-mix of the expanded Plants. There would be no purpose in rolling products in excess of the demand or for which there is no demand.*

62. The product-mix of the various steel plants under the expansion stages and that of Bokaro had been tentatively fixed on the basis of the recommendations of the Steering Group of Iron and Steel for the Fourth Five Year Plan appointed by Government. The Steering Group considered the various demand projections category-wise made by NCAER, DASTURCO and U.S. Steel etc. and the existing capacity in the country and worked out a product-mix to fill the gaps. The expansion of Bhilai to 3·5 M.T. in the Fourth Five Year Plan period had been discussed with the Russian Team. As a result of these discussions, it had been decided that the Bhilai Design Cell will undertake a techno-economic study to consider the pattern of the Bhilai Expansion. *The Committee desire that before taking a final decision on the products-mix of the steel plants, in the public sector including Bhilai, the demand for various products should be carefully studied.*

(iii) *Compensation paid for defective supplies.*

63. The adjustment made during the last 3 years as a result of acceptance of complaints of customers are as shown below:—

Year	Amount
	Rs.
1962-63	1,864
1963-64	9,265
1964-65	2,44,040

64. About 95 per cent of complaints pertain to despatch instructions, wrong loading and quality. Many of the complaints relating to quality are stated to arise from the

nature of the sale orders as only chemical composition is indicated and not the final physical characteristics of the steel required.

65. The Committee were informed that the total number of complaints were only 807 out of 15,647 sales orders executed or roughly 5·2 per cent. The Plant was working under the I.S.I. scheme and as required under that scheme adequate quality control was being exercised.

66. *There is a steep rise in compensation paid from Rs. 9265 in 1963-64 to Rs. 2.44 lakhs in 1964-65 even though it represents only a negligable fraction of 1 per cent of the total sales. There should be no complacency about this matter and efforts should be made to give a service free of complaint. As regards the reason that customers do not specify their requirements in detail resulting in wrong supplies, the Committee suggest that no supply should be effected unless the Plant is definite about the specifications required by the customer. The Sales Office should resolve all these matters and give clear instructions to the Plant. The Committee suggest that the question of giving facilities to the customers to inspect the goods before despatch might be examined.*

V

RAW MATERIALS

A. Variations in quality of coal

67. The Bhilai Steel Plant draws its requirements of raw coal from the Jharia Coal fields and of washed coal from the N.C.D.C. washery at Kargali and the H.S.L. washery at Dugda. Apart from the higher cost paid for coal mainly on account of the distance at which Bhilai is situated from the Coal fields, the Committee understand that the quality of coal is far from satisfactory. The ash content of the coal varies resulting in serious difficulties in the working of the coke ovens. The Plant had to change blends in the coke ovens about 30 times during the last 4 years. Apart from lower production, the ovens also got damaged as a result of abnormal variations. The variations in ash content were due to different seams of the various collieries and efforts made by the H.S.L. to take up this issue with the Collieries with the help of the Coal Controller, have not so far succeeded.

Coal blending equipment.

68. *It does not appear that this problem can be solved by negotiations with the Colleries. Installation of a blending equipment at the Plant seems to be the best solution. In the initial stages, the installation of the equipment was not looked upon with favour in view of the increase in the already high capital cost of the Plant. In view of the prevailing circumstances it might be examined if it would be in the interest of the Plant to instal a coal blending equipment.*

Selective crushing arrangement.

69. In this connection, the Committee note that the Central Fuel Research Institute has suggested installation of Selective Crushing arrangements which would enable production of strong coke in blends with weakly caking coals. The main advantages of selective crushing are:— (a) Conservation of good metallurgical coal, (b) Reduction in the coke consumption; and (c) uniformity in the coke charge.

70. The General Manager of the Plant stated during evidence that the Russians did not advocate selective crushing and they had no arrangement for it in Russia. Their point of view was that selective crushing was not a successful process. However, in other countries like France, they had developed the process and in the view of the French fuel experts the process worked successfully and had been found very beneficial. The Committee also learnt

that the technology in this regard had recently undergone an improvement and further, that it would be possible to manufacture about 60 per cent of the equipment of the Selective Crushing Plant in the country. The Board of the H.S.L. have accepted the efficacy of the system and have decided to try it out at Rourkela but only in the second expansion stage.

71. *The Committee hope that due consideration will be given to this matter and arrangements for selective crushing made at the Bhilai Steel Plant also.*

B. **Inadequate sintering capacity**

72. The advantage of sinter utilization lies primarily in: **Advantages of use of sinter.**

(i) Efficient utilization of huge quantities of metallurgical waste, converting them into good quality Blast Furnace charge material.

(ii) Lower usage of flux and metallurgical coke at the blast furnace by cutting down the Co_2 load of the furnace.

(iii) Increased productivity due to introduction of higher proportion of iron bearing material through the charge.

(iv) Better charge distribution and gas permeability of the charge leading to more uniform furnace operation.

73. According to the report of Technical Committee set up for raw materials preparation and technological improvements for improved iron production in blast furnaces, super-basic-fluxed sinter constituting 100 per cent of the burden is widely used in Blast Furnaces in the U.S.S.R. The utilization of super-basic-fluxed sinter burden even when it contains less iron content, has made it possible to reduce the coke consumption in the large sized blast furnaces (2000 M³) upto 550—570 Kg./tonne in the Soviet Union. In Japan, the proportion of sinter in the burden has recently sometimes exceeded 70 per cent. **Use of sinter in foreign countries.**

74. At Bhilai, two sintering belts of 50 M^2 sintering area each were provided in a single building in the million tonne integrated steel plant. Under the 2·5 million tonne expansion a third sintering belt of 50 m^2 sintering area has been provided in a new building, with provision for accommodation for the 4th belt. The capacity of the Sintering Plant under the 2·5 million tonne expansion is being increased from 1·0 million to 1·87 million tonnes per annum. One of the major additions recommended by Gipromez in their examination of the D.P.R. for coke and iron making facilities under the second expansion at Bhilai is that two additional sintering machines of 75 m^2 area each should be installed in the new building in addition to the 4th **Sinter capacity at Bhilai.**

Sintering Machine of 50 m^2 sintering area to be installed in the existing sinter building. The objectives behind this recommendation are: (i) utilization of fines available from the mines; and (ii) raising the sinter content of the blast furnace burden upto 60 per cent so as to increase the production of the furnaces. The H.S.L. forwarded their recommendation and the estimates to Government in October, 1965.

75. The Ministry examined the proposal and was convinced that the provision for two additional Sintering Machines at a cost of about Rs. 9·2 crores would be a welcome development. At present the proposal is under the consideration of Government.

76. The Committee were informed that the percentage of fines in the iron ore has been increasing. The original Project Report for 2·5 million tonne expansion was based on 37·5 per cent fines from Rajhara mines and 45 per cent from Dalli mines. Actually, it has been found that Rajhara also produced 45 per cent fines. In 1964-65 the actual percentage of fines was about 50 per cent which was said to be an unusually high figure. *In view of the high rate of fines in the ore adequate number of sintering machines will have to be provided at the Plant. The Committee hope that an early decision will be taken for providing two additional sintering plants, as recommended by Gipromez.*

C. Installation of Disiliconisation Plant

77. The quality of hot metal used for steel making at Bhilai and Durgapur during 1964-65 was as under:—

Particulars	Unit	Bhilai	Durgapur
1. Ingot steel production .	Tonne	1130600	1006236
2. Hot metal used for steel making . . .	„	874285	848196
3. Out of which :			
(*i*) Disiliconised metal	%		65·0
(*ii*) Mixer metal .	%	100·0	35·0
4. Average silicon content in:			
(*i*) Mixer metal	%	1·41	1·24
(*ii*) Disiliconisation metal .	%	..	0·79

78. It will be seen that at Bhilai mixer metal is used cent per cent because there is no disiliconisation plant at Bhilai. As against this, in Durgapur only 35 per cent of mixed metal is used, because the rest is disiliconized.

79. The Committee were informed that apart from the high rate of consumption of iron ore in open hearth furnaces, the quality of rails produced at Bhilai was adversely affected during 1964-65 due to high silicon content in the Blast Furnace metal. This also accelerated the wear and tear of refractories.

80. Explaining the reasons for not providing a disiliconisation unit at Bhilai, the General Manager of the Plant stated that if there was a plant for disiliconisation between the Blast Furnaces and the Steel Making Shop, some time would be spent there and the cycle would become a little longer. The Russians do not like this and put more faith in sizing of the materials, so that the production of the Blast Furnace itself is good. In their steel plants since they ensure that materials are properly sized they do not have any disiliconisation arrangement. The Committee were informed that the Bhilai Steel Plant had suggested to the Russians on various occasions that there should be a disiliconisation Plant at Bhilai.

81. In the lay-out for the 1 million tonne and 2·5 million tonne stages no provision has been made by the Russians for a disiliconisation plant, as in Durgapur. However, the Bhilai Steel Plant was in favour of a small number of ladles being disiliconised. According to the General Manager of the Bhilai Steel Plant, the disiliconisation plant, required for the purpose, could be fabricated by the Plant. The capital expenditure will be about Rs. 2·5 lakhs. According to the General Manager, the savings will be so much that the capital investment of about Rs. 2·5 lakhs on this plant will be paid back within a period of about 6 months.

82. *Considering the quantum of savings in the cost of production and the small capital investment involved, the Plant should have gone in for a disiliconisation plant earlier. If such a plant had been installed the rate of consumption of iron ore would have been reduced and the wear and tear of the refractories would have also gone down. The Committee recommend that the necessary plant should be fabricated and installed.*

D. Technological improvements

83. With the introduction of oil injection in Blast Furnaces, an oil to coke replacement ratio of 2 : 3 and a likely increase in productivity by 10-15 per cent is expected. With oxygen enrichment of blast in addition, the increase

Oil injection.

in productivity achieved in other countries has been upto 40 per cent. Oil injection was put to practical application in Japan in 1961 when it was established that an injection of 1 kg. would effect replacement of 1·2 to 1·7 kg of coke.

