C. P. U. No. 61

COMMITTEE ON PUBLIC UNDERTAKINGS

(THIRD LOK SABHA)

FORTIETH REPORT
ON
MATERIALS MANAGEMENT IN PUBLIC UNDERTAKINGS

LOK SABHA SECRETARIAT
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(THIRD LOK SABHA)

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**Elected with effect from 7-8-1966 in the vacancy caused by the demise of Shri S. V. Ramaswamy. Shri S. V. Ramaswamy was elected w.e.f. 23-2-1966 in the vacancy caused by the resignation of Shri Harish Chandra Mathur.

***Elected w.e.f. 23-2-1966 in the vacancy caused by appointment of Shri Panampalli Govinda Menon as Minister.

†Elected w.e.f. 7-5-1966 on the retirement of Shri Lokanath Misra from Rajya Sabha on 2-4-1966.

‡Elected w.e.f. 7-5-1966 on the retirement of Shri T. S. Pattabhiraman from Rajya Sabha on 2-4-1966.

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INTRODUCTION

I, the Chairman, Committee on Public Undertakings, having been authorised by the Committee to submit the Report on their behalf, present this Fortieth Report on the Materials Management in Public Undertakings.

2. The first Report of the series of the Reports on various aspects of 'Management and Administration' of public undertakings dealing with planning of projects (13th Report of the Committee) was presented in December, 1965. The present Report is the second in this series.

3. The Report is based on the data furnished by the Ministries and the public undertakings. The Committee took the evidence of the representatives of the following Undertakings on the 16th and 17th December, 1966:

1. Fertiliser Corporation of India Ltd.
2. Hindustan Steel Ltd.
3. Heavy Engineering Corporation Ltd.
4. Heavy Electricals (India) Ltd.
5. Hindustan Machine Tools Ltd.
6. Indian Telephone Industries Ltd.
7. National Coal Development Corporation Ltd.
8. Oil & Natural Gas Commission.

4. The Committee also took the evidence of the representatives of the Ministries of Industry, Finance, Iron & Steel, Petroleum and Chemicals, Mines & Metals, and Supply, Technical Development & Materials Planning on the 17th December, 1966.

5. The Report was adopted by the Committee on the 3rd March, 1967.

6. The Committee wish to express their thanks to the various Ministries and the public undertakings for placing before them the material and information which they wanted in connection with the examination of the subject. They wish to thank in particular the

representatives of the Undertakings and the officers of the Ministries who gave evidence and placed their considered views before the Committee. They also wish to express their thanks to the non-official organisations/individuals who on request from the Committee furnished so readily their views on the subject.

NEW DELHI;
March 3, 1967.
Phalguna 12, 1888 (*S*).

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

I

INTRODUCTORY

The increasing pace of industrialisation in India has in its wake highlighted a number of management problems, an important one of which is cost control and cost reduction. It has been found that in Indian industries, cost of materials accounts for nearly two-thirds of the total cost of production *i.e.*, more than the combined amount spent on labour, overheads, and management. Therefore, in any scheme of cost reduction the determining factor must be the efficiency or otherwise of materials management.

Materials Management covers the entire range of functions which affect the flow, conservation, utilisation, quality and cost of materials. It is thus concerned with planning and programming of materials, purchasing, inventory control, receiving and warehousing, store keeping, transportation and handling of materials, scrap and surplus disposal and salvage.

2. Considerable attention is being paid to the materials management in other industrialised countries. For example in Japan, the materials cost which was 61·55 per cent of the production cost was reduced to 58·45 per cent. In U.S.A. it has been found that the adoption of one scientific inventory control technique namely the economic lot size in place of purchases on judgment basis has been responsible for reduction in total inventory investment by 20 per cent to 30 per cent without sacrificing customer service.

3. Unfortunately the importance of proper materials management has not been fully realised in India and very little attention has so far been paid to the task of controlling investment in inventories through the application of various scientific techniques. Thus according to an analysis of 34 running concerns in the public sector the total investment in inventories in 1964-65 was Rs. 269 crores. The total working capital for these concerns was Rs. 301 crores as on the 31st March, 1965. Thus 90 per cent of the working capital was locked up in inventories. Based on annual production also, the position was unsatisfactory, the inventories of 22 public sector industrial running concerns being of the order of Rs. 229 crores, which were equivalent to 11 months value of production (excluding depreciation).

4. The Committee, therefore, decided to make a horizontal study of the materials management in running concerns in the public sector. This study has revealed many short-comings in inventory management which have been discussed in the following Chapters.

II

INVENTORIES

Total value

5. The value of inventories of 34 running concerns in the public sector as on the 31st March, 1965 was Rs. 269 crores. Out of this the inventories held by 12 non-industrial concerns was about Rs. 40 crores. The value of inventories of the 22 industrial running concerns was thus Rs. 229 crores at the end of 1964-65 as compared to Rs. 201 crores at the close of the previous year. On an average these worked out to 11 months cost of production. Excluding the inventories held by Hindustan Steel Ltd., which can be treated in a class by itself because of its size and large investment, the inventories of the other industrial running concerns amounted to Rs. 126 crores, representing average of 15 months production as compared to 13 months during the year 1963-64.

6. The inventories held by various concerns in terms of value and number of months' production are given below:—

	Cost of Production (excluding depreciation) 1964-65	Inventories at the end of 1964-65	Inventories in terms of number of months cost of Production
1	2	3	4
		(Rs. in crores)	
1. Hindustan Teleprinters Ltd. .	0·55	1·79	39
2. Hindustan Aeronautics Ltd. .	13·77	42·73	37
3. Hindustan Shipyard Ltd. .	3·99	10·48	31
4. Bharat Earth Movers Ltd. .	1·48	3·42	28
5. Bharat Electronics Ltd. .	4·79	10·25	26
6. Praga Tools Ltd. . .	1·14	1·30	14
7. Hindustan Salts Ltd. .	0·90	1·00	13
8. Indian Telephone Industries Ltd.	8·50	9·43	13

1	2	3	4
		(Rs. in crores)	
9. National Coal Development Corporation Ltd. .	16·91	16·51	12
10. Hindustan Antibiotics Ltd. .	2·82	2·29	10
11. Hindustan Machine Tools Ltd.	8·02	5·76	9
12. Hindustan Cables Ltd. .	3·41	2·38	8
13. Hindustan Steel Ltd. .	147·30	102·68	8
14. Fertilizers and Chemicals Travancore Ltd. . .	5·52	3·55	8
15. National Instruments Ltd. .	0·75	0·52	8
16. Indian Rare Earths Ltd. .	0·63	0·35	7
17. Fertilizer Corporation of India Ltd. . . .	18·63	9·22	6
18. Garden Reach Workshop Ltd.	2·83	1·45	6
19. Mazagon Dock Ltd. . .	3·66	1·86	6
20. Hindustan Insecticides Ltd. .	1·12	0·47	5
21. Hindustan Housing Factory Ltd.	1·11	0·44	5
22. National Newsprint & Paper Mills Ltd.	2·29	0·77	4
TOTAL :	250·12	228·65	AVERAGE 11

7. It will be seen from the above statement that the inventories held were equivalent to more than 24 months cost of production in the case of 5 concerns, over 12 months but less than 24 months in the case of three concerns, over 6 months and upto 12 months in the case of 8 concerns and 4 to 6 months in six concerns only.

8. The Committee were informed during evidence that the inventories in an industrial enterprise consisted of raw materials, components, stores & spares, work-in-progress, finished goods and other items. The stocks of raw materials, components, stores & spares had to be related to consumption and the finished and semi-finished goods to sales during a particular period. The value of inventories for a particular item depended on the souce of procurement—indigenous or imported and the conditions of the market, etc.

However, on an average, in a heavy industry like Hindustan Steel Ltd. or Heavy Engineering Corporation Ltd. the stock of raw materials and stores might be for four to six months requirements depending upon the source of procurement. The finished goods on the other hand should not be for more than two months sales.

9. It was agreed that the inventories in some of the public undertakings had been on the high side.

10. In this connection it is significant to note the position about inventory holdings of the companies in the private sector. According to an analysis by the Department of Statistics and the Division of Monetary Economics of the Economic Department, the overall inventories of 1,333 selected non-official, non-Government, medium and large public limited companies were equivalent to 3·6 months value of production in 1963-64.

11. *Even granting that the inventories in any concern vary according to the nature of the undertaking and the type of materials required and thus the average inventory holdings in the private sector companies may not be quite comparable with those in the public sector undertakings, the holding of inventories to the extent of 15 months value of production can by no means be justified. It needs hardly any emphasis that the reduction of inventories can help in releasing the capital so scarce in the country and in conserving valuable foreign exchange. Any avoidable locking up of capital in inventories deprives some other essential project or programme of finance. Further, inventories also cost a good deal by way of interest charges, cost of storage and handling, deterioration and obsolescence costs. Even on a conservative estimate, the cost of carrying inventory is estimated at a minimum of 15 per cent per annum. To the extent that there are excessive inventories, the cost of production as well as the profitability of a concern is affected.*

12. *Thus, if the inventories of industrial running concerns could be reduced to 6 months production—which would by no means be difficult—it would mean release of capital to the extent of Rs. 104 crores, which could be gainfully employed either in the undertaking or to finance some other essential project or programme. Further, leaving aside the profit which might have been earned on this investment, this would have resulted in reducing the inventory carrying cost to the extent of Rs. 15·60 crores. (On the basis of 15 per cent inventory carrying cost). It is significant to note the effect of this saving on the profitability of the public undertakings. The net profit of these 22 undertakings was only Rs. 10·19 crores during*

the year 1964-65. With proper inventory control alone the profit would have been two and a half times of the present profit of these concerns.

13. *The Committee also note with concern that the value of inventories of 21 industrial running concerns in 1964-65 instead of decreasing had increased as compared to 1963-64, and was equivalent to 15 months value of production as compared of 13 months during the previous year. Evidently no concerted efforts have been made by the undertakings towards materials management and the application of various scientific techniques to control inventories.*

14. The Committee discussed during evidence whether the administrative Ministries exercised any control to ensure that the undertakings were following the correct systems and procedures relating to materials management. The Secretary of the Ministry of Industry stated that each undertaking was primarily responsible for materials management and it was expected to have an efficient organisation to deal in a business like way. It was the function of the General Manager and the Board of Directors to attend to the materials management work as a part of their responsibilities. Government had not, therefore, issued detailed instructions to the undertakings in this regard. It was, however, added that recently Government had decided to appoint a high level Committee to study the systems of inventory management in selected undertakings, *viz.*, Hindustan Steel Ltd., Fertilizer Corporation of India, Heavy Electricals Ltd. and National Coal Development Corporation.

15. *It has been stated earlier that materials costs usually constitute about two-thirds of the total cost of production in an undertaking. Economy in materials costs is, therefore, a vital factor for the profit-earning capacity of an undertaking. The Committee regret to note that the administrative Ministries have not given enough care and attention to the materials management problems in the undertakings under their control. From the experience of working of several undertakings, Government had the advantage of knowing as to what basic principles of material control systems and techniques were suited to the undertakings and to what extent there were deficiencies in various undertakings. It was, therefore, expected of the administrative Ministries to issue suitable instructions to provide guidelines to the undertakings for implementation. The Committee trust that in future the materials management systems in the public undertakings would receive due attention of the Ministries and suitable instructions issued by them, wherever considered necessary.*

Stores and Spares

16. The inventories in an industrial concern consist of raw materials, components, stores & spares, work-in-progress and finished goods. It was noticed that the main reason for heavy inventories in public undertakings has been the large stock of stores and spares. In some of the undertakings, the stock was of even more than three years consumption as shown in the following statement:—

Name of the Undertaking		1962-63		1963-64		1964-65	
		Value of stock	Stock in terms of months consumption	Value of stock	Stock in terms of months consumption	Value of stock	Stock in terms of months consumption
		1	2	3	4	5	6
		(Rs. in lakhs)		(Rs. in lakhs)		(Rs. in lakhs)	
1. Air India	Maintenance and other spares	5,39·07	75·6	5,79·00	57·6	7,80·17	61·2
2. Fertilizers & Chemicals Travancore Ltd. . . .	Machinery stores, & spares . .	71·12	52·8	94·60	120·0	102·43	117·6
3. Fertilizer Corporation of India Nangal Unit . . .	Spares . .	76·19	52·8	98·36	40·8	109·02	43·2
Sindri Unit . . .	Spares . .	353·59	54·8	426·93	66·00	401·36	64·8
4. Hindustan Steel Ltd. (Durgapur Steel Plant) . . .	Stores & Spares .	784·01	24·0	886·03	49·2	1036·61	55·2
5. Indian Airlines Corporation .	Consumable stores .	330·62	33·6	385·00	38·4	417·12	40·8
6. Oil & Natural Gas Commission	Stores & Spares .	1672·00	74·4	2180·00	45·50	2660·00	50·4

17. In ONGC it was noticed that there was gross over-provisioning of imported stores. A few specific instances of excessive imported stores lying at Sibsagar project are given below:—

Name of the Article	Quantity in stock No. of items	Consumptio during 1964-65	Sufficient on that basis for
			years
Shoe	8991	6	1,498
Rubber Piston 185 mm. .	436	1	436
Spring for valve Disc. Dia 150 mm.	2018	32	63
Bit Three Blade welded No. 16 with 6·5/8 Box . . .	346	8	43
Piston of 200 mm. . . .	85	2	42
Air Tube Clutch Assy. 700 mm. X 200-W. . . .	153	4	38
Rotor & Starter Disc. . .	7285 .	Nil	Indefinitely
Filter plate . . .	2626	Nil	Do.
Thrust Bearing Ring .	2468	Nil	Do.