84. The progress in regard to introduction of oil injection in Blast Furnaces at Bhilai has been as follows. In the first quarter of 1963, the scheme of injection of pitch oil mixture was prepared by the Design Cell of the Bhilai Steel Plant and forwarded to Gipromez of the U.S.S.R. for their comments. A Project Report was prepared by the Russians and received from the U.S.S.R. on the 25th March, 1965. The Board of Directors considered the system of injection of fuel oil into the Blast Furnaces suggested in the Soviet Report and were of the view that the Russian design being costly, Bhilai should instal a system on the basis of Durgapur and T.I.S.C.O. design. The Board also desired that instead of installing these facilities in the second phase of Bhilai expansion, the Bhilai Steel Project should instal the system initially in the first phase itself and depending upon the results achieved and further developments in this regard, extend the scheme progressively to all the remaining furnaces. However, this was not introduced for the following reasons:—

(i) The requirement of oil for oil injection at Bhilai is estimated to be of the order of 270,000 tonnes per year. It is understood from the Ministry of Petroleum and Chemicals that throughout the 4th Plan period furnace oil remain a deficit product and the requirement of Bhilai will, therefore, have to be met by imports.

(ii) As oil injection at Durgapur Steel Plant has not proved economical, a Committee headed by Dr. B. N. Zherebin, the Soviet General Superintendent at Bhilai is studying in detail the effect of fuel oil injection and the report of this Committee is expected to be ready by the end of March, 1966. After the report has been considered and accepted, the work of the preparation of working drawings, procurement of equipment, etc. will be taken up. It is expected that fuel oil injection may be given effect to in Bhilai in the first quarter of 1967 provided arrangements are made for the supply of fuel oil.

85. The General Manager of the Bhilai Plant stated that so far as steel industry is concerned, it has now become an accepted axiom that oil injection is beneficial. According to him, with oil injection, it will be possible to bring down coke consumption at Bhilai by about 100 kgs.

per tonne of hot metal, but the foreign exchange for furnace oil was the major bottleneck holding up the introduction of the process. It may be mentioned here that Bhilai is located 700 km away from the coal washeries, with the result that the delivered cost of coal is very high.

86. *In the light of these factors the Committee hope that it would be possible for the Bhilai Steel Plant to instal the equipment for oil injection before long. The Oil and Natural Gas Commission should also take energetic steps to produce the required quantity of furnace oil in the country.*

E. Consumption of Refractories

87. Refractories are used in the construction of Coke Ovens, Blast Furnaces, and Open Hearth Furnaces of a Steel Plant. The table below indicates the consumption figures of refractories in the Bhilai Steel Plant during the years 1962-63, 1963-64 and 1964-65 togther with the break-up into the quantity procured indigenously and that imported:

(Unit—Tonne)

Year	Indigenous	Imported	Total
1962-63	33777	11356	45133
1963-64	32098	13249	45347
1964-65	37169	5453	42622

88. The Indian Refractory Makers Association, Calcutta, in a memorandum submitted to the Committee have stated that there has been considerable investment in the Refractory Plants in the private sector in renovating, modernising and setting up new Plants with a view to meet the refractory requirements of the country. Unfortunately, the public sector Steel Plants are importing coke oven silica bricks from abroad without justification. The Association has complained against insistance on short delivery periods. It suggests advance intimation of requirements so as to enable the industry to plan their production suitably. Another complaint made was that the public sector steel plants continue to require refractories manufactured to their specifications instead of using the specifications prescribed by Indian Standards Institution.

89.The representatives of the Plant did not agree with these statements of the Association. They informed the Committee that the refractory factories in the country

were not able to produce the quality of bricks required by the steel industry, specially of silica bricks. As regards specifications, the Plants followed those laid down by the manufacturers. If inferior quality refractories were used, the life of the equipment would be shortened.

90. While the Committee are unable to comment on the contention of the Association that all types of refractories can be manufactured in the country and the statement of the Plants that this is not correct, the Committee did find evidence that short delivery periods were prescribed by the Plants which the industry could not cope with. For example, enquiries were made from five firms by the H.S.L. (Bhilai Steel Plant) in December, 1965, if they could supply 8000 tonnes of coke oven silica bricks. The delivery period was 4/5 months. Two of firms stated that it would not be possible to effect deliveries within the stipulated period. Three firms sent in offers but the Bhilai Plant have stated that there is little hope that the entire quantity would be delivered by them within the stipulated period. The Committee found that though the quotations were received from the firms by 15th December, 1965, no decison had been taken in the matter till March, 1966.

91. *The Committee see no reason why the Bhilai Steel Plant cannot plan its requirements of refractories ahead of time specially since this is a recurring requirement. The Ministry of Iron and Steel have informed the Committee that it would be possible for the Refractory manufacturers to expand their capacities according to the needs of the steel plants by diversifying their existing licensed capacities for other types of refractories. The Committee have already recommended in their Twenty-ninth report on the Durgapur Steel Plant that encouragement should be given to the manufacturers of refractories in India to manufacture all the types required by the Steel Plants.*

92. *There is considerable force in the argument of the Association that the refractory industry is put to difficulties when each Plant lays down its own specifications which are quite different from those of the I.S.I. Economic production also becomes difficult when each Plant lays down its own specifications. The Committee recommend that the matter should be examined by a Technical Committee consisting of representatives of all the steel plants and the Indian Standards Institution. That Committee may study the specifications used by the various plants and evolve common standard specifications for adoption by all the Plants.*

F. Shortages of raw materials

Permissible losses.

93. The limit of normal shortages for raw materials has been fixed by Hindustan Steel Limited at 8 per cent of total receipts in respect of coal, 4 per cent in respect of

iron ore and 2 per cent in the case of other materials and such losses are automatically written off. In terms of value, these norms permit losses of major raw materials upto Rs. 80 lakhs to Rs. 1 crore in each Plant.

94. The losses at Bhilai have been below the prescribed limit in the case of almost all the raw materials except for iron ore. Percentages of actual variations in respect of iron ore during the years 1962-63, 1963-64 and 1964-65 are indicated below:

(In % of receipts)

Raw material	Normal permissible loss	Actual losses during		
		1962-63	1963-64	1964-65
Iron Ore				
(*a*) Lump	4	8·1	5·7	5·6
(*b*) Fines	4		1·5	4·0

It terms of money, the loss on iron ore during 1964-65 was Rs. 4·83 lakhs.

95. During the evidence the Committee were informed that in 1964-65 the proportion of fines in the iron ore increased to the extent of 50 per cent as against 40 per cent in 1963-64. When ore fines were despatched from Rajhara, the ferrous content was 50 per cent. By the time they arrived at Bhilai and were unloaded in the sintering plant, the ferrous content increased to 58 per cent, due to loss of moisture. This itself accounted for 4 per cent of the losses.

Inadequate weighing facilities.

96. The Committee understand that with a view to improve matters, the Head Office has been pursuing the matter jointly with the three Plants. At the latest meeting of the General Managers, it was agreed that the coal norm can be lowered to 5 per cent. But as far as iron ore is concerned, it appeared that the norm would have to be raised to 6 per cent in the case of fines and 5 per cent in the case of lumps. There was, however, difficulty in regard to weighing facilities at both ends. In January, 1966, Rourkela had issued orders for 100 per cent weighing for some important items and percentages varying from 25 to 50 for certain other items. This would be watched for a period of 6 to 8 months against the railway receipts

(which is the basis for payment) to see as to what was the degree of variation. Similar record was also kept in Bhilai for certain items for a percentage check. In six months time, they would be able to see whether there was any abnormality about the variation of loss and if so, what could be done about it.

Handling losses and pilferage.

97. *The Committee regret that these losses have been treated lightly and considered as inevitable. It is only from this year that a watch is being kept over them. The loss of Rs. 80 lakhs to 1 crore of raw materials in each Plant due to handling losses and pilferage cannot be ignored and every effort should be made to reduce them. Apart from the measures already taken, the Committee hope that precautions will be taken to prevent pilferage particularly from within the works. This matter should also form part of a periodical review by the Head Office and Government.*

VI

PLANT AND MACHINERY

A. **Blast Furnaces**

98. Out of the three Blast Furnaces of the 1 million tonne plant, two had been erected in 1959. The last one was erected in 1960. The top gear of these Blast Furnaces ought to have been changed in 1962. But this could not be done as (i) there was delay in ordering the equipment; and (ii) there was also delay in receipt of spare parts from the U.S.S.R. The equipment should have been ordered in 1961 (late) or 1962 (early) but were actually ordered in the middle of 1963, *i.e.* after a delay of more than 18 months. **Change of Top gear.**

99. Similarly, the relining of Furnaces ought to have been completed during 1964-65, but the vital equipment to carry out the repairs could be got in position from the U.S.S.R. only in September, 1964. The capital repairs had to be postponed further until the Fourth Blast Furnace was ready to supply hot metal. **Relining.**

100. Asked as to why the equipment for relining was not ordered earlier, the Committee were informed that it was on record that an indent for some equipment for relining of Blast Furnace No. 1 were initiated by then Superintendent, Blast Furnaces in October, 1962. However, it was not on record as to why enquiries were not made from the U.S.S.R. and contract completed. Perhaps, there was no approved programme for the relining of the Blast Furnaces.

101. The capital repairs of Blast Furnace No. 1 were eventually completed in May, 1965 while that of No. 3 in August, 1965. Furnace No. 2 was to be taken up for capital repairs towards the end of 1965. Thus, the capital repairs of the furnaces were delayed by about 2 years.

102. Delays in the changing of top gear and relining of the furnaces affected the working of the Plant adversely in the following manner:— **Effect of delays.**

(a) Overaged furnaces consumed comparatively more coke in 1964-65 than in 1963-64, due to gas leakage and other defects. The coke rate rose to 873 kg./tonne in 1964-65 as against 832 kg./tonne in 1963-64, *i.e.* an increase of 41 kg. per tonne of hot metal. The average cost of coal

also increased from Rs. 62·79 in 1963-64 to Rs. 65·70 per tonne. The net effect of these factors was an increase in the cost of hot metal from three old Blast Furnaces by about Rs. 14 per tonne as compared to 1963-64; and

(b) Leaking tops caused (i) a certain drop in production during the closing stages of 1964-65; and (ii) high silicon content in hot metal (making of rail steel with a higher silicon content in hot metal is very difficult) used in Open Hearth Furnaces. Thus, these delays affected adversely the economical working of the entire Plant.

Responsibility to be fixed.

103. *The Committtee regret to observe that the Plant did not obtain the necessary equipment for change of top gear and relining of blast furnaces in time. Investigation should be held into the causes of delay and responsibility fixed. With a view to avoid recurrence of mistakes of this nature in future, a long term programme for capital repairs should be drawn up and definite time schedule prescribed for the ordering of equipment, starting and completion of work etc.*

B. Purchase of Brick Making Machines

Para XII—8 (page 69) of Audit Report (Commercial), 1964

104. Audit in their Report for 1964 have stated that out of three End Delivery Brick Making Machines costing Rs. 54,000 purchased from the U.S.S.R. and received in January, 1958 one machine has not at all been used. The other two machines and another two Land Crete Brick-making machines, purchased in India at Rs. 6,500 each on grounds of urgency in December, 1957 were put to very little use during the last six years. The bricks manufactured in these machines were found to be brittle and of inferior quality, and in one case the cost of manufacture was comparatively high. Audit have also pointed out that the Financial Adviser & Chief Accounts Officer of the Plant had observed on 30th June, 1962 as follows:—

> "From what I can see, the conclusion seems to be unavoidable that there was not adequate justification for the purchase of these machines. The fact that they were not used after receipt corraborates this."

105. The Plant authorities stated that the purchases were made on the advice of the Soviet Specialists, who suggested that in view of the difficulty of obtaining bricks in neighbourhood of Bhilai, mechanical brick-making plant should be installed. It was later decided to give the civil works on contract and supply of bricks also formed a part of this contract. The machines which were purchased

were therefore not utilised. The bricks made on an experimental basis by these machines were found to be of inferior quality and were also very costly.

106. Asked why these machines were imported when they were available in India itself it was stated that quotations were invited for the purchase of machines from various sources. Purchase was made from the USSR as it was the cheapest available at that time.

107. Efforts had been made to put these machines in use during the 2.5 million tonne stage for making 100 mark bricks. However, the experiment had not succeeded. The equipment therefore, is redundant to requirement and is open for sale. Enquiries have been sent to various projects and agencies for disposal, but the Plant had not so far succeeded in selling it.

108. *The Committee fail to understand why the suitability of these machines was not properly assessed before purchasing them from the USSR. When the Plant authorities came to the conclusion that these machines were not needed by them, arrangements should have been made to dispose them off. The Committee found that this was not done. On the other hand in response to an enquiry from the National Building Construction Corporation who were wanting to purchase such machines, the Bhilai Steel Plant replied on 4-1-1962. "Since the Brick making machines imported Ex-USSR will be required by us during Expansion Work, it is regretted that we are unable to spare the same." The National Buildings Construction Corporation was then obliged to import the machines from abroad.*

109. *The Plant has held on to the brickmaking equipment for over 8 years after coming to the conclusion that they were of no use to them. Four years back an offer from another public undertaking for their purchase was rejected. Thus valuable foreign exchange has not only been blocked by their purchase but further amounts had to be spent for purchase of similar equipment by another sister concern because of refusal to part with the equipment. If the Plant required the machines only at a later date, they could at least have been loaned out. The Committee can only express their regret over it and hope that the Plant authorities will show better prudence in future.*

C. Purchase of trolleys

Para XII—10 (*page* 70) *of Audit Report* (*Commercial*), 1964.

110. It has been stated in the Audit Report for 1964 that due to delay in arranging for the appropriate type of Railway wagons by the Bhilai Steel Plant, 20 manually-operated trolleys, costing Rs. 1.85 lakhs, ordered on an emergent basis, were received in September, 1958 against the stipulated period of delivery in February, 1958. Even after their

receipt in September, 1958, the trolleys were inspected only in July, 1959. Due to these delays, these trolleys could not be utilised for the works for which they were purchased on an emergent basis. Even in June, 1964, the trolleys were lying unused.

111. The Plant authorities have explained that there was delay in the availability of wagons for transportation as a result of which the trolleys ultimately arrived on 24-9-1958. But by that time the refractory work, which could not wait, had been done and transport of refractories was undertaken both by manual and other mechanical means available to the management. The trolleys, after arrival, were not found to be suitable for the work for which they were purchased. The firm also did not send their representative for a long time to give practical demonstration. Ordinarily such trolleys have been found to be useful in engineering works but these particular trolleys turned out to be ineffective. Having regard to the experience of one million tonne plant, it has been found that other means are more effective than the trolleys for transport of refractory bricks. The trolleys have, therefore, not been used even in the 2.5 million tonne stage. Their disposal value is very small. They will have to be dismantled and different parts used for different purposes.

112. The Committee, in this connection, note that the Chief Engineer of the Plant, had observed on 30-5-1960 as follows:—

> "They were indented for the construction works towards the end of 1956. It appears from the audit note that these trolleys have been lying in the Central Stores since September, 1958. It is also seen from the note that these trolleys were inspected and accepted by the Inspection Department on 2-7-1959, *i.e.*, about one year after from the date of their arrival at Bhilai. It will be further seen that attention of E.C. E.P.S. was drawn on 1-2-1959 by the Stores Superintendent to point out that the trolleys were not drawn by any body.
>
> The matter should have been referred to me immediately the trolleys arrived at Bhilai and I would have arranged for their inspection and useful utilisation, instead of offering them to the wrong persons who had no use of them.
>
> As the departmental works of Refractory lining work are now at the closing stage, I do not find any use of these trolleys".

113. During evidence it was admitted that trolleys had not been inspected before purchase to find out whether they would serve the purpose. No responsibility was fixed in this case. *Such infructuous expenditure should be avoided in future.*

VII

INVENTORY CONTROL

A. Delay in introduction of Inventory Control System.

114. The Company Auditors' Report for the year 1961-62 contains the following observations regarding inventory control:—

> "There was no scientific system of procurement and inventory control. Item-wise minimum, maximum reorder, safety and insurance stock levels having regard to the trend of issues, rate of consumption and economic sizes of order were not determined. In the absence of these fact-based data, inventory control and procurement procedure had to depend upon the estimates of Productive/Service Department. Without the above referred basic data, excessive stores, surplus stores, and unserviceable stores requiring disposal action could not be determined. There was no system of reporting upon excessive, slow-moving and obsolete stores periodically by the Stores Department."

115. During evidence, the General Manager informed the Committee that a scientific system of inventory control had been introduced in the Plant in April, 1964.

116. *The Committee regret to note that although the construction of the plant had started in* 1957 *and production started in* 1959, *it was only in April,* 1964 *that a scientific system of inventory control was introduced. It is also regrettable that the Plant took more than* 2 *years in introducing the system after the company auditors had pointed out the necessity for it.*

B. Surplus stores and spares

117. A statement showing materials and equipment found surplus on completion of the 1 million tonne capacity is given below:

Item	Rupees in Crores
Steel	1·475
Pipes, valves, timber, etc.	1·527
Machine parts, tyres, tubes, spares	1·091
Miscellaneous : (Bolts, nuts, cables, petrol, electrical accessories)	1·472
TOTAL	5·565

118. The Committee were informed that the above stores and spares were difficult to procure. These surpluses were utilised for 2·5 million tonne expansion in 1963. If the Plant had not possessed these items, completion of the expansion of the Plant to 2·5 million tonnes would have been delayed by about one more year. The General Manager, Bhilai admitted that there was a certain amount of over-indenting but he added that in any big construction, where Rs. 202 crores were being spent, Rs. 2 to 3 crores worth of stores to be left behind was not a very big issue.

119. The Committee note that a survey was conducted in September-October 1964 which revealed the following surpluses:—

	Value (Rs. in lakhs)
(*i*) *General Stores*	
(1) Electrical group	12·5
2. Metal group	32·5
3. Textile group	5·0
4. Building material group	3·9
5. Tools group	5·8
6. Miscellaneous group	3·2
7. Permanent way Material group	5·6
8. Hardware group	3·3
9. Bearings	14·9
10. Mines stores	7·1
Total Indian Stores	93·8
(*ii*) Refractories	100·0*
(*iii*) Cables (USSR)	4·3
(*iv*) Mines spares (USSR)	37·9
(*v*) Loco spares (USSR)	5·0
(*vi*) Others (USSR)	10·0
GRAND TOTAL	251·0

120. The reasons for the accumulation of these are:—

(1) *Refractories*:

(i) Changes in drawings and design

(ii) Change of roofs (Furnace) from acid to basic

(2) *Cables*:

Left over from 1 million tonne construction

*(Full count not made under check).

(3) *Steel items*:

(i) Left over after 1 million tonne construction;

(ii) Increase in indigenous manufacturing capacities.

(4) *Metals*:

Case of over-indenting in the initial stages in regard to some items.

121. So far as the refactories are concerned, the representatives of the Plant informed the Committee that refractories worth about Rs. 82 lakhs had since been utilized in relining the old Blast Furnaces and in setting up the Fifth Blast Furnace and practically very little stock had been left over. As regards other surpluses, lists had been circulated to Bokaro and other Plants.