In the Report on the working of the Stores Organisation of Oil & Natural Gas Commission (February, 1966) it was mentioned that many more instances of this type can easily be cited in respect of the same project, as also in respect of almost every other project. The overall position may indeed be worse in the case of many other projects.

18. In explanation of the reasons for heavy stock of stores & spares it was stated by some undertakings (*e.g.* National Coal Development Corporation, Air India) that due to lack of previous experience, the undertakings had to depend on the advice of the suppliers of the plant and machinery or the collaborators in determining as to the type and the quantity of spares to be stocked. It had been found that the quantum of spares recommended for initial purchase along with the plant and machinery was very large (10 to 15 per cent of the total value of equipment). These were found to be more than generally required and there were large number of slow moving spares which were not required over long periods. In some cases, the items supplied were not found suitable under conditions prevailing in the country.

19. *The Committee are concerned over the heavy stock of stores & spares in the public undertakings, which in some of the undertakings, based on the present rate of consumption, would be sufficient for several years to come. It is unfortunate that the spares offered by the suppliers of plant and machinery/collaborators should have been accepted by the undertakings without any review of the actual need for them.*

20. *The Committee also find that as stated in para 16 above, in many of the public undertakings, the stock of stores and spares as compared to consumption during the year has increased in 1964-65 over that in 1962-63. It is therefore evident that not only was there heavy initial purchase of spares, but subsequently, the stores and spares have been purchased without proper assessment of requirements and/or without taking into account the stores and spares already in hand.*

21. The absence of proper control over the purchase of spares has resulted in heavy accumulation of slow moving/non-moving/ surplus stores in the public undertakings. Some of the instances are given below:—

Air India	Rs. 52·71 lakhs. Stores & Spares not moved for more than three years as on 31-3-65.
Fertilizers and Chemicals Travancore Ltd.	Rs. 16·64 lakhs stores not moved for three years.
Indian Airlines Corporation	Rs. 62·45 lakhs spares not moved for more than 3 years.
Fertilizer Corporation of India (Sindri Unit)	Rs. 92·43 lakhs Surplus stores as on 31-3-65
(Nagal Unit) .	Rs. 6 38 lakhs as on 31-3-65
Heavy Electricals Ltd. .	Rs. 30·00 lakhs surplus stores
Hindustan Steel Ltd. . Bhilai Steel Plant .	Rs. 251 lakhs surplus stores (imported items valued at Rs. 122 lakhs).
Rourkela Steel Plant . .	Rs. 607 lakhs stores not moved for over 1 year ; (Materials worth Rs. 9·28 lakhs declared surplus)
National Coal Development Corporation Ltd.	Rs. 111·07 lakhs stores not moved for 3 years in 13 units.
Oil & Natural Gas Commission	Rs. 96·45 lakhs stores not moved for two years.

22. It was also pointed out in the Audit Report (Commercial), 1966 that in certain undertakings *e.g.* Hindustan Insecticides Ltd., Hindustan Photo Films Manufacturing Co. Ltd., Hindustan Cables Ltd., Garden Reach Workshop Ltd., National Instruments Ltd. etc. there was no regular system of determining periodically the surplus/unserviceable/obsolete stores and of their disposal without undue delay.

23. In the following undertakings there was no disposal of surplus stores during the years 1962-63 to 1964-65:—

(1) Coal Washeries of Hindustan Steel Ltd.

(2) Manganese Ore (India) Ltd.

(3) Mazagon Dock Ltd.

(4) National Projects Construction Corporation Ltd.

24. *From the foregoing paras it is evident that not only were there excessive purchases of stores & spares but no serious efforts were made to control the inventories through regular periodical review of items in stock to locate the non-moving/surplus stores and to dispose of the unwanted stores without undue delay.*

The Committee therefore desire that the public undertakings should review the systems prevalent in their concerns about the planning and purchasing of stores and spares and also review the items in stock to ensure that the undertakings are not burdened with excessive stocks. Some of the techniques generally adopted for inventory control are discussed in the subsequent chapters of this Report.

Finished and Semi-finished goods

25. The average work-in-progress in the industrial running concerns at the close of the year 1964-65 was equivalent to about seven weeks cost of production as compared to six weeks in the previous year. The main increase was in Hindustan Aeronautics Ltd., where the value of work-in-progress rose from Rs. 11.44 crores in 1963-64 to Rs. 15.73 crores in 1964-65. This was equivalent to 13.7 months cost of production as compared to the average of six weeks for all the industrial running concerns. The other undertakings in which the work-in-progress was more than 3 months cost of production (as against the average of seven weeks) were Hindustan Shipyard Ltd. (19.2 months), Bharat Electronics Ltd., (6.5 months), Hindustan

Teleprinters Ltd. (6.5 months), Praga Tools Ltd. (3 months), Garden Reach Workshops (3.2 months).

26. As regards finished goods, the average stock of finished goods in industrial running concerns was worth five weeks sales in 1964-65. In some of the undertakings, however, the stock of finished goods was worth even more than 3 months sales e.g. Hindustan Salts Ltd. (11.8 months), Bharat Electronics Ltd. (3.7 months), Hindustan Aeronautics Ltd., (3.5 months), and Heavy Electricals Ltd. (3.8 months).

27. During evidence, the Chairman, Hindustan Steel Ltd. stated that in some cases, the stock of finished goods was more because of changes in the demand for the products. As an instance he pointed out that although the Railway Board had asked Hindustan Steel Ltd. to increase the production of rails as they would require 5 lakh tonnes of rails during the year 1966-67, the order was suddenly reduced to 3 lakhs tonnes. Similarly although the sleeper plant at Durgapur Steel Plant was installed to supply sleepers to the Railways, the Railway Board decided subsequently to go in for cement sleepers. It was also pointed out by the representative of Heavy Electricals Ltd. that in certain cases, although the goods were manufactured against orders, the customers (State Electricity Board) requested for postponement of deliveries for want of funds.

28. In this connection it was noticed that in the past the contracts entered into by the Heavy Electricals Ltd. did not provide for the levy of storage charges etc. in the customers failing to accept goods according to the delivery schedules. *In order to guard against the accumulation of finished goods, it is desirable that the public undertakings should enter into firm contracts before taking up the production of items as are specially manufactured for a particular customer. The agreements should also provide for the levy of storage charges etc. on the failure of the customers to lift the goods according to the delivery schedules.*

29. *The Committee also noted that some of the public undertakings* e.g. *Garden Reach Workshops, Indian Telephone Industries Ltd. etc. have not fixed any limit for stocking of finished and semi-finished goods. In order to have a check on their stock, it is essential that suitable limits for finished and semi-finished goods should be laid down and the actuals compared periodically with the limits so fixed.*

Methods of inventory control

30. For proper inventory control it is essential to adopt the scientific practices and techniques that have been developed in this regard.

Some of the main techniques generally followed and the extent to which the public undertakings have adopted them are discussed below:—

Classification and Codification

31. A proper and systematic classification and codification is necessary as a basic measure for control of inventories. Classification is the systematic arrangement of similar items into suitably selected categories. For want of proper classification and codification, there are instances of identical items being stocked under variety of names and descriptions. Thus it was reported that in Oil and Natural Gas Commission even in the case of imported items, sometimes imported from the same country, identical items were found to have been named differently, creating considerable confusion in almost all the store establishments. Similarly in Fertilizer Corporation of India it was found by a team of two officials appointed to examine the inventory position that nomenclature of even similar items often varied depending upon description given by the supplier with his quotation. The result was that similar materials with minor differences in specifications or description were kept under different folios.

Absence of proper classification and codification was also noticed in many other undertakings like Hindustan Antibiotics Ltd., Hindustan Shipyard, etc.

32. *In the absence of proper classification and codification no check or control can be exercised over the existing stock and there can be instances of items of stores being purchased while similar items may be lying in stock bearing a different nomenclature. It is, therefore, necessary to classify properly all the items held in stock and also to standardize their nomenclature. Each category should also be given a distinctive code number so as to facilitate a quick and sure identification. If necessary, a separate cell may be created in the stores Department to undertake this work. Necessary catalogues should also be prepared by this cell and made available to all concerned to acquaint them about the items of stores available in stock. This will enable the plants to utilise the existing stocks to the best advantage and to avoid unnecessary purchases.*

Variety reduction and Standardisation

33. Another reason for large inventories in public undertakings was that the items of stores were of multitudious variety. Thus in

Oil & Natural Gas Commission it was found that in the same project different makes of machines were being used for identical purposes. This was true not only of imported machinery and equipment but also of indigenous makes. As an instance in the case of 3 ton trucks—Bed fords, Fargos and TMBs were all in use simultaneously in most of the projects. The result was that each major project had to stock about 3000 to 4000 categories of spare parts pertaining to motor vehicles alone.

34. Similarly in Hindustan Insecticides it was noted that at the end of 1964-65 there were too many varieties for certain items of stores e.g. valves—150 varieties, Ball & Roller Bearings—64 varieties, MS Bolts and nuts—44 varieties, Drills H.S. (S.S. & T.S.)—36 varieties, etc.

35. In yet another undertaking namely Fertilizers & Chemicals Travancore Ltd., there were nearly 100 varieties of electric motors. There were too many varieties of tools, oils, paints, enamelled copper-wire electrodes, heat exchangers, pumps, oil seals, valves, ball-bearings, various hardware items, printing and stationery items and so on. There were 26000 stock items. A firm of Consultants suggested that by standardisation and variety reduction this number could be brought down to 16,000.

36. *The consequence of such large varieties of similar items of stores is that the undertakings have to stock adequate quantities of all the spares pertaining to each type in use so as to be able to keep all the machines in working order, resulting in high inventories.*

37. *Effective steps have been taken in other countries for cost reduction through reduction in the number of stores items. The Committee understand that some of the leading firms in England reduced their number of stores items by 16 per cent. to 70 per cent. or an average of 40 per cent which resulted in an average cost reduction of 80 per cent. An American firm reduced the number of its regular stores items by 55 per cent. It is therefore evident that there is great scope for cost reduction in public undertakings in India through reduction of varieties of stores. Standardisation of stores items is therefore an urgent necessity. This will help in reducing work load through bulk purchases of fewer items, in securing economical prices, in minimising capital investment on a variety of stocks, and in reducing the materials cost.*

38. Machine tool manufacturers in USSR use about 40 per cent standardized components. Apart from standardization at the national level, there are special research institutes for standardization at the

plant level. This has helped machine building industry to effect substantial reduction in variety of sizes with consequent economy and facility of mass production.

39. *The Committee find that although the public undertakings are conscious of the need for standardisation and certain steps have been taken by some of them in this direction, there is still a great leeway to be made. The Committee therefore desire that the matter should be pursued vigorously by the public undertakings in coordination with the Indian Standards Institution or other spscialised agencies. They would like to point out that the aim of standardization should be to have uniform standards for similar items, and the standards evolved should take cognizance of indigenous availability of materials to the maximum extent possible.*

A. B. C. Analysis

40. Besides proper classification and codification, the most popular method of inventory control is the method known as 'selective inventory control'. This is based on an analysis of high value (A) medium value (B), and low value (C) stores in terms of value of annual consumption.

41. A general characteristic of most inventories is that some items have higher usage value than others and a few items of high value account for the large percentage of value of annual consumption of materials. Thus in Hindustan Insecticides it was reported that 1 per cent of the total number of items accounted for 95 per cent of the total annual consumption of material worth Rs. 38·23 lakhs Similarly in Fertilizers and Chemicals Travancore Ltd. besides the five raw materials, only 6 per cent of the moving items or less than 3 per cent of the total number of items accounted for 85 per cent of the total values of annual consumption amounting to Rs. 87·12 lakhs. In Fertilizer Corporation of India Ltd. also 8 per cent of the total items accounted for 82 per cent of the total value of annual consumption. It is therefore evident that the inventory of such items of high value (A items) needs pin point control.

42. The Committee however find that in many of the public undertakings *e.g.*, Oil and Natural Gas Commission, Heavy Electricals Ltd. Bharat Electronics Ltd., Garden Reach Workshop, etc., such an analysis of all the items in the stores has not been made. In the absence of such analysis all items regardless of their consumption value and importance are subjected to the same degree of control. On the other

hand such an analysis helps to concentrate effort in areas which need it most.

In respect of 'A' items careful attention can be paid to estimates of requirements, purchase scheduling, safety stocks and prompt receipt and inspection. Their deliveries can be staggered and arranged on monthly, weekly or even daily basis according to the circumstances in each undertaking, which would help in keeping down the investment in inventories. Close watch can be maintained on their consumption, stocks and progress of replenishment orders. On the other hand on the numerous but inexpensive 'C' items, control can be comparatively relaxed and liberal safety stocks kept. *Thus with A. B. C. analysis, it is possible both to minimise the risk of stockouts and to reduce investment in inventories. The Committee therefore desire that such an analysis should be made urgently by all the public undertakings. Further, determination of the maximum and minimum stocks of 'A' class items, their replenishment intervals, the quantities per replenishment order and the frequency of the reviews should be the responsibility of the top management.*

III

ORGANISATION

43. The fundamental objective of materials management is to see that the right quantity of material, of right quality, is bought at the right price, and at the right time. The organization for materials management thus involves planning and programming for purchases, procurement, inspection, storage, handling of materials inside the works and effective control over the inventories, etc.