122. *The excessive over-stocking of stores and spares in Bhilai is a matter of serious concern. The existence of surplus stores and spares to the tune of Rs. 5·565 crores on completion of the 1 million tonne stage and Rs. 2·51 crores in 1964 is an indication of a serious lacuna in the provisioning system. As a result of this, valuable foreign exchange had been unnecessarily spent on the purchase of these items.*

The Secretary of the Ministry of Iron and Steel admitted that the inventories and the working capital in the Hindustan Steel Plants was very high. Government had asked the Chairman, H.S.L., to take immediate action to reduce the amount of working capital and to take whatever action was necessary to bring down inventories as this was seriously interfering with the profitability of the plants.

123. *The Committee recommend that an enquiry should be held by the H.S.L. into the circumstances under which such over-provisioning of stores was made. If the enquiry reveals* mala fide *or lack of exercise of ordinary prudence, explanation of the persons concerned should be called and suitable action taken. This will act as a deterrent in future. The tendency to over spend foreign exchange in such a manner is to be deprecated and all measures should be taken by Government to put an end to such mistakes in future.* **Enquiry**

124. *The Committee expect that the surplus stores will be utilised during expansion or in the Bokaro Steel Plant. The Controllers of Stores of all the Plants including Bokaro should be supplied with a list of these stores and they should be instructed to avoid fresh imports of these items. Audit may also like to keep a watch on this matter.*

C. Surplus Medical Stores

Time-barred stores.

125. The Committee found that the stock of medical stores on 31-3-1965 was Rs. 10·61 lakhs as against a consumption of Rs. 14·32 lakhs during 1964-65. The Committee found that 41,750 injuction vials of streptodicin valued at Rs. 25,632 had become time-barred and unfit for use. The General Manager of the Plant admitted that this had happened due to human error. The Chief Medical Officer himself did not know about it till much later. The Assistant Stores Officer did not point it out to the Chief Medical Officer at the proper time and he had admitted the mistake. The General Manager also stated that the procedure in this regard had been altered recently with a view to avoid such mistakes.

126. *It hardly needs to be pointed out that most medical stores have a time limit beyond which they cannot be used. The loss caused by such excess stocking has to be avoided. The Committee hope that the new system introduced by the Plant would not permit overstocking. They suggest that the H.S.L. should introduce a uniform system in this regard in all the steel plants.*

D. Storage of cast iron skull-scrap

Para XII-7 (Pages 68-69) of Audit Report (Commercial), 1964

127. It has been pointed out in para XII-7 of the Audit Report for 1964 that in the absence of necessary storage facilities, the Cast Iron Skull-Scrap, a by-product in the process of producing pig iron, was either being dumped into the slag yard or stacked so close to the yard that it got mixed up with slag resulting in a loss of Rs. 30·10 lakhs upto May, 1962, being the value of 27,120 tonnes which could not be salvaged. In April, 1959 the Plant authorities ascertained from the Iron & Steel Controller that this scrap was a controlled commodity and could be sold at the current rate of Rs. 85 per ton ex-site. Audit had also stressed the necessity for separate storage arrangements for this by-product as early as January, 1960.

128. The Plant authorities have explained that the first stage of production was launched in 1959 with minimum facilities at the slag dump yard and the cold pig iron yard. In the absence of proper storage facilities the cast iron skull and scrap had to be dumped along the slag yard. There was also no provision in the Project Report for stacking of C.I. Skull Scrap. Adequate storage facilities could not be made thereafter as the construction work of the second and third blast furnaces as well as of the other shops had to be done urgently to keep up with the schedule of commissioning. All the pig casting machine splashings

and skull had to be taken to the slag dump yard where only two lines existed with two small spurs and dumped there.

129. Recovery was only possible if there existed extra lines where it could be stored and recovered gradually. The cold pig iron yard also had to be extended as it could not take up the normal production. The skull break yard which should have taken care of the scrap and skull from the Blast Furnace was not ready. In the circumstances, the cast iron skull had to be dumped with slag.

130. The Committee were informed that out of the 27,120 tonnes a quantity of 1,741 tonnes valued at Rs. 2·32 lakhs was salvaged and sold. Thus, the Plant suffered a net loss of Rs. 27·78 lakhs due to non-recovery of 25,379 tonnes of C.I. Skull Scrap. During evidence the General Manager of the Plant stated that the recovery of the scrap before 1962 could have been made only at a cost higher than what could have been realised by its sale. The scrap was dumped in such a bad way that nothing could be salvaged from there. The General Manager, however, admitted that there was some carelessness in that the slag was allowed to cover the scrap. Probably, that could have been avoided to some extent. However, from the middle of 1962 proper storage arrangement had been made.

131. *The Committee regret to note that the Plant allowed valuable scrap to be covered by slag. It is unfortunate that even temporary separate storage arrangements could not be made by the Plant authorities during a period of over 3 years, with the result that cast iron skull-scrap worth Rs. 27·78 lakhs was lost.*

E. Purchase of Spares for Cranes

Para XIII-15 (Pages 110-111) of Audit Report (Commercial), 1965

132. Audit have pointed out in their Report for 1965 that between July, 1957 and May, 1959, the Bhilai Steel Plant purchased spare parts (proprietary items), worth Rs. 6·50 lakhs for 6 Jones KL 75 Cranes. Out of these purchases spare parts worth Rs. 2·46 lakhs were declared surplus in September, 1961. Materials worth Rs. 13,465 were sold to the Government of Andhra Pradesh in December, 1963. Out of the stock which was not declared surplus, materials valued at Rs. 1·99 lakhs only were utilised in the Plant upto February, 1964, leaving a balance of Rs. 2·05 lakhs in stock.

133. The Plant authorities informed the Committee that the Cranes were purchased during August-September, 1956 and had been continuously working since the dates of pur-

chase. As per the recommendations of the Government of India Committee's Report on machinery and the recommendations of the manufacturers, spares upto the maximum of 80 per cent of the landed cost of equipment could be consumed during the life span of the cranes. It was on this basis that the list of spares to be purchased was drawn up, and the indent was duly scrutinised by the Chief Engineer. The purchase was considered necessary to reduce idle time to the minimum and to run the equipment properly. The list of spares also included 1·5 lakhs worth of spares for Perkins Engines, 22 of which were fitted in other equipment.

134. The cost of purchase had exceeded the original limit of 80 per cent of the capital cost of the equipment, because at the time the orders were actually placed, the price for equipment and spares had gone up 20 per cent to 40 per cent and actually the quantity of parts procured was lesser than the quantity that could have been purchased in 1956 at the original rates.

135. The position in November, 1965 was that out of surplus spares worth Rs. 2:33 lakhs, spares valued at Rs. 31,617 were issued to Works, and out of the spares worth Rs. 2:05 lakhs (which were not declared surplus), spares amounting to Rs. 12,208 had been utilised and it was hoped that further utilisation would be made during the expansion stages.

136. *The Committee have already recommended a thorough enquiry into the causes of over-provisioning of stores and spares in para* 123 *and hope that unnecessary purchases will be avoided in future.*

VIII

FINANCIAL MATTERS

A. Capital investment

137. The estimate of capital expenditure on the one million tonne plant had been revised from time to time as shown below:—

	(Rs. in crores)
Original Estimates (1956)	.. 110·00
1st Revision (1957)	178·65
2nd Revision (1961)	.. 199·32
3rd Revision (1963)	.. 202·34

138. It will be seen from the above figures that between 1956 and 1963 the estimate had risen by 83:9 per cent. The accounts were finally closed on the 30th June, 1965, and the actual expenditure, including a provision of about Rs. 40 lakhs made to cover certain cases under arbitration, came to Rs. 202·45 crores.

Reasons for increase.

139. The reasons for the increase in the estimate of capital investment pertaining to the 1 million tonne plant are: increase in the cost of (i) plant and equipment, (ii) Civil engineering works; and (iii) inclusion of the cost of all attendant facilities.

140. Like the 1 million tonne Plant, the estimate of capital investment on the 2·5 million tonne expansion has also undergone revisions. When the Russians gave the Project Report in June, 1961, they included only Rs. 98 crores for the proper Steel Plant. A further sum of Rs. 6·6 crores was added to the figure making a total estimate of Rs. 104·6 crores and Government authorised the commencement of the more important works. This estimate, however, excluded a number of items like the Design Staff, the Soviet Supervisory Staff, the temporary works, works outside the perimeter wall like the township, power and water supply, the Railway track, customs duty, and interest and depreciation charges. When these items were added, the estimate rose to Rs. 157·3 crores in August, 1962. The latest estimate, as sanctioned by Government, is Rs. 138·14 crores which excludes the township amounting to Rs. 6·9 crores. But since Government have authorised the construction of houses and the facilities in the township, the Plant authorities have assumed the total revised estimate at Rs. 145·04

crores. The General Manager and F.A. & C.A.O. of the Plant stated during evidence that this estimate is not likely to be exceeded.

141. *The upward revision of estimates necessitated due to incomplete estimates being prepared initially has been the subject of criticism of this Committee and the Estimates Committee in the past. The Committee would like to reiterate that estimates of capital investment for setting up a project should, as far as practicable, be complete in all respects. The practice of seeking the approval of Government bit by bit is misleading. The Committee would suggest that the Government should refuse to entertain incomplete schemes. A check about the completeness of the estimates can be carried out if the suggestion made in para 150* of the Committee's Thirteenth Report is implemented.*

B. Working Capital

142. The Tariff Commission had estimated working capital requirements of the steel plants as 6 months' cost of production in the past, but the Government had allowed only 4 months works cost as working capital for price fixing purposes. This has been taken as a standard to be worked upto.

143. During the years 1962-63, 1963-64 and 1964-65 working capital, expressed in terms of months of expenditure, at Bhilai had been as follows:—

Year	Working capital expressed in months of expenditure
1962-63	5·3 months
1963-64	5·8 months
1964-65	6·4 months

Thus the Bhilai Steel Plant has not been able to restrict its working capital within the limits prescribed by Government.