44. The modern trend is to have an integrated Materials Management Department performing all these functions rather than to have different departments, performing these various functions in isolation. It is, however, noted that there is no set pattern followed by the public undertakings for materials management. Thus while in some of the undertakings there is an integrated organisation under a common head to discharge various materials management functions, in others there are two or three different departments under different heads to perform these functions. Some of the practices followed by the Public Undertakings are discussed below:—

Separation of indenting and purchasing functions:

45. It is noted that in Indian Telephone Industries Ltd. and Heavy Electricals Ltd. the indenting and purchasing functions are performed by the departments functioning under different heads. The production managers of the two main production units of Indian Telephone Industries Ltd. are responsible for initiating action for the procurement of stores both foreign and indigenous and to raise purchase requisitions on the Purchase Department. Similarly in Heavy Electricals Ltd., the factory Departments place indents on the Purchase Department. *Such separation of indenting and purchasing functions is not conducive to efficient materials management. The problem of providing materials to the users in the right quantity at the right time and at the lowest over-all cost, taking into consideration the buying cost and the inventory carrying cost, requires organisational coordination of indenting and purchasing function and it is therefore desirable to have the indenting and purchasing functions under a common head.*

Different Departments for Stores

46. In Heavy Electricals Ltd., there are several organisations for stores. Whereas the Central Stores, under the Manager Purchasing and Main Stores, stock materials common to more than one division, there are Divisional Stores also under the Works Managers which stock materials pertaining to/or which are special to the products of the respective division. *Besides difficulty of co-ordination such a division of stores under the Works Managers instead of having them under the control of Central Stores Organisation results in loading the production departments with avoidable work. If relieved of the inventory responsibility the line managers can devote more time to their primary duty of production.*

Similarly in Oil & Natural Gas Commission it was noticed that there were several project store establishments with no organisatoin to co-ordinate and control their holdings. Each store which functioned as a self-contained unit tended to be self-sufficient in the matter of all its requirements although some of its requirements could be met by stores lying surplus in the neighbouring project stores. This resulted in locking up of considerable amount of capital in surplus stores.

Separation of Purchase and Stores Departments

47. In some of the undertakings *e.g.* Hindustan Antibiotics Ltd. and Hindustan Machine Tools Ltd., there is no common Head of Department for Stores and Purchase Departments. In Hindustan Antibiotics Ltd., these two departments function independently under the Managing Director. In Hindustan Machine Tools Ltd. the Stores Department and the Materials Planning are under the Deputy General Manager but the Purchase Department is directly under the General Manager. *Such separation of Stores and Purchase functioning under two different self contained Departments meeting at the level of General Manager/Managing Director is not conducive to efficient materials management function.*

48. *There are different types of organisational set ups in the public undertakings for materials management. While it is difficult for the Committee to suggest any ideal organisational pattern which would suit all the public undertakings, the Committee are in favour of the undertakings having an integrated organisation for all materials management functions. Although such an organisation may have different units/departments, it should be under overall control of a percon who should be of sufficiently high status as the Finance or the Production Departments head. The Committee therefore*

desire that the present organisational set up for materials management in different public undertakings should be reviewed to examine as to what extent these require modifications to suit the requirements of each undertaking and to ensure effective control.

Central Purchase Organisation

49. At present quite a few undertakings are multi-unit organisations. Some of them are:—

(1) Indian Oil Corporation (Refineries at Gauhati, Barauni and Koyali)

(2) Indian Drugs and Pharmaceuticals Ltd. (Units at Rishikesh, Hyderabad and Madras)

(3) Fertiliser Corporation of India (Units at Sindri, Nangal, Trombay, Gorakhpur, Namrup and Durgapur)

(4) Hindustan Machine Tools Ltd. (Units at Bangalore, Pinjore, Kalamassery and Hyderabad)

(5) Bharat Heavy Electricals Ltd. (Units at Tiruchirapalli, Hyderabad and Hardwar)

(6) Hindustan Steel Ltd. (Units at Bhilai, Rourkela and Durgapur).

The Heavy Engineering Corporation has three separate units all located at Ranchi. The Oil and Natural Gas Commission has several projects located at different places in the country.

50. Generally, the aforesaid undertakings have separate purchase organisations for their different units, but for certain items, purchases are made centrally. Thus in Indian Oil Corporation cement and steel are purchased by Calcutta Office of the Corporation both for the Gauhati and Barauni Refineries. In Indian Drugs and Pharmaceuticals Ltd., each project makes its purchases, except in cases where it appears that there would be definite advantage in bulking of requirements by the Central Office. In Fertiliser Corporation of India, purchase of steel and cement is made centrally by Central Purchase Office, Calcutta and other items are procured by the units direct. In Hindustan Machine Tools Ltd. some of the imported items are bulked and purchased by one of the units, otherwise each unit buys its own materials. In Oil and Natural Gas Commission, the Central Purchase Organisation purchases items required in bulk (mud chemicals, oil and lubricated etc.), certain imported

items and other items of common use. In Hindustan Steel Ltd., however, each plant makes its own purchases.

51. The Committee discussed during evidence the relative advantages of having a central purchase organisation in each undertaking. It was felt by the representative of Fertiliser Corporation of India Ltd. that in their case it would not be advantageous to have a central purchase organisation as the raw materials required for the various units were different. Further, because of large requirements, these raw materials were already being purchased in bulk. It was also contended that central purchases might result in delays and the unit concerned might suffer in production as the sense of urgency for a raw material was much more in the unit itself than in a centralised organisation, for which an item was one of the many items they had to purchase.

52. As for the Hindustan Steel Ltd., which also had different purchase organisations for each steel plant, the Chairman, Hindustan Steel Ltd. stated that the purchases were decentralised in September, 1963 on a directive from Government. But it was found that this resulted in certain additional avoidable expenditure. It was found during one year of its operation that the price of materials purchased by one of the steel plants for certain items was more than that paid by the other two steel plants. It was, therefore, decided to have some degree of centralisation. Hence, although the purchases are still made at the plant level, the three Controllers of Stores and Purchases meet frequently to make sure that the price levels are kept at the same level and joint arrangement is also made for proper distribution among all the plants of any raw material found in short supply at any time.

53. The Chairman, Heavy Engineering Corporation Ltd. also informed the Committee that complete decentralisation of all the purchases was found to be uneconomical and it was noticed that the three plants of Heavy Engineering Corporation Ltd. were paying different prices for the same items and there was no co-ordination. It was therefore decided to have some degree of centralisation for items of common use and the Controller of Purchases was asked to fix the suppliers, the rates etc. for such items.

54. *The location of various units of an undertaking at different places in the country creates special problems of planning, programming and provisioning of materials. It is, therefore, essential that a general pattern of organisation applicable to the various multi-unit organisations should be evolved. The Committee feel that if the*

purchases are decentralised wholly or substantially there are dangers of high overall purchasing costs, coupled with dangers of unhealthy buying competition among the units of the same undertaking. The Committee are of the view that there should be Central Control and/or co-ordination among all the units of an undertaking with regard to (i) items of common use and (ii) items which are imported. In all these cases even if it is not considered feasible to have complete centralisation of all purchases, there should be substantial degree of central control in the matter of fixing suppliers, the prices, the methods of purchases, etc. Once these are fixed, each unit could negotiate with the suppliers about the quantities to be purchased, delivery time etc. according to the individual requirements.

Organisational set up for inspection of incoming materials

55. The Committee noticed that there was no uniformity in the practice followed by the public undertakings regarding the organisational set up for inspection of incoming materials. Thus, in Fertilisers and Chemicals Travancore Ltd. the inspectors report to the Stores Superintendent. Similarly in Garden Reach Workshop inspection is done by staff deputed to the Stores Department. In some other undertakings the inspection of stores is done by the consuming departments themselves *e.g.*, in Fertiliser Corporation of India Ltd., Hindustan Insecticides Ltd., Indian Oil Corporation Ltd., Indian Rare earths Ltd., Mazagon Dock Ltd. etc.

Even out of the undertakings where a separate Inspection Department has been created, in some of these it is under the overall control of the Controller of Stores & Purchases (*e.g.* in Bhilai, Durgapur and Rourkela Steel Plants, Neyveli Lignite Corporation, etc.) whereas in others (*e.g.* Heavy Electricals Ltd., Heavy Engineering Corporation Ltd., Indian Telephone Industries Ltd., Hindustan Shipyard, Mining & Allied Machinery Corporation Ltd. etc) it is independent of Stores & Purchase Department.

56. The Committee were informed by Hindustan Steel Ltd. that for large undertakings there ought to be a separate Inspection Department for inspection of incoming materials. However, where range of materials is large it is not practicable to employ specialists to cover all materials, and the help of the indenting departments and their specialists is necessary in such cases. Another important reason why inspection by the indenting department is sometimes unavoidable is that indigenous suppliers can very rarely supply items exactly to the specifications of the original imported items in use. *Judgment is therefore involved in regard to the use of the substitutes* and the indentor is in the best position to do so.

57. As regards the overall control over the Inspection Department opinion was divided as to whether it should be under the control of the Materials Management Department or independent of it. Some of the undertakings like Indian Telephone Industries Ltd., Heavy Engineering Corporation Ltd., Heavy Electricals Ltd., Oil & Natural Gas Commission favoured an independent Inspection Department, while National Coal Development Corporation felt that the inspection cell should be attached to the Materials Management Department.

58. *The Committee feel that the organisational set up for inspection in the public undertakings requires to be reviewed with the object of evolving a uniform pattern which will be best suited to the requirements of these undertakings. In the opinion of the Committee the inspection should be carried out by a separate wing which should be under the overall control of the Materials Management Department. The responsibility of providing materials in right quantity, of right quality and at right time is that of the Materials Management Department and to achieve this objective it is necessary that the inspection wing should be under this integrated organisation. The Inspection wing could of course take the assistance of technical personnel in the users/production department for inspection whenever necessary before materials are accepted.*

IV

TRAINING

59. Materials management has reached a stage where it is not a matter of intelligence alone; it must also be aided by scientific techniques. It is therefore necessary to evolve a system of training men who are concerned with materials planning, purchasing and stores control. Sufficient care needs to be taken in the selection and training of these personnel for on their performance depends the efficiency of the materials management department and the efficacy of control.

60. It was however noted that barring a few undertakings like Hindustan Steel Ltd., Heavy Engineering Corporation Ltd., National Coal Development Corporation, Oil & Natural Gas Commission etc. there were no proper arrangements in the public undertakings for the training of the persons discharging materials management functions. It was pointed out by some of the undertakings that the persons received on-the-job training while discharging their functions. Some of the undertakings had also sent their officers for short duration training courses or to attend seminars on materials management arranged by some institutes, such as National Productivity Council, Indian Institute of Management, Calcutta and Ahmedabad, Administrative Staff College, Hyderabad and National Institute of Technical and Industrial Education, Bombay.

61. *The Committee however feel that such* ad hoc *short courses or on-the-job training alone cannot serve the purpose and there is need for sustained training in materials management. The Committee, therefore, consider that the existing training facilities in the public undertakings need to be strengthened.*

V

PROGRAMMING AND PROVISIONING

62. The primary objectives of inventory management are:—

(i) To minimise idle-time by shortages of raw materials; stores or spare parts, etc.

(ii) To keep down capital investment in inventories, inventory carrying charges and obsolescence and other losses.

The two objectives are in conflict and efficiency of inventory management lies in balancing one against the other with a view to arriving at the optimum overall result.

63. Thus planning and programming of materials is the primary and by far the most important part of materials management work. Absence of planning and programming, or if the planning and programming is too rigid or too slack, it can result in buying too much or too little. It also results in numerous petty and rush purchases which tend to inflate the prices, involve extra transportation cost and increased work all round. Surpluses and shortages may go hand in hand in an enterprise in which inventory management is not satisfactory.

64. The Committee noticed that in several undertakings there was high percentage of orders for small value and/or local emergency purchases. Thus in Heavy Electricals Ltd., 80 per cent of the orders placed in 1963-64 were for Rs. 5000 or less with over 50 per cent for less than Rs. 1000. In terms of value, these 80 per cent of the orders accounted for less than 10 per cent of the total value of orders placed in 1963-64. Similarly in Hindustan Insecticides Ltd., it was reported that purchases valued at under Rs. 500/- accounted for 76 per cent of purchase orders in 1964-65. Yet in another undertaking *viz.* Fertilisers & Chemicals Travancore Ltd. out of 3995 purchase orders in 1963-64, 45 per cent were issued for petty purchases. A very large number of the orders were rush purchases.

65. *Such a large percentage of orders for small values in some of the public undertakings indicates that there was no proper planning and programming for materials. It was admitted during evidence*

that a large number of orders of small value was not good and the system of planning should be such that normally no occasion arises for an emergency purchase except in unforeseen circumstances. The Committee therefore desire that the undertakings should review the system of planning and programming to ensure proper inventory management. A periodical report about rush purchases should also be sent to the head of the undertaking.