144. The main reason for working capital being in excess of the target laid down is stated to be the excessive inventory of spares of which Rs. 2:0 to 2:5 crores worth is almost

*150. * * * * * The Committee recommend that project estimates should be prepared realistically and efforts made to adhere to them. The Committee would like to further recommend that with a view to avoiding incomplete estimates being prepared Government should inmmediately conduct a post review of the reasons for under estimates in the past. Based on the findings of such a review suitable instructions should be issued to authorities concerned with the preparation of project estimates, for their guidance. If the review reveals that the existing check list omits certain items, the same should be added.

non-moving and Rs. 4·0 to 5·0 crores worth is for covering risk against break-downs of major assemblies. The Plant has, however, expressed the hope that if Indianisation of spares proceeds successfully, it would be possible to contain the inventories to lower figures. Once this is done the working capital would also come within the stiff target laid down.

145. The Committee were informed that except for inventories all other items of current assets and current liabilities had shown improvement over the past. Inventories are high not so much due to orders placed recently, but due to arrivals against old orders of 1961 and 1962.

146. *The Committee are not convinced that effective measures are being taken by the Plant in regard to controlling the working capital as it has increased from* 5·3 *in* 1962-63 *to* 6·4 *in* 1964-65, *expressed in terms of months of expenditure. If effective steps had been taken, this figure would have come down and not risen. The Plant and the Head Office should take effective steps to bring the working capital within the prescribed limits, as this affects the profitability of the Plant.*

C. Outstanding debts

147. As on the 31st March, 1965 unrealised debts pending over six months totalled Rs. 122·8 lakhs. Of this, Rs. 36·59 lakhs had been realised upto March, 1966. Thus, the remaining debts, amounting to Rs. 86:22 lakhs, are nearly one and a half years old. The main reasons for not being able to realize these debts are stated to be: disputed deductions due to revision of rates, short receipts and deductions of cash discount which according to the Plant are not justified. Out of the unrealised debts of Rs. 86·22 lakhs, Rs. 32·84 lakhs are due from private parties and Rs. 53·38 lakhs from Government parties. Of the dues from private parties, Rs. 30·61 lakhs were on account of charges for treatment availed of in the Plant's hospital, water charges, transport charges, outstandings of rent and electricity and furniture hire charges, due from contractors, shop-keepers, employees and co-operative societies.

148. *The Committee fail to understand as to why Rs.* 30·61 *lakhs, which represent charges for treatment availed of in the Plant's hospital, water charges, etc., could not be settled for such a long time. The Committee recommend that urgent steps including legal proceedings should be taken to recover these as well as the other outstanding debts. Where defective procedure is responsible for the delays, suitable action should be taken to streamline it with a view to avoid future delays.*

D. Working Results

149. As mentioned earlier, the Plant entered the operational phase in February, 1959, when the first Blast Furnace was commissioned. The working results from the years 1959-60 to 1964-65 are shown below:—

Year	Rs. in lakhs Profit (+) Loss (−)
1959-60	(+) 3·15
1960-61	(+) 152·69
1961-62	− 388·57
1962-63	− 448·93
1963-64	+ 150·03
1964-65	+ 50·28

150. Since 1962-63, the Plant has started bearing proportionate interest charges on loans. It may be seen from the above figures that the profit of the Plant declined from Rs. 150·03 lakhs in 1963-64 to Rs. 50·28 lakhs in 1964-65. As regards the decline in profit in 1964-65 it was stated that in 1964-65 two shift depreciation at the rate of 7% had to be provided as against a provision of 5% during 1964-65. That accounted for an addition of Rs. 1·6 crores.

151. The Plant authorities are very optimistic about the Plant's profitability from 1966-67 onwards. It was stated that on the completion of the 2·5 million tonne stage in 1966-67 the net profit of the Plant would be Rs. 16·00 crores.

152. Asked on what basis this forecast was made, the Plant has given the following details:—

Particulars	(Rs. in Crores)
Gross sales	157·3
Less freight outward	14·1
Cash discount	0·8
Net sales	142·4
Raw materials	40·0
Stores and spares	14·4
Excise duty	23·5
Power, fuel & Relining	4·0
Salaries	10·3
Depreciation	20·2

Particulars	(Rs. in crores)
Interest on loan	8·0
General administration	2·0
Works administration	0·6
Selling administration	0·8
Township administration	1·8
Miscellaneous	0·8
	126·4
Net margin	16·0

153. The Plant has, however, stated that the net margin of Rs. 16 crores was based on the following assumptions:—

(1) All units working at full capacity.

(2) Marketability for the entire production.

(3) Current wage level.

(4) Current price level for raw materials and stores.

(5) Current level of excise duty rates and taxes.

154. They have further added that while during 1966-67, the Plant will be having a production potential of 2·3 million tonnes of ingots (against the ultimate capacity of 2·5 million tonnes), the production may have to be deliberately curtailed, having regard to the condition obtaining at present.

155. *As stated earlier, the sales outlook at the moment is not very bright and it is doubtful if the Plant will be able to produce to the optimum capacity, due to lack of orders. This will adversely affect the profitability. The Committee hope that all efforts will be made by the Plant to increase its productivity and sales if necessary by diversification and development of new products and to reduce its costs by efficient methods so that forecasts of profits are achieved. The Sales Office will have to exert more towards this end.*

E. Payment of demurrage charges

156. The amount of demurrage charged and paid to the Railways during each of the last 3 years is given below:—

Year	Amount billed by Railways	Amount paid	Amount disputed
1962-63	24,38,816	9,17,280	15,21,536
1963-64	27,60,772	11,48,776	16,11,996
1964-65	32,01,248	22,40,904	9,60,344

157. It will be seen that demurrage charges have been mounting year by year. Between 1962-63 and 1964-65 the demurrage paid has more than doubled. In addition to the payment already made during the 3 years, a sum of Rs. 40·93 lakhs is under dispute. The Railways have allowed a remission of Rs. 4·39 lakhs towards the disputed amount pertaining to 1964-65. Remissions for the earlier years are being worked out by them.

158. The Committee were informed that the problem of demurrage was constantly reviewed in the Traffic Manager's Production Committee meetings in which the representatives of workers also participate. As a result of such reviews, it has been possible to reduce detention time but there are some hard cases, linked to conditions of loading and unloading in which demurrage is unavoidable unless the Railways change the free time.

159. *The Committee are not convinced that the measures taken by the Plant are bearing fruit judging by the fact that the demurrage paid is rising rapidly year by year instead of decreasing. This matter should be examined at the highest level in the Plant and effective measures taken to reduce the demurrage charges to the minimum. An expenditure of Rs. 28 lakhs per year on this account cannot be treated lightly.*

F. Accounting Procedure

160. The Committee find that the cost of water per tonne of ingot steel at Bhilai is Rs. 5·50 while the corresponding figure for Durgapur is Rs. 1·80.

161. It was explained that the unit cost of water in both the cases was more or less identical but the difference arose because of separate systems of water-circulation in the two Plants. At Bhilai, the return water is collected in cooling tanks and the quantity, including make-good water is fed back to the Plant, and the cost is calculated on the basis of the entire quantity circulated. Durgapur Steel Plant, on the other hand, has got a closed water circulation system with cooling towers and the cost per 10^3 M^3 is worked out on the quantity to make-good water only. *The Committee feel that all the three Steel Plants should have a uniform procedure of cost allocation so as to facilitate comparison of corresponding costs in the Steel Plants. This will help the Plants and the Head Office to compare the costs of the three Plants inter-se and enable the Management to take timely steps to reduce them where the Plant is at a dis-advantage vis-a-vis other plants. This should also lead to a healthy element of competition between the Plants.*

IX

PERSONNEL MATTERS

A. Over-staffing

162. The Detailed Project Report for the Million Tonne Plant estimated the man-power requirements at 7,300. As against this estimate, 26,512 persons (excluding—construction workers but including workers working in township and mines) were actually employed on the 31st December, 1964, *i.e.*, more than thrice the number provided in the Project Report. In addition to this, 3205 persons were employed in respect of expansion.

163. It has been explained that the figures estimated in the D.P.R. were very low because certain assumptions which the Soviet designers had made, for example, mechanical handling facilities for loading and un-loading inside the Plant, mechanization of maintenance jobs to the extent prevailing in the U.S.S.R., did not prove correct. In addition, the Plant had also to absorb about 46.5 per cent of the construction staff. With a view to determine a standard force, a Committee on Man-power was appointed in 1958-59 by the Head Office and this Committee fixed a strength of 19485 for the entire 1 million plant allowing discretion to the Plant authorities to add to this after study by the Industrial Engineering Department. Actually on 1-4-1964, the staff employed was 17,754, but since the Plant had to engage persons for training for units under the expansion stage, the number had to be icreased further.

164. During evidence the General Manager admitted that there was some over-staffing at the 1 million tonne stage, but the surplus staff had now been absorbed in the expansion barring some persons in the clerical grade.

165. So far as the 2·5 million stage is concerned, the original estimate given in the D.P.R. was 12,040. For the reasons stated in para 158, this estimate was considered inadequate. The Industrial Engineering Department of the Plant had carried out a detailed study of the man-power requirements for operational and maintenance Departments only during 2.5 million stage and had fixed the strength of staff at 25,980. The strength actually employed on 1-10-1965 was 21,881.