66. *The Committee would also like to point out that for proper materials planning it is vitally important that there should be close liaison between the Production Department and the Materials Management Department. For principal materials, it is necessary that the Materials Management Department is given a reasonably accurate forecast of both the short term and long term production programmes. Based on the production schedules, the Materials Management Department could prepare details of their immediate and forward requirements in relation to stock in hand and ordered and other relevant factors to determine further orders to be placed and the delivery schedules for the materials.*

It is also essential that the Materials Management Department is kept informed of any changes in sales/production schedules which may be necessitated from time to time. Similarly the Materials Management Department should keep Production/Sales Departments advised of any difficulty arising in the flow of materials.

Replenishment System—Stock Items

67. *In regard to items of regular use (usually referred to as stock items or repetitive stores) it is desirable to have a system of autumatic replenishment based on re-order levels. In the absence of such a system supplies are arranged on the basis of indents from consuming Departments. This procedure leads to excessive stock for the following reasons:—*

(i) Since replenishments are arranged only on the basis of indents from consuming Departments it becomes the responsibility of these Departments to submit timely indents with a view to maintaining a continuous flow of materials required by them. Accordingly, each consuming Department is obliged to keep track of supplies of materials it uses. Since they are not in a position to keep an up-to-date record of supplies, it does happen sometimes that they are late in submitting fresh indents and thus face stock-outs. Stockouts, whether actually faced or apprehended, cause a scare and the scare results in unnecessary and extravagant indenting.

(ii) Every indentor is treated separately so that supplies of an item obtained against his indent(s) are as a rule reserved for him and fresh supplies are arranged for another indentor requiring the same item. Consequently a surplus created by an indentor persists even though other indentors may be in need for the same item.

(iii) Since an indentor can normally draw supplies only against his own indents, he has to maintain his own safety stock. With each indentor maintaining his own safety stock, the cumulative surplus rises high.

68. *It is therefore essential that the items of regular use should have a system of automatic replenishment based on minimum, maximum and re-order levels**. The Committee noticed that many of the public undertakings (*e.g.* National Mineral Development Corporation, National Newsprint & Paper Mills Ltd., Hindustan Salts Ltd., etc.) were not following this procedure and had not fixed these limits. In some other undertakings where these limits have been fixed, this has not been done in a systematic manner. Thus in the Report of the special officer (Feb. 1966) appointed to study the inventory position in Oil & Natural Gas Commission, it was pointed out that maximum and minimum limits for all items which are stocked for recurring use were directed to be fixed over five years ago. An attempt was however, made only a few months ago to implement these instructions and in consequence some items of recurring use available indigenously have been alloted maximum and minimum limits as well as re-ordering levels in some of the project stores. But neither all the items of recurring use nor all the stores holding them have yet been covered. Even that which has been accomplished seems to have been done in a great hurry. The requisite limits and the levels have thus been determined simply on the basis of previous years consumption or at the instance of the users themselves, and not as a result of any systematic examination of each proposition by a Committee of local officers as was originally contemplated and is really necessary to meet the requirements of the situation.

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*Minimum level: The Minimum level is the level below which available supplies should never drop so as to take care of unforeseen circumstances.

Re-order level: It is the level at which a replenishment order should be issued to ensure that fresh supplies will arrive sufficiently in time to keep the item from running out of stock.

Maximum level: When the system is working properly the maximum level is the sum of the minimum level and the quantity ordered.

69. Similarly in Fertiliser Corporation of India, it was reported in 1964 that provisioning levels were not fixed properly as they bore no relation to the past consumption figures. Further, the levels were not watched regularly and indents were raised after the stocks had gone below the minimum, or in most cases, long after the stocks had become nil. On the other hand, in respect of several items, there had been progressive additions to stock year after year and surpluses had accumulated over a period of time.

70. In Hindustan Aeronautics, it was noticed that provisioning action was taken on the basis of re-order levels which had been fixed years ago.

71. *The Committee view with concern the absence in certain public undertakings of provision for proper inventory levels so essential for inventory control. They consider that it is necessary not only to fix these limits but also to review them periodically because the assumptions on which these are based* e.g. *procurement time and the rate of consumption are subject to frequent changes.*

Non-stock items

72. In some of the Undertakings there are certain items which are not required regularly and therefore such items are not amendable to recoupment on "reorder level" basis. For such items, usually called the non-stock items, the quantities required by the indentor are sanctioned by the authorities after scrutiny and the indents are then sent to Purchase Department for procurement.

73. It was noticed that in some undertakings the non-stock items had not been classified properly. Thus in Garden Reach Workshop, the number of stock items was 3000 and the number of non-stock purchases made during a year was 8600. No attempt had been made to locate the repetitive purchases of several non-stock items.

74. *Purchase of items categorised as non-stock but which are procured frequently causes delays in purchases and results in rush buying besides adding to the buying cost. There should therefore be a periodic review say once in six months of all non-stock purchases and such of the non-stock items as are of a repetitive nature should be converted into stock items.*

Economic Order Quantity

75. Besides fixing the minimum, maximum and reordering levels, it is equally important to determine the quantities in which inventory

items should be ordered for procurement or manufacture each time an order is placed. The primary objective of inventory management is to minimise idle time by shortages of raw materials, stores or spares etc. and at the same time to keep down the ordering cost* and inventory carrying cost**. Therefore, the quantity to be purchased has to be determined not only taking into consideration the lead time and the rate of consumption but also the ordering cost and the inventory carrying cost. The inventory carrying cost and ordering cost are opposed to each other. If purchases are made less frequently and therefore in large quantities, inventory carrying costs are large but ordering costs are small. If on the other hand purchases are made very frequently and therefore in small quantities inventory carrying costs go down but at the same time ordering costs rise high. To be able to find the economic order quantity it is necessary therefore to balance these two opposing costs and to find the lowest overall cost.

76. *The Committee noticed that there was hardly any undertaking which worked out the buying cost per order or the inventory carrying cost on a systematic basis, with the result that economic order quantities for the various items to be stocked have not been fixed on the basis of these costs. The Committee feel that the present practice of determining order quantities on the basis of consumption and lead time only should be reviewed and buying and carrying costs of inventories should also be taken into consideration. Besides, the economic order quantities so fixed should be reviewed periodically in the light of any changes in the buying cost or inventory carrying cost.*

*Ordering cost (sometimes referred to as buying cost, purchase cost or procurement cost) is represented by cost of processing a purchase order, transportation cost, inspection etc.

**Inventory carrying cost generally includes interest on investment in inventory, handling and distribution cost, storage cost, obsolescence and deterioration cost, insurance etc.

VI

PURCHASES

77. The Purchase Department carries out one of the important functions in an undertaking. It is responsible for the most effective and economic purchases of the right type of materials at the right time and in right quantities and to suggest better specifications and alternative material substitutes to avoid or to minimise imports.

Methods of Purchases

78. The mode of purchase for any material depends on the volume of purchases, sources of supply, etc. The common methods adopted for making purchases are through open tenders, limited tenders, rate contracts, repeat orders etc. A statement showing the analysis of purchases made by some of the public undertakings in 1964-65 is given in Appendix I.

79. It will be seen therefrom that limited tenders have come to play an important role in purchasing as majority of the purchases are made through limited tenders. There are reasons why it is so. The purchases through open tenders involve cost of advertising for inviting quotation. Further, the open tenders involve the formality of publishing them and allowing 4—6 weeks for quotations (against 2-3 weeks in limited tenders) as also the work of preparing a comparative statement of all tenders and sifting reliable suppliers from irresponsible tenderers who put in spuriously low quotations. All this takes a long time in placing purchase orders. Thus, the public undertakings find it convenient to purchase through the medium of short-dated limited tenders which cut down cost of purchases as also the time taken in procurement.

80. *However for purchases through limited tenders lists of approved suppliers are a* sine qua non. *In many of the Public undertakings there is no system of registering suppliers/contractors for all the items of stores and maintaining an up-to-date list of suppliers. The Committee desire that such up-to-date list for every store item should be maintained by all the public undertakings.*

81. *It is also necessary to fix the number of suppliers to whom the Limited Tender Inquiries will be sent based on the value of the purchase order. In case the number of suppliers invited to tender or the valid quotations received is less than the number fixed, the purchasing officer should obtain the approval of the next higher authority before ordering purchase.*

Rate Contracts

82. Besides purchases through open and limited tenders, certain orders are placed by the public undertakings on the suppliers with whom the DGS & D has entered into rate contracts. Many of the public undertakings have been declared direct demanding officers for such contracts *i.e.* they could place order direct with the suppliers instead of routing them through the DGS&D. It was however, pointed out by several undertakings *e.g.* Hindustan Machine Tools Ltd., Indian Telephone Industries Ltd., Durgapur Steel Plant etc. that some times there had been delay in receipt of materials for which orders were placed under the rate contracts. There is no stipulation regarding delivery in the DGS&D rate contracts. It is a matter to be agreed between the suppliers and the buyer. The suppliers under the DGS&D rate contracts do not keep up promised delivery schedules. Most of the suppliers prefer to get orders outside the rate contracts and give preference to their execution as such rates are more favourable. Further, DGS&D rate contract implies DGS&D inspection and payment. Since this is a lengthy process, suppliers prefer to deal directly and outside the rate contracts.

83. *The Committee feel that the matter calls for serious attention by the DGS&D. They would suggest that all cases where there had been serious delays in receipt of materials under the DGS&D rate contracts, should be reported by the public undertakings to the DGS&D and such cases should be investigated by the DGS&D to find out the circumstances for delays in delivery or for charging the higher rates. The threat of termination of rate contracts with the defaulting parties and/or entering into parallel rate contracts with other parties could help in improving the position in such cases.*

Uneven purchases

84. Another feature noticed was that there was no proper phasing of purchases and in some of the undertakings large purchases were made during the closing months of the year as compared to the earlier

months as shown below:—

Name of the Undertaking	Average monthly purchases for the period April—December, 1964	Average monthly purchases for the period January—March, 1965
	(Rs. in lakhs)	
Bharat Electronics Ltd.	32·27	98·36
Fertiliser Corporation of India (Sindri Unit) .	57·48	82·34
(Nangal Unit) . . .	19·91	23·85
Heavy Electrical Ltd.	25·95	26·95
Heavy Engineering Corporation Ltd., (Central Stores)	19·49	30·49
Hindustan Machine Tools Ltd.—		
I & II . . .	29·80	36·92
III .	7·20	12·50
IV . . .	1·99	12·59
Indian Rare Earths Ltd., (Alwaye Unit) . .	2·74	5·10
National Buildings Construction Corporation Ltd.	10·96	24·67
National Instruments Ltd.	1·32	2·69
National Mineral Development Corporation Ltd.	13·36	27·09

85. During evidence the Committee were informed that sometimes the purchases appear to be high in the month of March, because of large payments made in that month to clear the accounts. It was however admitted that it was a bad practice to make large purchases during the last 2-3 months simply because there were some savings which could be utilised.

86. *For the smooth working of the Purchase Department it is necessary that the work load is evenly distributed throughout the*

year, instead of the purchases being rushed during the closing months of the year.

Lead time in purchases

87. An important factor affecting the inventories in an undertaking is the lead time in purchases. By lead time is meant the time taken for replenishment from the time a requisition is submitted to stores or purchase department to the time the material is received at the stores or using point.

88. Lead time has two components (i) administrative lead time from initiation of procurement action until the placing of an order and (ii) delivery lead time *i.e.* from the placing of an order until the delivery of the ordered material. For various reasons the lead time in public undertakings was considerably long. The excessive time was consumed by the administrative lead time. The administrative lead time in some of the undertakings was as follows:

Hindustan Machine Tools Ltd.	3—7 weeks
Fertiliser Corporation of India Ltd.	9—11 weeks
Heavy Electricals Ltd.	16—30 weeks
Heavy Engineering Corporation Ltd.	5—11 weeks
Indian Telephone Industries Ltd.	8 weeks
Oil & Natural Gas Commission	5—11 weeks
National Coal Development Corporation Ltd.	12—16 weeks

89. In this connection the Committee were informed that in Tata Iron & Steel Company the average time taken in releasing the purchase order was only 35 days in 1963-64.

90. The Committee need hardly point out the adverse effects of delay in procurement. Several instances have come to the notice of the Committee where the public undertakings suffered losses due to delay in placing the orders (Appendix II). Further, longer the lead time, the higher is the inventory. It was admitted during evidence that there was scope for reducing the lead time in public undertakings. *The Committee would in this connection suggest the following measures:—*

(i) *At present many of the public undertakings have not fixed any time limit for each stage of purchase e.g. for receipt of*

indent and issue of enquiry, receipt and consideration of quotations, issue of purchase orders etc. Fixation of such a time limit will act as a check on the performance of the Purchase Department. The time taken to release the purchase orders during a particular period and the pending indents should also be reviewed periodically with a view to examine the reasons for the delay in placing orders and to take remedial measures.