166. *It is evident that the estimates given in the D.P.Rs. both for one million tonne stage and 2·5 million tonne stage were very wide off the mark. The collaborating agency should have been given all necessary data about the Indian conditions so that realistic estimates of staff could have been made. The staff strength has subsequently been re-fixed a number of times. The refixation done by the Head Office and the Plant itself subsequently was also found to be incomplete.*

167. *The over-staffing in the Steel Plants has been admitted to some extent. The Plant should determine the overall strength required for the 2·5 million stage. Once this figure is determined, attempts should be made to run the Plant within that limit.*

B. **Overtime Allowance**

168. During the years 1963-64 and 1964-65, the Plant paid Rs. 6·19 lakhs and Rs. 30·13 lakhs respectively as overtime allowance. Thus, the overtime allowances have increased about five-fold within one year. The following reasons have been assigned for this rise:—

(i) The plant personnel in shifts have to be kept back to exchange notes and explain the position to the staff of the next shift. It takes one hour for the shift to be taken over and overtime has to be paid to the relieved shift.

(ii) Capital repairs to the blast furnaces took place in 1964-65. Since more people are needed for relining of blast furnaces, existing staff had to do overtime.

(iii) In the non-technical departments, particularly in the Accounts and Stores departments due to withdrawal of 700 persons, who were found surplus to requirements, remaining staff had to do overwork.

169. During evidence, the Secretary, H.S.L., stated that the Board of H.S.L. had been unhappy about increases in overtime allowance, which seemed to be chronic in all the three plants, and had urged upon the General Managers to keep it within reasonable limits.

The Committee are unhappy about the rise in overtime allowance to the tune of Rs. 24 lakhs in a single year. Overtime allowance should not be admitted as a matter of course, but allowed sparingly. Only the Heads of Departments should be authorised, to sanction overtime and whenever they do so they should state the reasons therefor. The General Manager should also keep a watch.

X

CONCLUSION

170. During the course of their examination of the Bhilai Steel Plant, the Committee have come across certain deficiencies in the working of the Plant which have been discussed in the foregoing chapters. More important of these are mentioned below:—

(i) Inordinate delays in the completion of the various production units (paras 12 and 19);

(ii) Delay in purchase of locomotives resulting in transport bottleneck and fall in production (paras 35 and 36);

(iii) High rejections of Rails (paras 38 and 45);

(iv) Inadequate sintering capacity (para 76);

(v) Delay in relining of overaged Blast Furnaces affecting adversely the economical working of the Plant (paras 102 and 103);

(vi) Excessive stores and spares and working capital affecting adversely the profitability of the Plant (paras 122 and 146); and

(vii) Overstaffing (paras 160 and 167).

171. The Committee agree that the setting up and running of a complex project like a steel plant is a stupendous task, requiring high degree of managerial and technical skills and financial resources. But at least some of the shortcomings, referred to above, could have been avoided if proper planning had been done and timely action taken. The problem faced by the plant to-day pertains to the deterioration in the quality of raw materials and the lack of demand of certain products. Committee have made suggestions in this regard at appropriate places in the Report.

172. Notwithstanding these deficiencies and problems it is heartening that production in the Plant is above the rated capacity. The Committee trust that the Plant will make concerted efforts to increase its efficiency and thereby profitability in future.

NEW DELHI:
April 21, 1966.

Vaisakha 1, 1888 (*Saka*)

D. N. TIWARY
Chairman,
Committee on Public Undertakings.

APPENDIX I

Statement showing Schedule of commissioning envisaged in the D.P.R., revised schedule and actual dates of commissioning in respect of various units in the one million tonne stage.

Particulars	Schedule of Commissioning		Gaps between projected and Revised Schedules	Actual dates of commissioning	Delay from		Estimated production loss by not commissioning according Projected Schedule	Basis of figures in col. 8
	As envisaged in the detailed project Report	As revised			Projected schedule	Revised schedule		
1	2	3	4	5	6	7	8	9
			Months		Months		Tonnes	
COKE OVENS								
Coke Oven Battery No. 1.	Aug. 58	Jan. 59	5	31-1-59	5	..	165000	33,000 tons of Gross coke per battery per month.
„ „ No. 2	Nov. 58	Aug. 59	9	22-12-59	13	4	440000	

„ „ No.3	Oct. 59	Nov. 60	13	30-12-60	14	1	474600	
SINTERING MACHINE								
No. 1 . .	Aug. 59	Dec. 60	16	July, 61	23	7	958300	41670 tons of sinter per machine per month.
No. 2 . .	Oct. 59	Feb. 61	16	Sept. 61	23	7	958300	
BLAST FURNACE								
No. 1 .	Sept. 58	Dec. 58	3	4-2-59	4	1	123332	30833 tonnes of hot metal per furnace per month.
No. 2 . .	Dec. 58	Aug. 59	8	24-12-59	12	4	370000	
No. 3 . .	Nov. 59	Sept. 60	10	30-12-60	13	3	400800	
STEEL MELTING SHOP								
Open Hearth Furnace								
No. 1 . .	Oct. 58	Aug. 59	10	18-10-59	12	2	166700	@13890 tonnes of ingot steel per furnace per month.
No. 2 . .	Nov. 58	Aug. 59	9	17-12-59	13	4	180600	
No. 3 . .	June, 59	Mar. 60	9	23-3-60	9	..	125000	

1	2	3	4	5	6	7	8	9
No. 4 .	July, 59	June, 60	11	15-10-60	15	4	208400	
No. 5 .	Oct. 59	Oct. 60	12	30-12-60	14	2	194500	
No. 6 .	Dec. 59	Nov. 60	11	22-2-61	14	3	194500	
ROLLING MILLS								
Blooming Mill (Soaking Pits 6-13).	Nov. 58	Nov. 59	12	7-11-59	11	..	859000	@71580 tonnes of blooms per month.
Billet Mill . .	Nov. 59	Dec. 59	1	24-12-59	1	..	35580	@35580 tonnes of billets p.m.
Rail and Structural Mill	July, 59	Nov. 60	16	27-12-60 (Strls) May, 1961 (Rails)	17 22	1 6	517140	30420 tonnes of Raits and Structural Mill per month.
Merchant Mill	Dec. 59	Dec. 60	12	22-2-61	14	2	397500	21250 tonnes of merchant products p.m.

APPENDIX II

Statement showing schedule originally envisaged, revised schedule and actual dates of commissioning in respect of Units completed under expansion of Plant to 2·5 million tonne capacity.

Particulars	Schedule of commissioning		Date of actual commissioning	Delay		Remarks
	As originally envisaged (16-10-63)	As revised last (August, 1965)		Actual	As was anticipated in the revised schedule (August, 1965)	
1	2	3	4	5	6	7
				Months	Months	
COKE OVENS						
Battery No. 4	May, 1964	..	30-9-64	4	..	
Battery No. 5	December, 1964	September, 1965	..	..	9	
Battery No. 6	July, 1965	December, 65	..	..	5	

1	2	3	4	5	6	7
Sulphuric Acid Plant	December, 1964	October, 65	..	..	10	
Tar preparation Plant	December, 1964	December, 65	..	..	12	
SINTERING PLANT						
Sintering Belt No. 3 .	May, 1965	December, 1965	..	..	7	
BLAST FURNACES						
Furnace No. 4 .	May, 1964	..	8-12-64	6	..	
Furnace No. 5 .	May, 1965	December, 1965	..	..	7	
STEEL MELTING SHOP						
Open Hearth Furnace No. 7 . .	Apl. 64	..	26-11-64	7	..	
No. 8 . . .	Sept. 64	Mar. 65£	17-5-65	8	..	£Last revised in June, 1965.
No. 9 . . .	Jan. 65	Dec. 65	..	..	11	
No. 10 . .	May, 65	Dec. 65	..	..	7	
Reconstruction of O.H. Furnace No. 6 .	Nov. 65	May, 1966	..	..	6	

BLOOMING MILL					
Soaking Pit No. 6	Nov. 64	..	11-9-64	9	..
No. 7	July, 65	..	10-8-65	..	..
No. 8	Feb. 64	..	..	..	..
No. 9	May, 64	Aug. 65	..	..	15
No. 10	Aug. 64	Sept. 65	..	..	13
No. 11	Oct. 64	Oct. 65	..	..	12
No. 12	Jan. 65	Nov. 65	..	..	10
No. 13	Apl. 65	Dec. 65	..	..	8
BILLET MILL					
New Stands, Cooling Beds & Auxiliaries.	August, 1964	October, 1965	24-7-65 (Cooling Beds)	11 (Cooling Beds)	18 (New Stands & Auxiliaries)
RAIL & STRUCTURAL MILL					
(i) Slow cooling Pits Nos. 4, 5 & 6.	December, 64	December, 1965	..	..	12
(ii) Finishing Groups No. 3. and 4.	December, 64	August, 1965	..	..	8

1	2	3	4	5	6	7
(*iii*) No. 5 and 6	December, 64	November, 1965	..	..	11	
(*iv*) Modification of Group 1 & 2.	December, 64	December, 1965	..	..	12	
MERCHANT MILL						
Reheating Furnaces and Finishing facilities.	April, 1964	June, 1965£	30-7-65 (Reheating Furnace)	15	14 (Finishing facilities)	£Last revised in June, 1965.
WIRE ROD MILL						
(Full Complex)	Dec. 65	June, 66	..	..	6	
AUXILIARY SHOPS						
(*a*) Foundry	Oct. 64	Nov. 65	..	..	13	
(*b*) Machine Shop	Dec. 63	Nov. 65£	..	..	23	£Last revised in June, 1965.
(*c*) R.M.P.						
(*i*) Powder Shop	Apl. 65	Sept. 65	..	..	5	
(*ii*) Lime Shop	Apl. 65	Oct. 65	..	..	6	

(iii) Dolomite Shop	Apl. 65	Dec. 65	..	..	8	
(*d*) Oxygen Plant (installation of Third Unit) .	Dec. 64	Oct. 65	..	..	10	
(*e*) Compressor Station No. 2.						
(i) Compressor No. 1&2 .	Feb. 64	July, 65	July, 65	17	..	
(ii) Compressor No.3	Feb. 64	Sept. 65	..	..	19	
(iii) Compressor No. No. 4&5 .	Feb. 64	Nov. 65	..	..	21	
SLAGPROCESSING PLANT						
(i) Granulation Plant	March, 64	..	3-11-64	7		
(ii) Aggregate Crushing Plant .	July, 64	June, 65§	5-7-65	11	..	§Last revised in June, 1965.
POWER BLOWING STATION						
(*a*) Turbo Generator						
No. 3 .	Dec. 63	..	Dec. 64	12	..	