(ii) *In some of the undertakings* (e.g. *Hindustan Antibiotics Ltd., Hindustan Cables Ltd., Hindustan Insecticides Ltd., Hindustan Teleprinters Ltd. etc.) there is no proper delegation of powers for purchases and the limits up to which various officers could place the purchase orders had not been laid down. It is necessary to lay down such limits to reduce the administrative lead time.*

(iii) *Some of the public undertakings have appointed Stores Purchase Committee for scrutinising purchase proposals above a certain prescribed monetary limit. The common practice is to have representatives of concerned departments such as Finance, Production and Purchase Departments in such Committees. Appointment of such Committees obviates avoidable delay in inter-departmental notings and correspondence, gives the opportunity to the concerned departments to exchange views and helps in taking quick decisions. This system could be adopted by the undertakings who do not have such Committees.*

References to Finance

91. According to the present practice, there is no set pattern in the public undertakings about reference to Finance before placing purchase orders. In several undertakings financial concurrence is obtained in all cases before placing purchase orders. In some others, reference to Finance is made only if the value of purchases exceeds certain prescribed limit. In a few undertakings, Tender or Purchase Committees are constituted for scrutinising purchase orders, exceeding prescribed limits.

92. It was noticed that in Heavy Engineering Corporation reference to Finance or consultation with Finance was made at the following stages:—

(i) At indent stage to ensure availability of funds.

(ii) At enquiry stage in respect of limited tenders of value over Rs. 25,000.

(iii) Sealed tenders are opened in the presence of the Finance Officer.

(iv) Checking of the comparative statement of quotations prepared by the Purchase Department.

(v) Concurrence by Finance for the placement of the purchase order.

(vi) Vetting of the final supply order of the value of Rs. 1 lakh and above.

93. Similarly instances of several references to Finance before placing purchase orders were noticed in some other Undertakings also.

94. During the evidence it was agreed by the representative of Heavy Engineering Corporation that reference to Finance at all these stages was not necessary and certain changes had been made by them to reduce the number of references to Finance at two stages only.

95. *The Committee feel that large number of references to Finance tend to add to delay in placing purchase orders. Reduction in the number of such references without impairing financial control will directly result in reduction of work in both the purchase and finance branches, simplification of the procurement procedure, shortening of the administrative lead time and diminution in the number of stockouts and emergency purchases.*

What is needed for proper budgetary control is to sanction the overall budget and also to divide it as far as possible shop wise or product-wise. The Purchase Department should then be empowered to place purchase orders within the sanctioned budget according to the limits and conditions laid down. The present practice of obtaining financial concurrence for each order irrespective of the value of the order and notwithstanding the acceptance of the lowest tender is unnecessary and time consuming.

96. *The Committee however do not underestimate the need for proper financial control over the Purchase Department. It may be necessary to fix certain financial limits over which it may be desirable to refer the case to Finance before placing the purchase order. The other cases where it might be necessary to refer the case to Finance may be as follows:—*

(i) *Where the ring prices are quoted by the tenderers or the lowest offer is higher than the last purchase price by a certain limit say 5 per cent.*

(ii) *Where the difference between the accepted and the lowest tender is more than fixed limit say 5 per cent subject to an overall limit.*

Further in order to ensure that correct and proper procedures are followed by Purchase Department, there can be a larger percentage of post-audit. This would act as a check on the Purchase Department without impairing its efficiency in placing purchase orders.

97. *The Committee therefore desire that the procedures obtaining at present in various public undertakings should be reviewed and suitably modified to avoid unnecessary consultations, references and cross references to Finance which, while not contributing anything to purchase efficiency, merely add to the delay.*

98. Even in cases where references are made to Finance it was revealed that sometimes delay is caused because of back references by Finance on account of furnishing of incomplete information by the Purchase Department. Thus case studies carried out in Durgapur Steel Plant revealed that several references from Finance were made to Purchase Branch on the following grounds:—

1. Reasonableness of rate not certified.
2. Sanction of competent purchasing authority not obtained before making reference to Finance.
3. Certificate of non-availability of item on Rate Contract not furnished.
4. Reasons for passing over the lowest tender not furnished.
5. Comparable cost data not prepared.

99. *To obviate such delays proper forms should be devised by each undertaking containing details of information generally required by Finance so that purchase proposals sent to Finance are complete in all respects and time is not lost in avoidable cross reference between the Purchase and Finance Departments.*

Imports

100. It was noticed that in the case of imported items the lead time was considerably more than in the case of indigenous materials. Apart from the fact that consignments have to be shipped from abroad, one of the main reasons for the delay was stated to be the long time taken in the release of foreign exchange. It was pointed out by several undertakings that the procedure for the release of

foreign exchange was very cumbersome and time consuming. The time taken in getting clearance from the Directorate General of Technical Development and in the issue of licence by the Chief Controller of Imports & Exports also was very long.

101. During evidence the Committee were informed that the procedure for the import of stores and spares by the public undertakings had been changed. Hitherto the procedure was that the public undertakings used to apply to the Administrative Ministry for the release of foreign exchange in each case. The Administrative Ministry in turn had to seek the approval of the Department of Economic Affairs for the release of the specified amount of foreign exchange. This procedure had been changed and the public undertakings were now treated in the same way as the private sector undertakings *i.e.*, they could indent direct to the Chief Controller of Imports & Exports after getting clearance from the Director General of Technical Development. The revised procedure would, it is anticipated, avoid a lot of delay which otherwise used to take place.

102. As regards delay in the office of the Director General of Technical Development and the Chief Controller of Imports & Exports, the Committee were informed that on the basis of the recommendations of the Swaminathan Committee and the Mathur Committee, certain time limits had been laid down in regard to the clearance of applications for imports. By and large, the time limits prescribed were stated to be adhered to except in certain cases where there had been delay due to back references to the parties concerned to furnish some required information.

103. The Chief Controller of Imports & Exports had also fixed a time limit of one month to dispose of the applications for the issue of import licence. To ensure that the time limits are observed, an internal system had been evolved of reporting every week on the outstanding applications.

104. In this connection the Committee noted that every year a book is published by the Ministry of Industry which shows the items produced indigenously and the firms which produce them. This publication is made available to all the undertakings in the public sector as well as in the private sector. The Committee therefore enquired whether because of the delay involved in prescrutiny by the Directorate General of Technical Development of items to be imported it was not desirable to allow the public undertakings to make such scrutiny themselves with reference to the

book published by the Ministry and to import the items not produced indigenously. It was suggested that the list of items imported could be sent to the Directorate General of Technical Development for post scrutiny to check up whether there had been any avoidable imports. The Committee were informed by the representative of the Ministry that subsequent scrutiny might lead to certain difficulties since in some cases imports which were probably not warranted might take place. But it has been decided to give this scheme a trial in two or three projects and if it was found to be in the overall interest, it would be extended to other undertakings as well.

105. *The Committee are glad to note the improvements effected in the procedure for allowing imports by the public undertakings. They trust that the revised procedure would be effectively implemented and its actual working reviewed periodically.*

Value analysis

106. Value analysis is another important tool of materials management and is concerned with ascertaining whether the material or item purchased is good value for money for the required purchase or end use. Thus it starts with an enquiry into the functional utility of an item and then proceeds to measure its value or intrinsic worth in terms of the function required to be performed. The next step is investigation as to how the value can be improved either by obtaining better performance or by reducing cost or both or by obtaining some additional advantage such as conservation of material or saving of foreign exchange etc. Value analysis examines the utility and prestige value, if any, of an item and may suggest elimination of an item altogether.

107. *Value analysis has already become popular in many countries and the results achieved have been quite encouraging. It has* been reported that Japan has effected 5 per cent reduction in cost of materials, 2 per cent through improved efficiency in general and 3 per cent through value analysis. *However, in India, it has not found wide application and there are not many public undertakings doing value analysis in a systematic manner.*

108. *It needs hardly any emphasis that value analysis offers a large scope for cost reduction and all the public undertakings should undertake it in a systematic manner. Such an analysis has of course to be conducted by a team comprising personnel from Materials Management, Designing, Engineering, Production, Research and Development Departments.*

Import substitution

109. A major application of value analysis in India will be in the substitution of indigenous materials and components and equipment for imported ones. It is noted that the public undertakings depend for a substantial portion of their requirements for raw materials' supplies and/or spares and components, etc. on imports.

110. The percentage value of spare parts and components imported to the total purchases of spare parts etc. during a year in some of the undertakings is indicated below:—

	per cent
Rourkela Steel Plant of Hindustan Steel Ltd.	70
Durgapur Steel Plant of Hindustan Steel Ltd.	30
Bhilai Steel Plant of Hindustan Steel Ltd.	28
Coal Washeries of Hindustan Steel Ltd.	20 to 30
Neyveli Lignite Corporation Ltd.	45 to 50
Fertilisers & Chemicals Travancore Ltd.	50
Indian Telephone Industries Ltd.	25
National Coal Development Corporation Ltd.	65
Oil & Natural Gas Commission	mostly imported
Hindustan Aircraft Ltd.	30 to 50

111. Because of long lead time for imported items and uncertainty about availability of foreign exchange, the undertakings tend to keep large stocks of imported items. Considering the tight foreign exchange position, the development of indigenous sources of production, including ancillary industries, assumes great importance.

112. Explaining the steps taken for development of indigenous substitutes, the Chairman, Hindustan Steel Ltd. stated that the main difficulty in import substitution was the availability of specifications and detailed manufacturing drawings. In the case of Bhilai Steel Plant a large number of such drawings were brought from the Soviet suppliers but this has not been possible in the case of Rourkela and Durgapur Steel Plants where supplies were made by different proprietory firms. Drawings are therefore being prepared from actual samples but this will take time. In order to expedite the work, outside firms have also been engaged on the preparation of such drawings.

An equipment Planning Cell has been created in all the plants which is constantly engaged on the scrutiny of the import orders to see whether substitutes can be located and educational orders placed. A Standing Committee has also been set up comprising of the Chief Engineers (Mechanical) of the three steel plants and the representatives from Heavy Engineering Corporation and Heavy Electricals Ltd. This Committee goes into the question of indigenous manufacture to replace the imported items. Exhibitions of spare parts which are imported at present are also being held in all the principal industrial centres so that the interested Indian manufacturers could visit them and take up the manufacture of such items as they were capable of manufacturing. The Hindustan Steel Ltd. encourages them by placing educational order, etc.

113. The Chairman, Heavy Engineering Corporation also informed the Committee that they had appointed a Committee consisting of three General Managers and Financial Advisers. Every proposal for importing any item was examined in detail by this Committee before allowing imports. As a result it was claimed that the undertaking had been able to reduce the foreign exchange requirements by Rs. 2·30 crores within 1½ years. The steps taken by some other undertakings also were intimated to the Committee.

114. *The Committee welcome the steps taken by Hindustan Steel Ltd. and some other public undertakings for import substitution. Considering, however, that, as pointed out in para 110 above, a large percentage of requirements of spares was still met through imports by several undertakings, there is need for a systematic effort by all the public undertakings to develop indigenous substitutes and to achieve self-sufficiency in the matter of procurement of raw materials, spares and components.*

115. *The Committee feel that all the undertakings depending substantially on imported products should have a separate cell for research and development in the field of import substitution.*

To achieve results in the field, full use should also be made of the various Research Institutes in the country. Co-operation of private manufacturers could also be very valuable and they should be encouraged to take up the manufacture of these items by making available to them the detailed catalogues of imported items and by holding exhibitions, etc.

116. *The Committee also feel that there should be frequent exchange of ideas and information among the public undertakings about the efforts made for import substitution.*

Price preference

117. In accordance with Government policy of giving preference to the indigenous products available to substitute the imported ones, the public undertakings have to give some price preference to indigenous materials over the imported goods. However, there is no uniform policy followed by these undertakings about the extent to which such preferential treatment should be given to the indigenous products.

118. The extent to which price preference is normally given by some undertakings to indigenous products over the imported ones is indicated below:—

	per cent
(1) Air India .	15
(2) Bharat Electronics Ltd. . . .	20
(3) Heavy Electricals Ltd. . . .	25
(4) Heavy Engineering Corporation Ltd.	50
(5) Hindustan Shipyard Ltd. . .	40
(6) Coal Washeries of Hindustan Steel Ltd. .	33
(7) Indian Telephone Industries Ltd. .	25
(8) National Coal Development Corporation Ltd.	25
(9) National Projects Construction Corporation Ltd.	25
(10) Oil & Natural Gas Commission	25
(11) Fertiliser Corporation of India Ltd.	15—25

119. It has, however, been stated that in many cases indigenous products have to be purchased at a much higher rate than the margins referred to above.

120. Some other undertakings stated that if indigenous material was available, import was not allowed by the Directorate General of Technical Development and as such indigenous material was

purchased at the prevailing prices, irrespective of cost considerations.

121. *While the Committee agree with the policy of giving price preference for indigenous products, it is desirable that a uniform policy should be followed by all the public undertakings regarding the extent to which price preference should be allowed. They, therefore, feel that Government should lay down a limit upto which the public undertakings should be empowered to give price preference for indigenous products. In case it is considered necessary in any case to give price preference over the limit so fixed, the specific approval of the Board of Directors should be obtained before going in for indigenous products.*

Follow-up procedure

122. One of the objectives of inventory management is to minimise disruptions to production schedules caused by absence or shortage of materials or parts. An essential element is advance knowledge of all materials on order, which have not been received on schedule and which will cause such disruptions. A regular and standard follow-up procedure is therefore an absolute requirement in the materials flow system. However many of the public undertakings *e.g.* Garden Reach, Workshops Ltd., Hindustan Insecticides Ltd., National Buildings Construction Corporation Ltd., National Coal Development Corporation Ltd., National Instruments Ltd., Praga Tools Ltd. etc. have not laid down proper procedure for follow-up of purchase order. *The Committee desire that all the public undertakings should lay down proper follow-up procedure in this respect.*

Penalty for delayed delivery of supplies

123. Instances of delayed delivery of materials by the suppliers occur frequently. In this connection the Committee find that some of the undertakings, *e.g.*, Indian Telephone Industries Ltd., Mazagon Dock Ltd., Bharat Electronics Ltd., Garden Reach Workshops Ltd., Indian Rare Earths Ltd. do not provide for any penatly clause in their contracts with suppliers for late delivery of materials. The Indian Telephone Industries have stated that penalties are not stipulated because suppliers are not prepared to accept such conditions.

124. In some undertakings (*e.g.* Hindustan Machine Tools Ltd., National Projects Construction Corporation Ltd.), purchase orders stipulate recovery of liquidated damages at 1 to 2 per cent per month for the value of stores undelivered, provided actual loss is suffered.

125. A few undertakings (Bharat Electronics Ltd., Hindustan Machine Tools Ltd., Heavy Electricals Ltd., National Newsprint & Paper Mills Ltd., National Instruments Ltd., Garden Reach Workshops Ltd.) pointed out difficulty in enforcing the penalty clause because in some cases delays by suppliers were due to reasons beyond their control. Other difficulty was that in a seller's market there was apprehension of losing suppliers which in turn would create the problem of locating alternative sources of supply at reasonable rates.

126. *The Committee feel that according to normal commercial practice, in the purchase proposals and agreements, a clause for liquidated damages should be provided so as to ensure that the contractors supply the materials within the stipulated delivery period. This provision should also be enforced unless for good and valid reasons suppliers obtain consent to postponement of delivery dates.*

VII

TRANSPORT

127. Many of the public undertakings pointed out the difficulties and bottlenecks in the transport of stores and raw materials etc. due to lack of availability of railway wagons in time and in adequate number. It was stated by the Heavy Electricals Ltd. that the factory being situated far away from the sea ports and other major industrial towns, quick transport service was a vital factor in programming for production. Rail and road transport were the only modes of transport available and instances were not wanting when the rail bookings were closed for short periods and the costlier road transport had to be resorted to. It was also pointed out by the Heavy Engineering Corporation, National Mineral Development Corporation, Oil and Natural Gas Commission and Hindustan Aircraft Ltd., that difficulties had been experienced in the transportation of heavy cargoes and heavy structures, owing to restricted availability of special types of wagons. Difficulty in transportation is also anticipated in the movement of coal as the Railways insist on bulk movement in full rakes.

128. The National Coal Development Corporation pointed out that for the transport of cement difficulty was experienced due to non-availability of covered wagons. The extra cost involved in transportation by road ranged from Rs. 10 to Rs. 20 per tonne.

129. The steel plants of Hindustan Steel Ltd. have pointed out that if self-discharging wagons were provided for movement of dolomite, manganese ore and quartzite, considerable detention of wagons could be avoided. In Rourkela Steel Plant movement of sulphuric acid due to want of sufficient number of tank wagons has been a constant problem and at times the concerned plant units had to be shut down.

130. During evidence the Committee were informed that sometimes difficulties were experienced because of booking restrictions due to large movements of foodgrains, etc. Further in the case of small consignments when these were not in full wagon loads there was delay in transport as the wagon reached the destination by some devious routes.

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131. *In recent years, facilities for transportation of goods by road have increased. Road transport is costlier but at the same time speedier and perhaps safer too as compared to rail. However, no systematic efforts seems to have been made to determine the relative costs of transport by rail or road. In view of the general shortage of railway wagons, the Committee suggest that each undertaking should work out the relative costs of transport by rail and road for its various products, keeping in view the time factor, packing costs, safety in transit, etc.*

132. Another point raised by the Chairman, Heavy Electricals Ltd., during evidence was that for rail transport the maximum height of the Consignment is already limited and the electrification of Railways would still further limit this maximum height. The difficulty was already being experienced in the case of large transformers and was most pronounced on lines electrified at 25 K.V. A.C. System.

133. *The Committee feel that the matter merits serious attention of government and the Railway Board with a view to taking remedial measures to avoid the difficulties in transportation of over sized or heavy equipment which might occur after electrification of railways.*

VIII

INSPECTION

134. The process of purchasing cannot be considered as completed until the material is finally received from the suppliers, duly inspected and found satisfactory in respect of quality and quantity and brought on charge.

135. The extent of inspection necessary will depend on the type of materials, the source from which they are purchased and other factors. For instance, in case of stores bearing Indian Standards Institution certification marks, branded products, items supported by reputed manufacturer's test certificates, etc. the inspection need not be so rigid and elaborate as in case of non-standard products. It is however essential that proper procedure is laid down for inspection of various types of materials. It was noted that many of the public undertakings (*e.g.*, Garden Reach Workshop, Hindustan Insecticides Ltd., Indian Rare Earths Ltd., Mazagon Dock Ltd., National Buildings Construction Corporation Ltd. Praga Tools Ltd., etc.) have not laid down the procedure for inspection of materials.

136. *The Committee desire that the procedure for inspection of various types of materials should be laid down by all the public undertakings. While the method of inspection to be adopted will depend on the requirements of each undertaking, it is essential that the procedure for inspection should be a simple one since if the procedure is too elaborate it could be costly and time consuming added with the danger of being by-passed.*

137. It was found that in some of the Undertakings the time taken in inspection was quite long. In a special report on Hindustan Steel Ltd. (Kamath Report December, 1962), it was stated that at Durgapur Steel Plant there was generally a delay of about 20 days in handing over materials from receiving section to inspection section. A delay of 20 days to a month was taken in transporting stores from inspection to custody. Also there were abnormal delays when inspections had to be carried out by the technical departments.

138. According to Audit Report, 1965 stores at one of Oil & Natural Gas Commission projects in June, 1964 valued at Rs, 23.35 lakhs were

lying in the Railway yard and storage shed of the Commission uninspected. Some of the stores had been received as far as back as 1960 and many packages had not even been opened.

The Commission also suffered avoidable loss due to delay in inspection and failure to prefer claim within the prescribed period.

139. *To avoid unnecessary delay in the process of inspection it is desirable that the time limit for inspection of various types of materials should be laid down and actual time taken in inspection as against the limit fixed reviewed periodically.*

Inspection by Directorate General of Supplies & Disposals

140. In the case of items which are on rate contract with Directorate General of Supplies & Disposals and where orders are placed through them, inspection is conducted by the representatives of DGS&D before despatch. It is understood that DGS&D relies on statistical sampling. In cases where the inspection can be merely visual, as in the case of machine tools etc., Directorate General of Supplies & Disposals depends on the warranty of the firm. A copy of inspection report is sent by Directorate General of Supplies & Disposals to the Undertaking along with invoices and bills for payment. The usual agency fee charged by Directorate General of Supplies & Disposals is 0·5 per cent of the value of goods.

141. Centain undertakings have pointed out that there have been some delays in inspection by Directorate General of Supplies & Disposals. It has also been suggested that the undertakings, if they choose to do so, may be permitted to carry out inspection by their own staff.

142. *The Committee understand that even after the goods are inspected by Directorate General of Supplies and Disposals, the undertakings have to inspect the materials on receipt. This inspection may be for quality or quantity or for both. Since inspection by Directorate General of Supplies and Disposals and again by the undertakings involves duplication of effort, the Committee would suggest that in cases where the undertakings can make arrangements for inspection by their own staff, the feasibility of permitting them to do so may be examined.*

Rejections

143. It was noted that in some of the undertakings, *e.g.*, Heavy Electricals Ltd., Hindustan Machine Tools Ltd., Hindustan Shipyard

etc. the percentages of the purchased materials rejected because of their being defective/not conforming to specifications was 3 to 6 per cent of the total annual purchases. It was stated during evidence that the heavy rejections have been due to inexperience of the indigenous manufacturers and it is necessary to educate them.

144. *In this connection the Committee would suggest in-process inspection at suppliers' end in suitable cases. This would help in reducing the percentage of rejections at destination and also save the time, labour and expenditure involved in sending back the defective materials and obtaining replacements.*

145. *The Committee also found that mostly the public undertakings did not maintain statistics about the extent of materials rejected, the firms which supplied such materials, etc.* During evidence it was stated by the Chairman, Hindustan Steel Ltd. that although the records of such cases were available, no register as such was kept to have such information at one place. *The Committee feel that the maintenance of such statistics would help in locating the types of materials generally found defective and the firms which supply defective or sub-standard materials.*

146. *In reply to a question the Committee were also informed that the names of the suppliers who consistently supply sub-standard materials are removed from the list of approved suppliers. They would suggest that the names of such suppliers should also be circulated to other public undertakings, Government Purchasing Departments so that they may be cautious while dealing with such firms. Besides helping the other public undertakings, this would act as a deterrent to the bad suppliers.*

IX

CONSUMPTION OF MATERIALS

147. *Considering that the material costs account for a major portion of the total cost of finished products, the question of best utilisation of the materials received is extremely important. It is therefore essential that the norms of consumption for various materials are fixed on a scientific basis and the actual consumption checked periodically with the norms to locate the cases of excess consumption. The Committee regret to note that in many of the public undertakings e.g. Hindustan Antibiotics Ltd., Praga Tools Ltd., National Projects Construction Corporation, etc. such norms of consumption have not been laid down. They desire that these norms should be laid down by all the public undertakings wherever feasible, and periodically reviewed in the light of actual working of the undertaking.*

148. *The Committee also note that in some of the undertakings, the actual consumption was much more than the norms prescribed.* Thus in National Buildings Construction Corporation the value of excess consumption in 1962-63 amounted to Rs. 13.00 lakhs as estimated by the company. In 1963-64, in seven cases alone, excess consumption amounting to Rs. 4.22 lakhs came to the notice of Audit. According to the conditions of issue of controlled items like cement and steel, the C.P.W.D. makes recovery at double the issue rates for consumption over and above the ceilings. It was noticed that in 5 cases the company had to pay a penalty of Rs. 30,900 to the C.P.W.D. for such excess consumption.

149. The reasons for excess consumption were stated to be broadly the following:—

(1) Inefficiency of the staff.

(2) Poor quality of material involving more wastage.

150. The excess consumption of some of the materials as compared to the norms fixed was also noticed in many other undertakings e.g. Heavy Electricals Ltd., Heavy Engineering Corporation, Hindustan Shipyard, Hindustan Steel Ltd., Mining & Allied Machinery Corporation, National Instruments Ltd., etc. *The Committee desire that all cases of excess consumption should be thoroughly investigated and remedial measures taken.*

X

STORAGE, CARE AND CUSTODY

151. As a custodian of materials purchased either in the form of raw materials or as components, semi-finished or finished products, the Stores Department has a very important function to perform. Besides proper storing of materials so that there is ease in handling stores during the process of receipt, inspection and issue, the stores have to be properly accounted for and looked after.

152. It was noticed that in many of the public undertakings there was laxity in care and custody of the materials as a result of which some of them suffered considerable loss. Thus according to the information furnished to the Committee Heavy Electricals Ltd. suffered loss of materials worth over Rs. 1 lakh during the years 1962-63 to 1964-65. The loss incurred was stated to be for want of proper storage accommodation. The Committee were surprised to learn from the Chairman, Heavy Electricals Ltd. that for some reasons the main stores building and sheds were cut out of the original project Report. The undertaking had not been able to provide adequate storage accommodation and proposal to construct an additional store block was still under consideration.

153. Similarly in Bhilai Steel Plant of Hindustan Steel Ltd., in the absence of storage facilities for scrap obtained as a by-product in the process of producing pig iron, it was either dumped into the slag or stocked so close to the yard that it got mixed up with slag. As a result only 7900 tonnes, out of 35,020 tonnes produced between February, 1959 and May, 1962 could be segregated and sold. The rest of the scrap (27120 tonnes) valuing Rs. 30·10 lakhs could not be salvaged and was a loss. In Durgapur Steel Plant also owing to inadequate stocking arrangements resulting in mixing up, high grade manganese ore was used in the blast furnace in place of low grade ore to the extent of 356 tonnes and 171 tonnes during 1960-61 and 1962-63 respectively involving an extra expenditure of Rs. 1·32 lakhs. In Rourkela Steel Plant also 6050 tonnes of ferrous sulphate valued at Rs. 7·87 lakhs which was not stored properly became unsuitable for consumption or sale.

154. Similar instances of losses were pointed out by Audit in other undertakings also *e.g.* Hindustan Shipyard Ltd., Oil & Natural Gas Commission, National Mineral Development Corporation etc.

155. *It is regrettable that in many of the public undertakings there was laxity in the care and custody of the materials. While different items have to be treated with varied degree of care according to their nature, any scheme of storage and stores control should achieve the following objectives:—*

(i) *Maximum utilisation of the space for storage.*

(ii) *Care of handling stores during the process of receipt, inspection, storage and issue and to ensure an undisturbed and easy flow.*

(iii) *Preservation of stores against breakage, spillage or deterioration.*

(iv) *Security against pilferage.*

The Committee trust that suitable measures will be taken by all the public undertakings for proper storage, care and custody of materials.

Stores Accounting

156. The main purpose of accounting of stores can be briefly stated as follows:—

(1) Record of stores received, issued and the balance held in stock at a particular time.

(2) Documentation of receipts and issues as a proof of the receipt or issue required for giving credit to those from whom it has been issued.

(3) Valuation of stores to be able to assess the financial commitments and the assets involved in the stocks held.