1	2	3	4	5	6	7
(*b*) Turbo Blower No. 6 .	Apl. 64	Sept. 65	..	..	17	
(*c*) Boiler No. 5 .	Apl. 64	Oct. 65	..	..	18	
(*d*) Turbo Blower No. 5 and Boiler No. 4	Aug. 64	..	Dec. 64	4	..	

APPENDIX III

Summary of conclusions/recommendations of the Committee on Public Undertakings contained in the Report.

S. No.	Ref. to para No. in the Report	Summary of conclusions/ recommendations
1	2	3
1	12	While some delays in construction could be expected owing to the lack of experience in setting up a complex project like a steel plant, the Committee feel that delays over a year can hardly be justified.
2	19	The Committee do not consider that the difficulties in regard to the completion of the various units of the 2·5 million tonne expansion mentioned in paras 17 and 18 were unsurmountable and beyond the control of the Plant authorities. Difficulties like delays in obtaining steel and having to import it as a last resort had arisen in the construction of the one million tonne plant also. It thus appears that the experience of the one million tonne stage was not utilised to avoid similar difficulties during the present expansion. It is clear that the anticipation of steel supplies was incorrect. That this should happen when the production capacity of each steel plant was known, when most of the steel required was produced in the Plants of the Hnidustan Steel Limited, and when all the steel required is distributed by the H.S.L. to the various consumers on the basis of fixed priorities, is a matter of serious concern. It was only in 1963, when all the steel should have reached the fabricators that it was discovered that 5,000 tonnes of steel would not be available in the country and would have to be imported. The Committee regret to observe that there was lack of foresight and vigilance in this regard. It is hoped that greater care would be taken in this matter in the next expansion programme.

1	2	3
3	21	The Committee have already referred to the need for simplifying the procedure relating to sanctioning of foreign exchange and import licences for public undertakings in para 127 of their Thirteenth Report on Management and Administration of Public Undertakings. They suggest that the procedure in this regard should be simplified. It has to be mentioned that the original schedule of commissioning the 2·5 million tonne expansion was revised 6 times within a period of 2 years. Realistic estimation of completion targets is essential, but such revisions should not be made every time a delay occurs. Once a time-schedule is prepared, all efforts should be made to fulfil the targets in time.
5	26	The Committee hope that it will be possible to finalise the details of the expansion of the Plant to 3·5 million tonne capacity at an early date and take up the preparation of the Detailed Project Report without further delay. The Bhilai Steel Plant is already behind the Durgapur and Rourkela Steel Plants in this matter and the Committee hope that it will make all efforts to regain the lost time.
6	29	The Committee think that the progress in developing manufacturing capacity in respect of equipment has been rather slow. To achieve indigenous equipment to the extent of 58 per cent at the 3·5 million tonne expansion stage is not satisfactory. The Committee hope that during the Fourth Plant period accelerated progress in this regard would be made. The object should be to set up a steel plant with wholly indigenous equipment and know-how.
7	35	It will be seen that production was affected during the expansion stage due to late receipt of locomotives. The Plant was aware that the Russian locomotives were ineffective and extremely expensive to maintain. Therefore, negotiations should have been carried out with the Russians from the beginning to find an alternative source for the locomotives. It is mainly due to failure to initiate timely action for the purchase of locomotives that the production suffered to that extent.

1	2	3
8	36	The Committee were informed that the transport bottleneck would continue as long as the defects in the Russian locomotives are not rectified. It is understood that efforts are being made to replace the engines of these locomoitves. The Committee are unhappy with the present state of affairs both on acconut of the bottleneck which these locomotives are creating and on account of the vehy high cost of their maintenance. Both these factors are having an adverse effect on the cost of production and it is necessary to take urgent measures to rectify the situation. The Committee recommend that the efforts to replace the engines of these locomotives should be expedited. The Railway Board should also be consulted for expert advice on the subject, if not already done.
9	45	The Committee are glad to learn that the percentage of rejections of rails will go down in 1965-66. They do not, however, appreciate the argument that because the production of substandard rails had been below 19 per cent during the last three years, therefore there was no loss on their production. Had there been no rejections of rails, the net value of Rs. 39.42 lakhs (the difference in sale value between sub-standard and good rails) would have realised had there been no rejections. Public Undertakings cannot be complacent about rejections or substandard products as costs of both material and labour are involved. Every effort should be made to avoid such a loss. In the opinion of the Committee a figure of 12 per cent rejections is on the high side, which should warrant a close scrutiny by the General Manager and the Head Office. They should take concrete measures to bring down this figure. The Committee also recommend that efforts should be made to obtain a better price for untested 105 lbs rails.
10	48	The Committee feel that it is not proper to fix the price of ammonium sulphate produced by the Bhilai Steel Plant on par with that of TISCO and IISCO. The gross block per tonne of saleable steel in the case of TISCO and IISCO is much less than the corresponding figure relating to the HSL plants, as the private sector plants were constructed several years back when the cost

1	2	3
		was less. The Committee understand that during the last 3 years, the Plant had approached the Government of India several times for a revision of the price of ammonium sulphate price paid to it. The chief Cost Accounts Officer had also been asked to examine the costs of the plant but he had not done so. The Committee recommend that this should be undertaken at an early date.
11	54	It is evident from the observations of the Secretary, Ministry of Iron and Steel and the Head Office that declining demand for pig iron is going to present a problem. The Committee therefore recommend that Government should make a realistic survey of the demand in the country. That the estimate of demand prepared by the DGTD and the Ministry of Iron and Steel varied to the extent of 25 per cent and that even the lower estimates of the Ministry were higher than the off-take, indicates that there is no proper procedure for calculating the demand. Unless this is done on a scientific basis and the Government is able to know the exact demand for a particular item unnecessary imports might be made or the capacity in the Steel mills for the production of this item might be over or under estimated.
12	56	When the expansion of the steel Plants takes place, the problems of selling the grade of pig iron with lower silicon content will also correspondingly increase. A quick market survey for its disposal at home and abroad should therefore be carried out.
13	61	Though the Secretary of the Ministry of Iron and Steel informed the Committee that this slump in merchant products was a temporary phase, the Committee feel that it is necessary for the Government to study the demand position carefully before deciding the product-mix of the expanded Plants. There would be no purpose in rolling products in excess of the demand or for which there is no demand.
14	62	The Committee desire that before taking a final decision on the product-mix of the steel plants, in the public sector including Bhilai,

1	2	3
		the demand for various products should be carefully studied.
15	66	There is a steep rise in compensations paid from Rs. 9265 in 1963-64 to Rs. 2:44 lakhs in 1964-65 even though it represents only a negligable fraction of 1 per cent of the total sales. There should be no complacency about this matter and efforts should be made to give service a free of complaint. As regards the reason that customers do not specify their requirements in detail resulting in wrong supplies, the Committee suggest that no supply should be effected unless the Plant is definite about the specifications required by the cutomer. The Sales Office should resolve all these matters and give clear instructions to the Plant. The Committee suggest that the question of giving facilities to the cutomers to inspect the goods before despatch might be examined.
16	68	It does not appear that problem of variations in ash content of coal can be solved by negotiations with the collieries. Installation of a blending equipment at the Plant seems to be the best solution. In the initial stages, the installation of the equipment was not looked upon with favour in view of the increase in the already high capital cost of the Plant. In view of the prevailing circumstances it might be examined if it would be in the interest of the Plant to instal a coal blending equipment.
17	71	The Committee hope that arrangements for selective crushing will be made at the Bhilai Steel Plant also.
18	76	In view of the high rate of fines in the iron ore, adequate number of sintering machines will have to be provided at the Plant. The Committee hope that an early decision will be taken for providing two additional sintering plants, as recommended by Gipromez.
19	82	Considering the quantum of savings in the cost of production and the small capital investment involved, the Plant should have gone in for a disiliconisation plant earlier. If such a

1	2	3
		plant had been installed the rate of consumption of iron ore would have been reduced and the wear and tear of the refractories would have also gone down. The Committee recommend that the necessary plant should be fabricated and installed.
20	86	The Committee hope that it would be possible for the Bhilai Steel Plant to instal the equipment for oil injection before long. The Oil and Natural Gas Commission should also take energetic steps to produce the required quantity of furnace oil in the country.
21	91	The Committee see no reason why the Bhilai Steel Plant cannot plan its requirements of refractories ahead of time specially since this is a recurring requirement. The Ministry of Iron and Steel have informed the Committee that it would be possible for the refractory manufacturers to expand their capacities according to the needs of the steel plants by diversifying their existing licensed capacities for other types of refractories. The Committee have already recommended in their twenty-ninth report on the Durgapur Steel Plant that encouragement should be given to the manufacturers of refractories in India to manufacture all the types required by the Steel Plants.
22	92	There is considerable force in the argument of the Indian Refractory Makers Association that the refractory industry is put to difficulties when each Plant lays down its own specifications which are quite different from those of the I.S.I. Economic production also becomes difficult when each Plant lays down its own specifications. The Committee recommend that the matter should be examined by a Technical Committee consisting of representatives of all the steel plants and the Indian Standards Institution. That Committee may study the specifications used by the various plants and evolve common standard specifications for adoption by all the Plants.
23	97	The Committee regret that losses on account of shortages of raw materials have been treated lightly and considered as inevitable. It