(4) Ensuring legal custody of stores in charge of individuals so as to be able to fix the responsibilities in the event of loss due to theft or pilferage.

157. It was noticed that in many of the public undertakings, the stores accounts were not satisfactory. In the Report of the Officer on Special Duty on the working of the Stores Organisation of Oil and Natural Gas Commission it was stated that:—

"The stock cards have not been maintained correctly and up-to-date in the past. Even at present all is not well with their maintenance in all the stores establishments. Receipts and issues are not always recorded concurrently

with the occurrence of a transaction, nor are the relative receipt and issue vouchers prepared simultaneously. Instances of mis-postings too are met with not infrequently. Even the stores ledger, which is maintained independently by the Accounts Branch has been found imcompletely posted in a number of projects. These two sets of records have besides been found at variance with each other and no concerted efforts are being made to reconcile the discrepancies. Responsibility for reconciliation is itself not clearly prescribed. The stock holder thinks it is that of the ledger keeper, while the ledger keeper thinks it is that of stock holder. The discrepancies thus continue unreconciled over long periods and the stock holders' certificate accompanying an indent for purchase serves little useful purpose".

158. Similarly in National Buildings Construction Corporation according to Audit Report, the materials at site accounts maintained by the units were incomplete and did not indicate opening and closing balances and consumption. Instructions issued by the company on stores accounting from time to time have not been completely followed by the unit.

159. Similar instances of non-maintenance of proper stores accounts were noticed in some other public undertakings also *e.g.* National Minerals Development Corporation, Indian Oil Corporation, etc.

160. *The Committee view with concern the serious lapses in the maintenance of stores accounts in some of the public undertakings. In the absence of proper accounts it is difficult to maintain any control over the receipt and issue of stores, to check the shortages in stores if any and to fix the responsibility for the losses. Proper valuation of stores issued and consumed is also rendered difficult. The maintenance of proper and complete stores accounts is, therefore, absolutely essential.*

161. *The Committee would also emphasise that the system of accounting should be such as would avoid unnecessary duplication of work without losing sight of the objective.* They noticed that in most of the public undertakings two sets or even three sets of records were being maintained for the materials in stock, *viz.* (i) Separate Bin Cards for each item giving details of quantities received and issued (ii) Stores ledgers or material control cards under the cardex system for numerical accounting and (iii) priced stores ledgers showing both quantities and values maintained in the Accounts Department.

162. The Committee enquired whether it was necessary to have two or three sets of records for stores accounting. They were informed by the representative of the Indian Telephone Industries that they had already abolished the Bin Cards and since the installation of the computers a few months back the ledger cards and the stock cards had also been merged. It was however stated by the representative of Hindustan Steel Ltd. that in a large plant like a steel plant the introduction of a single card system will require very quick flow of documentation through the various channels. It would, therefore, be possible to introduce it only when the entire documentation system is computerised. It was, however, admitted that one set of cards would certainly be most desirable. The Hindustan Steel Limited had already decided to install computers and it would not take more than three years to install them.

163. *The Committee feel that the present practice of maintaining two sets of stores cards in the Stores Department needs to be reviewed. In the view of the Committee, it is desirable to maintain only one set of stores cards (say of the kardex type) as it would avoid duplication of work without impairing efficiency of material control system. The practice of maintaining Priced Stores Ledgers in the Accounts Department would have to be continued in such cases. In some undertakings where the number of items in stock is very large, the total volume of transactions would justify installation of computers or other mechanised equipment. In these undertakings, the feasibility of maintaining only one set of stores cards with the help of such equipment and thus obviating the necessity of maintaining separate Priced Stores Ledgers in the Accounts Department should be examined.*

Stock verification

164. It is essential to have periodical physical verification of stores to ensure that the materials tally with the description and specification shown in the stores Bin/Stock cards. It is desirable to adopt a system of continuous stock verification on a cyclic basis so that all materials are physically verified at least once a year. The excesses and deficiencies, if any, revealed on such verification should be properly investigated and accounted for.

165. It was noted that as a result of physical verification large variations were noticed in some of the undertakings between actual stocks and ledger balances. Thus in Oil & Natural Gas Commission physical verification conducted during 1963-64 and 1964-65 revealed discrepancies (shortages/surpluses) in 28·3 per cent and 15·8 per

cent of the total number of items checked. In Heavy Engineering Corporation discrepancies in stocks and stores amounted to Rs. 22·60 lakhs out of which discrepancies amounting to Rs. 12·36 lakhs were brought forward from previous years. In the steel plants of HSL the variations noticed were to the extent of Rs. 66·57 lakhs in Durgapur Steel Plant (1965), Rs. 272·32 lakhs in Rourkela Steel Plant and Rs. 12·85 lakhs in Bhilai Steel Plant (1964-65). Again in Fertiliser Corporation of India (Nangal Unit), physical verification conducted in February/March, 1964 showed a shortage of Calcium Ammonium Nitrate to the extent of 7026·79 M. tons (net) valuing Rs. 12·06 lakhs which was written off during 1963-64. In the Sindri Unit likewise there was shortage of Ammonium sulphate in 1964-65 to the extent of 6708·99 M.T. valuing Rs. 15·70 lakhs.

166. During evidence the Committee were informed that in Oil & Natural Gas Commission the discrepancies were due to difficulties in reconciliation because of the absence of proper catalogues and due to certain defects in the system of record keeping which had since been changed. Out of 23000 items where originally the discrepancies were revealed, only 1500 items were left for reconciliation.

167. In reply to a question, the Commission has also stated that verification of tabular goods could not be made during the past few years in some projects where, due to lack of accommodation and handling facilities, the materials could not be stacked in countable orders.

168. As regards Hindustan Steel Ltd., it was stated that certain losses of materials were normal during handling and storage. Further, certain discrepancies arose due to absence of weighment facilities at the point of loading and unloading of wagons or while in store. Similar was the case in the Fertilizer Corporation of India. It was explained that certain norms had been fixed and if the discrepancies or shortages were more than the norms fixed, these were looked into.

169. *The large variations between the actual stocks and ledger balances is a reflection on the standard of stores keeping and of stores accounting and should be taken serious notice of by the public undertakings. The discrepancies noticed as a result of such verification should be reconciled promptly and all shortages which come to light must be investigated.*

170. *Some shortages may be inevitable in certain undertakings in the normal course of handling of certain stores. In such cases suitable norms should be fixed for such handling losses and the actual*

shortages compared with the limits so fixed. Instances are not wanting where the actual losses suffered were even more than the norms so fixed. Thus in Hindustan Steel Ltd., the norms of handling losses of raw materials permitted losses of major raw materials upto Rs. 80—100 lakhs in each plant to be written off automatically. But in actual practice, in Durgapur Steel Plant the losses of raw materials were even more than these limits. Such abnormal shortages should be viewed with concern. Immediate action should be taken to analyse the reasons therefor and suitable measures taken to prevent their recurrence. The norms fixed should also be regularly reviewed with the object of keeping the losses as low as possible.

Stores Manual

171. It was noticed that barring a few undertakings (*e.g.* Air India, Durgapur and Bhilai Steel Plants, Indian Airlines Corporation, Hindustan Machine Tools Ltd., Indian Telephone Industries Ltd., National Coal Development Corporation Ltd. and National Projects Construction Corporation Ltd.) most of the public undertakings had not yet prepared a manual on the various aspects of materials management.

172. *To ensure proper working of the Materials Management Department it is essential that the procedures to be followed regarding materials purchasing, inspection, storing, issue and disposal etc. are clearly laid down for the guidance of all concerned. A comprehensive manual on the various aspects of Materials Management is therefore an urgent necessity and immediate attention should be paid by all the public undertakings to prepare such a manual.*

XI

UTILISATION OF BY-PRODUCTS

173. During the process of manufacture, various by-products are obtained. These by-products, if properly utilised, can add substantially to the profits of the Undertakings. It was, however, noticed that in various public undertakings *e.g.* Steel plants, coal washeries of Hindustan Steel Limited, Oil and Natural Gas Commission, Fertilizer Corporation of India etc., the by-products obtained were not put to proper use.

174. One of the reasons for non-utilisation of these by-products was lack of proper study about the extent of arising of by-products, their quality, etc. and failure to make proper arrangements well in time for their utilisation and disposal. A few instances are given below:—

(1) In Oil & Natural Gas Commission the associated gas arising from Ankleshwar field was not fully utilised because of failure to make adequate arrangements for supply, receipt and measurement, etc. The volume of gas which could not be utilised annually was of the order of 120 million cubic metres.

(2) The condensate from Cambay Gas field of Oil & Natural Gas Commission could not be utilised because of failure to make arrangements regarding transportation and loading and unloading facilities both at the refinery and the Cambay ends.

(3) In Bhojudih Washery of Hindustan Steel Ltd., there was huge accumulation of middlings and rejects totalling 7·86 lakh tonnes as on the 31st October, 1966, since long term arrangements for their disposal were not made in time and the question of their disposal was still at discussion stage with the West Bengal State Electricity Board authorities.

(4) At Nangal Unit of Fertiliser Corporation of India, surplus oxygen was not being utilised. A proposal for its utilisation for gasification of naphta was sent to Government of India but they did not approve the scheme.

(5) In Durgapur Steel Plant, till recently the surplus coke oven gas had to be bled because it was not taken by D.V.C's Thermal Power Station at Durgapur. The value of gas bled in three years was as follows:—

Year	*Value (Rs. in lakhs)*
1962—63	37.41
1963—64	29.13
1964—65	12.63

(6) In Rourkela Steel Plant, out of 3105 tonnes of Anthracene Oil produced during 1962—65, Anthracene Power recovered was 101 tonnes only. It is stated that the by-products plant is the first of its kind in India and no market study seems to have been made when the plant was initially ordered.

(7) In Durgapur Steel Plant, originally it was proposed to sell Light Oil produced from Tar Plant, but as chemical industry had not developed, market could not be found for the same. The quantity and value of Light Oil produced was as follows:—

Year	*Quantity (Tonnes)*	*Value (Rs. in lakhs)*
1962—63	1406	2.81
1963—64	1536	3.07
1964—65	502	1.00

In the absence of demand for this product, it was stored and the possibility of utilising it for recovery of Benzol products is being explored.

(8) In Durgapur and Rourkela Steel Plants, there was large accumulation of steel furnace slags available from the blast furnaces. Proposals for setting up of slag Granulation Plants for utilising slag were initiated later, but were held up for want of prospective buyers.

(9) The Slag Granulation Plant at Bhilai was not working to its full capacity because of the failure of the buyer to lift the entier quantity of granulated slag produced. The Slag Aggregate Plant at Bhilai was also not run to its capacity because the Railways who were to have taken the entire quantity of slag aggregate later found this material unacceptable for their purposes.

175. *From the above instances it is clear that there has been loss of valuable by-products because of lack of proper planning and forethought. In some cases by-product plants were installed late and the products could not be sold because market study had not been made in advance nor had adequate steps been taken to develop the market. This happens, because at the time of setting up of the projects, little or no attention is paid towards production and utilisation of by products. The committee consider it essential that at the time of preparation of Detailed Project Reports itself proper assement of the nature and the extent of by-products likely to arise during production/operation of the plant, should be worked out so that adequate arrangements about their utilisation/disposal could be made well in time of the arising of these by-products.*

176. The Committee also noticed that the operation of some of the by-product plants could not be continued due to defects in the plant and machinery or in operation. Some such instances are given below:—

(1) In Rourkela Steel Plant Crude Oil produced could not be processed and the plant had to be shut down due to severe corrosion. Out of 1750 tonnes of oil produced during 1962—65, only 20 tonnes of phenol and 10 tonnes of cresol could be recovered. The price of phenol is about Rs. 2,200 per tonne and of cresol Rs. 1,960 per tonne. It is stated that there is considerable demand for these products for manufacture of synthetic material.

(2) In Rourkela Steel Plant, the ammonia liquor, which could be utilised for manufacture of fertilisers was being distilled and vented into the atmosphere as this liquor was not acceptable to the Fertiliser Corporation of India on account of the presence of certain organic impurities. It is stated that the plant does not have the facility for fixing the ammonia in the gas as ammonium sulphate.

(3) In Rourkela Steel Plant, hydrogen sulphate was not being used for processing to sulphuric acid because the amount of hydrogen sulphide present in the coke oven gas was not sufficient to operate the plant on a minimum load. On an average 1-2 tonnes of hydrogen sulphide per day are recovered and vented into the atmosphere.

(4) In Rourkela Steel Plant, all the available benzol in the gas was not recovered owing to poor efficiency of the compressors. In some cases, benzol could not be processed due to non-availability of tank wagons.

(5) In Durgapur Steel Plant, Benzol Plant was not run to its rated capacity because of defects in the oil coolers.