1	2	3
		is only from this year that a watch is being kept over them. The loss of Rs. 80 lakhs to 1 crore of raw materials in each Plant due to handling losses and pilferage cannot be ignored and every effort should be made to reduce them. Apart from the measures already taken, the Committee hope that precautions will be taken to prevent pilferage particularly from within the works. This matter should also form part of a periodical review by the Head Office and Government.
24	103	The Committee regret to observe that the Plant did not obtain the necessary equipment for change of top gear and relining of blast furnaces in time. Investigation should be held into the causes of delay and responsibility fixed. With a view to avoid recurrence of mistakes of this nature in future, a long term programme for capital repairs should be drawn up and definite time schedule prescribed for the ordering of equipment, starting and completion of work etc.
25	108-109	The Committee fail to understand why the suitability of the Brick making machines was not properly assessed before purchasing them from the USSR. When the Plant authorities came to the conclusion that these machines were not needed by them, arrangements should have been made to dispose them off. The Committee found that this was not done. On the other hand in response to an enquiry from the National Building Construction Corporation who were wanting to purchase such machines, the Bhilai Steel Plant replied on 4th January 1962 "Since the Brick making machines imported Ex-USSR will be required by us during Expansion Work, it is regretted that we are unable to spare the same." The National Buildings Construction Corporation was then obliged to import the machines from abroad. The Plant has held on to the brick making equipment for over 8 years after coming to the conclusion that they were of no use to them. Four years back an offer from another public undertaking for their purchase was rejected. Thus valuable foreign exchange has not only been blocked by their purchase but further amounts

1	2	3
		had to be spent for purchase of similar equipment by another sister concern because of refusal to part with the equipment. If the Plant required the machines only at a later date, they could at least have been loaned out. The Committee can only express their regret over it and hope that the plant authorities will show better prudence in future.
26	113	Twenty trolleys purchased in 1958 at a cost of Rs. 1·85 lakhs were lying unused. They were found unsuitable for the work for which they were purchased. During evidence it was admitted that trolleys had not been inspected before purchase to find out whether they would serve the purpose. No responsibility was fixed in this case. Such infructuous expenditure should be avoided in future.
27	116	The Committee regret to note that although the construction of the plant had started in 1957 and production started in 1959, it was only in April, 1964 that a scientific system of inventory control was introduced. It is also regrettable that the Plant took more than 2 years in introducing the system after the company auditors had pointed out the necessity for it.
28	122	The excessive over-stocking of stores and spares, in Bhilai is a matter of serious concern. The existence of surplus stores and spares to the tune of Rs. 5·565 crores on completion of the 1 million tonne stage and Rs. 2·51 crores in 1964 is an indication of a serious lacuna in the provisioning system. As a result of this valuable foreign exchange had been unnecessarily spent on the purchase of these items.
29	123	The Committee recommend that an enquiry should be held by the H.S.L. into the circumstances under which such over provisioning of stores was made. If the enquiry reveals malafide or lack of exercise of ordinary prudence, explanation of the person concerned should be called and suitable action taken. This will act as a deterrent in future. The tendency to over spend foreign exchange in such a manner is to be

1	2	3
		deprecated and all measures should be taken by Government to put an end to such mistakes in future.
30	124	The Committee expect that the surplus stores will be utilised during expansion or in the Bokaro Steel Plant. The Controllers of Stores of all the Plants including Bokaro should be supplied with a list of these stores and they should be instructed to avoid fresh imports of these items. Audit may also like to keep a watch on this matter.
31	126	It hardly needs to be pointed out that most medical stores have a time limit beyond which they cannot be used. The loss caused by such excess stocking has to be avoided. The Committee hope that the new system introduced by the Plant would not permit overstocking. They suggest that the H.S.L. should introduce a uniform system in this regard in all the steel plants.
32	131	The Committee regret to note that the Plant allowed valuable cost iron skill scrap to be covered by slag. It is unfortunate that even temporary separate storage arrangements could not be made by the Plant authorities during a period of over 3 years, with the result that scrap worth Rs. 27:78 lakhs was lost.
33	135-36	Out of Rs. 2·33 lakhs worth of spares declared surplus spares worth Rs. 31,617 were issued to Works and of the spares worth Rs. 2·05 lakhs (which were not declared surplus) spares worth Rs. 12,208/- had been utilised upto November, 1965 and it was hoped that further utilisation would be made during the expansion stages. The Committee have already recommended a thorough enquiry into the cause of over provisioning of stores and spares in para 123 and hope that unnecessary purchases will be avoided in future.
34	141	The upward revision of estimates of capital expenditure necessitated due to incomplete estimates being prepared initially has been the subject of criticism of this Committee and the Estimates Committee in the past. The

1	2	3
		Committee would like to reiterate that estimates of capital investment for setting up a project should, as far as practicable, be complete in all respects. The practice of seeking the approval of Government bit by bit is misleading. The Committee would suggest that the Government should refuse to entertain incomplete schemes. A check about the completeness of the estimates can be carried out if the suggestion made in para 150 of the Committee's Thirteenth Report is implemented.
35	146	The Committee are not convinced that effective measures are being taken by the Plant in regard to controlling the working capital as it has increased from 5.2 in 1962-63 to 6.4 in 1964-65, expressed in terms of months or expenditure. If effective steps had been taken, this figure would have come down and not risen. The Plant and the Head Office should take effective steps to bring the working capital within the prescribed limits, as this effects the profitability of the Plant.
36	148	The Committee fail to understand as to why Rs. 30.61 lakhs, which represent charges for treatment availed of in the Plant's hospital, water charges, etc., could not be settled for such a long time. The Committee recommend that urgent steps including legal proceedings should be taken to recover these as well as the other outstanding debts. Where defective procedure is responsible for the delays, suitable action should taken taken to streamline it with a view to avoid future delays.
37	155	The sales outlook at the moment is not very bright and it is doubtful if the Plant will be able to produce to the optimum capacity, due to lack of orders. This will adversely affect the profitability. The Committee hope that all efforts will be made by the Plant to increase its productivity and sales if necessary by diversification and development of new products and to reduce its costs by efficient methods so that forecasts of profits are achieved. The Sales Office will have to exert more towards this end.

1	2	3
38	159	The Committee are not convinced that the measures taken by the Plant to reduce demurrage are bearing fruit judging by the fact that the demurrage paid is rising rapidly year by year instead of decreasing. This matter should be examined at the highest level in the Plant and effective measures taken to reduce the demurrage charges to the minimum. An expenditure of Rs. 28 lakhs per year on this account cannot be treated lightly.
39	161	The Committee feel that all the three Steel Plants should have a uniform procedure of cost allocation so as to facilitate comparison of corresponding costs in the steel Plants. This will help the Plants and the Head Office to compare the costs of the three Plants *inter-se* and enable the Management to take timely steps to reduce them where the Plant is at a dis-advantage *vis-a-vis* other plants. This should also lead to a healthy element of competition between the plants.
40	166-167	It is evident that the estimates of manpower requirements given in the D.P.Rs., both for one million tonne stage and 2·5 million tonne stage, were very wide off the mark. The collaborating agency should have been given all necessary data about the Indian conditions so that realistic estimates of staff could have been made. The staff strength has subsequently been re-fixed a number of times. The refixation done by the Head Office and the Plant itself subsequently was also found to be incomplete. The over-staffing in the Steel Plants has been admitted to some extent. The Plant should determine the overall strength required for the 2.5 million stage. Once this figure is determined, attempts should be made to run the Plant within that limit.
41	169	The Committee are unhappy about the rise in overtime allowance to the tune of Rs. 24 lakhs in a single year. Overtime allowance should not be admitted as a matter of course, but allowed sparingly. Only the Heads of Departments should be authorised, to sanction overtime and when-

1	2	3
		ever they do so they should state the reasons therefor. The General Manager should also keep a watch.
42	171-172	The Committee appreciate that the setting up and running of a complex project like a steel plant is a stupendous task, requiring high degree of managerial and technical skills and financial resources. But at least some of the shortcomings, referred to in the Report could have been avoided if proper planning had been done and timely action taken. Notwithstanding these deficiences and problems it is heartening that production in the Plant is above the rated capacity. The Committee trust that the Plant will make concerted efforts to increase its efficiency and thereby profitability in future.

GMGIPND—207 LSS—Line NS—er-q/06—10/9

Sl. No.	Name of Agent	Agency No.
18	W. Newman & Company Ltd., 3, Old Court House Street, Calcutta.	44
19	Firma K. L. Mukhopadhyay, 6/1A, Banchharam Akrur Lane, Calcutta-12.	82
	DELHI	
20	Jain Book Agency, Connaught Place, New Delhi.	1
21	Sat Narain & Sons, 3141, Mohd. Ali Bazar, Mori Gate, Delhi.	3
22	Atma Ram & Sons, Kashmere Gate, Delhi-6.	9
23	J. M. Jaina & Brothers, Mori Gate, Delhi.	11
24	The Central News Agency, 23/90, Connaught Place, New Delhi.	15
25	The English Book Store, 7-L, Connaught Circus, New Delhi.	20
26	Lakshmi Book Store, 42, Municipal Market, Janpath, New Delhi.	23
27	Bahree Brothers, 188, Lajpatrai Market, Delhi-6.	27
28	Jayana Book Depot, Chapparwala Kuan, Karol Bagh, New Delhi.	66
29	Oxford Book & Stationery Company, Scindia House, Connaught Place, New Delhi.	68
30	People's Publishing House, Rani Jhansi Road, New Delhi.	76
31	The United Book Agency, 48, Amrit Kaur Market, Pahar Ganj, New Delhi.	88
32	Hind Book House, 82, Janpath, New Delhi.	95
33	Book well, 4, Sant Narankari Colony, Kingsway Camp, Delhi-9.	96
	MANIPUR	
34	Shri N. Chaoba Singh, News Agent, Ramlal Paul High School annexe, Imphal.	77
	AGENTS IN FOREIGN COUNTRIES	
35	The Secretary, Establishment Department, The High Commission of India, India House, Aldwych, London, W.C. 2.	