177. *It is surprising that even after several years of the working of these plants it had not been possible to rectify defects in the plants and machinery for the by-products. The Committee trust that effective steps would be taken soon to set right the defects in the plant and machinery to ensure proper utilisation of the by-products.*

XII

REPORTS TO MANAGEMENT

178. It is neither possible nor necessary for the top Management to check every item purchased/disposed of etc. What is required for proper inventory control is that based on production programme, financial resources etc., both physical and financial ceilings should be laid down for all items of inventory. At the same time the top management should exercise overall control over materials by getting periodical reports as to the level of inventories, purchases made, position about slow moving/non-moving items etc. The Committee found that there was no proper system of submitting such periodical reports to the top Management about various aspects of material management. Some of the Undertakings *e.g.*, Garden-reach Workshop, Hindustan Antibiotics Ltd., Hindustan Cables Ltd., Hindustan Insecticides Ltd., Hindustan Shipyard Ltd., I.A.C., Indian Rare Earths, I.T.I., Hindustan Teleprinters Ltd., do not submit any periodical reports. However, some other Undertakings *e.g.*, Air India, Fertiliser Corporation of India (Nangal) Unit), Hindustan Steel Ltd. etc., submit a monthly report about important activities of Stores & Purchase Departments. In Fertilisers and Chemicals Travancore Ltd., a report is also submitted to the Managing Director showing all purchases made during the previous month whose value was less than Rs. one lakh but the lowest tenders were rejected. In Nangal Unit of Fertiliser Corporation of India, a monthly statement about surplus stores is also sent to the General Manager.

179. *In the absence of periodical reports to the top management it is difficult to maintain close watch over the inventories. While the precise nature of the reports which should be submitted to the top Management and their periodicity may differ to some extent from undertaking to undertaking, the Committee feel that the top Management (General Manager, Chairman/Managing Director, Board of Directors) should get periodical reports (monthly/quarterly) on the following aspects of Materials Managements:—*

Purchases:

Reports containing the following information:—

(i) Details of purchases above certain limits,

2700 (Aii) LS—5

(ii) *Purchases over certain limit where lowest tenders were not accepted.*

(iii) *Details of rush and emergency purchases showing items purchased, their value, source of purchase, reasons etc.*

(iv) *Details of indents outstanding viz. their number, the period for which there were outstanding, reasons for delay if any.*

Stores Department:

Reports containing the following information:

(i) *Stock position about major raw materials, stores, finished goods etc.*

(ii) *Position about slow moving/non-moving stores, extent of surplus stores and position about their disposal.*

General:

(i) *Reports about the foreign exchange utilisation;*

(ii) *The imports made;*

(ii) *Steps taken for import substitution and the results achieved; and*

(iv) *Value analysis, reports etc.*

The above reports should contain essential data only and should be submitted soon after the close of the period to which they pertain. Also, maintenance of purchase and stores records should be such as would enable compilation of necessary information without involving much labour and time.

XIII

CONCLUSION

180. After an examination of the working of Materials Management in public undertakings, the Committee feel that although most of the undertakingIs are conscious of heavy investment in inventories, there has not been a continuous effort to control inventories or to introduce new techniques of materials management. The various aspects of materials management and the extent to which these have been followed or should be followed by the undertakings have been discussed in this Report. In conclusion the Committee wish to make the following general observations:—

(i) *By and large, materials management has been given a secondary importance in the organisational set up of an undertaking. There is, therefore, need to pay greater attention to the efficient functioning of this department.*

(ii) *A large number of undertakings depend on imported spare parts and components. Because of long lead time required for imported products and due to acute foreign exchange situation, there is a tendency on the part of the undertakings to import larger stocks in order to avoid possible stoppage of production due to non-availability of stocks at the required time. There is therefore need to liberalise maintenance imports to obviate this tendency. There is also need for stepping up indigenous production and development of ancillary industries so that dependence on import is reduced to the minimum. Government should pay particular attention to these matters.*

(iii) *Various methods of inventory control have been adopted in industrially advanced countries. These are classification, codification, standardisation, variety reduction, value analysis, A.B.C. analysis etc. Adoption of these methods can greatly help in reducing costs. Barring a few undertakings, these aspects have not been given proper attention. These new techniques should be employed.*

(iv) *There have been numerous complaints from the undertakings that, both from the point of view of quality and price, the indigenous products do not comphre favourably*

with the imported ones. While the undertakings can help the indigenous manufacturers to improve the quality of their products, Government also should take suitable steps for reducing the costs of such products.

(v) Utilisation of by-products has not received proper and adequate attention of several undertakings. In some cases plans for their utilisation were initiated quite late, while in others by-product plants had been installed but were not operating due to defects in the plant or because adequate efforts had not been made to develop the market for those products. There is need for advance planning in this respect and also for implementing the plans.

(vi) There is a general feeling that materials management does not require any specialised knowledge. It is perhaps for this reason that there are practically no regular arrangements in the country for training of personnel at various levels for appointment to materials management posts. The efficiency of the materials management department will depend on the qualifications and experience of the personnel appointed therein. It is, therefore, essential to arrange regular institutional training in materials management and for exchange of ideas and information through seminars, etc.

181. *The Committee hope that by the implementation of the recommendations contained in this Report the undertakings will be able to improve their materials management procedures and thereby their working results.*

NEW DELHI;
3rd March, 1967.
Phalguna 12, 1888 (S).

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

APPENDIX I

(*See* para 78)

Statement showing the percentage of the value of orders placed under different modes of purchases in 1964-65.

Name of the Undertaking	Limited tenders	Rate contracts	Open tenders	Local emergency purchases	Repeat orders
Fertilisers and Chemicals Travancore Ltd. . . .	90·1	0·3	9·6	..	..
Fertilisers Corporation of India Ltd.,					
Sindri Unit	94·0	3·4	2·6		..
Trombay Unit	61·0	5·5	31·0	1·75	·75
Gorakhpur Unit	4·8	13·2	81·6	0·13	0·24
Garden Reach Workshops Ltd.	85·01	1·24		13·75	..
Heavy Electricals (India) Ltd.	96·14	0·96	2·88	0·02	
Heavy Engineering Corporation Ltd., (Central Stores) .	49·23	35·57	15·00	0·20	
Hindustan Cables Ltd.	22·23	5·29	72·34	0·14	..
Hindustan Machine Tools Ltd.,					
I & II	80·99	17·20	..	0·09	1·72
III	80·4	7·1	6·1	1·3	5·18

1	2	3	4	5	6
Watch factory	20·71	0·34	..		78·95
Hindustan Shipyard Ltd., ...	16·16	8·32	72·26		3·26
Hindustan Steel Ltd.					
Bhilai Steel Plant	61·00	21·52	16·38	0·20	0·90
Durgapur Steel Plant	63·5	18·5	14·6	0·5	2·9
Indian Rare Earths Ltd.,					
Alwaye Unit	27·0	54·0	6·0	13·0	
Minerals Division	61·0	36·0	..	3·0	..
Thorium Plant	51·0	3·0	25·0	21·0	3·0
Mining & Allied Machinery Corporation Ltd. . .	46·9	12·2	35·7	2·04	3·06
National Instruments Ltd.	63·9	1·7	8·2	..	25·0
National Mineral Development Corporation Ltd.	10·31	35·81	53·01	0·17	0·70
National Newsprint & Paper Mills Ltd. . . .	47·3	0·30	47·0	0·40	5·0
National Projects Construction Corpn. Ltd. . . .	52·44	12·60	34·79	0·17	..
Oil & Natural Gas Commission	25·4	22·8	48·6	2·4	0·8

APPENDIX II

(*See* para 90)

Instances where the Public Undertakings suffered losses due to delay in placing the purchase orders.

Hindustan Aeronautics Ltd.

Avoidable expenditure on the purchase of counter sinks.

In November, 1962 the Company invited quotations for the supply of counter sinks and received three offers in December, 1962 which were valid up to 25th January, 1963. On 4th January, 1963 the Company called for samples and requested the tenderers to keep their offers valid for 45 days from the date of submission of the samples. Although this stipulation was agreed to by all the tenderers, the Company neither finalised the performance report on the samples within the extended validity date nor asked for its further extension. A purchase order released on the lowest tenderer on 10th July, 1963 (after 3 months from the expiry of the extended validity date) was not accepted by him on the following grounds:—

> "The tender was submitted on 8th December, 1962, samples were sent on 14th February, 1963 and a decision was given only in July, 1963. During this interval our order book has become more than full and we will not be able to introduce this for production in the next ten/twelve months. Under the circumstances, we are sorry that we cannot undertake to accept your esteemed order in this particular instance".

In November, 1963 the Company called for fresh quotations and an order at higher rates was placed on another firm involving an extra expenditure of Rs. 53,295.

Heavy Electrical (India) Ltd.

Additional expenditure due to delay in accepting a tender—

An offer for the supply of a Milling machine at a firm price of £26,374 (Rs. 3,52,000) and valid for 60 days was received by the

Company's representative in London on the 2nd October, 1959 from M/s. Associated Electrical Industries, London, the purchasing agents of the Company. This being a single tender, the purchase had to be authorised by the Company's Board of Directors. The Board's approval was given only on the 18th of January, 1960 and the purchase order was issued on the 10th of February, 1960, by which time the offer was no longer valid and the firm demanded an increase of 7½ per cent in price due to increased cost of material and labour. After further negotiation the firm agreed to an increase of 6 per cent only which was accepted. The increased payment on this account was £1,475 (Rs. 19,667).

Loss due to delay in placing an order—

Heavy Electricals, Bhopal, received a quotation dated 9th August, 1963 from A.E.I., London for 15 sets of rectifiers required for construction of Railway Electrical Multiple Units. The quotation which was valid till 10th October, 1963 mentioned a firm price of £5,000 per set F.O.B. U.K. Port. The H.E.L. Cell in London was asked to place an order on A.E.I. for these rectifiers only on 3rd February, 1964. But A.E.I. informed the H.E.L. Cell on 20th February, 1964 that the previous offer was no longer valid and the price was later on revised to £5,295 per set. The delay in placing the order has resulted in a loss of £4,425 or Rs. 59,000.

Hindustan Shipyard Ltd.

Delay in applying for import licence—

The period of validity of the lowest offer of Rs. 75,195 per set for the supply of electrical equipment for four vessels received from a foreign firm in March, 1963 was extended from 27th April, 1963 to 31st July, 1963 and thereafter up to 15th December, 1963. Though the Shipyard provisionally accepted the offer on 13th July, 1963, import licence was applied for on 5th December, 1963 only and a firm order was placed on 10th February, 1964. In the meantime, owing to increase of the price by Rs. 13,001 per set the Shipyard had to pay an extra amount of Rs. 52,004 on the purchase of four sets.

Another offer of the same manufacturer for the supply of distribution boards for the vessels at a total cost of Rs. 2,36,691 was accepted on 31st July, 1963, but the Company applied for import licence only on 5th December, 1963 and placed the firm order on the manufacturer on 27th February, 1964. As the validity of the offer of the manufacturer expired on 15th December, 1963, the Company had

to obtain the equipment at an extra cost of Rs. 35,134 owing to the enhancement of the price to Rs. 2,71,825.

Had the import licences been applied for in July, 1963, when the offers were provisionally accepted, the extra expenditure of Rs. 87,138 (Rs. 52,004+ Rs. 35,134) could have been avoided. The Management have stated (June, 1964) that the delay in applying for the import licence was due to the time taken in finalisation of the technical specifications of the goods in the import licence applications.

Hindustan Steel Ltd.

Failure to decide on tenders in time—

In September, 1959 the Bhilai Steel Plant invited tenders for the purchase of 70 tons of Metallic Aluminium Powder. The lowest offer was of firm 'A' at the rate of Rs. 3,300 per ton and was valid up to January, 1960. No decision on the tenders was taken in time. A limited enquiry was subsequently issued on 15th April, 1960 to 4 firms on the ground of urgency and an order for 10 tons to be supplied by June, 1960 was placed on 10th May, 1960 with the same firm 'A' whose offer of Rs. 4,250 per ton against the limited tender was the lowest. The supplv of the material was completed by June, 1961.

For the purchase of the balance quantity of 60 tons quotations were again invited in June, 1960 and in October, 1960 an order for 60 tons at a negotiated rate of Rs. 5,051 per ton was placed again with firm 'A' whose quotation of Rs. 5,101 against this enquiry was the lowest. Although the entire supply was to be completed by June, 1961 the firm supplied only 13·568 tons up to August, 1961. The order for the balance quantity was cancelled on 2nd December, 1961. The failure to take a decision in time on the first tender thus resulted in the Company paying more than 50 per cent for a portion of the same material.

National Coal Development Corporation Ltd.

Delay in placing a supply order—

On 1st November, 1961 the Company invited open tenders for the purchase of 28 items of Mild Steel Electrodes with the stipulation that quotations should be submitted by 13th December, 1961 and be valid up to 12th March, 1962. A firm, on which an order for 12 items valuing Rs. 3,67,909 was placed on 30th April, 1962 expressed its inability to supply the materials at the prices originally

quoted by it on the grounds that the period of validity of its tender had already expired and that the prices of raw matetrials had increased in the meantime. It also demanded an increase of Rs. 79,875 which was accepted by the Company.

The non-finalisation of the supply order within the validity period resulted in an extra avoidable expenditure of Rs. 79,875.

Neyveli Lignite Corporation Ltd.

Delay in placing order within the validity period

On the 14th October, 1963 the Company issued a tender enquiry for the supply of Chirwood, stipulating therein that the prices quoted should be F.O.R. Neyveli and that offers should remain open for three months from the date of opening tenders. The tenders were opened on 4th December, 1963.

Out of six offers received the lowest offer was that of a firm which quoted the rate of Rs. 15·50 per cft. F.O.R. Jagadhari. The Company requested the firm on 5th February, 1964 to quote F.O.R. Neyveli, but it did not agree to the proposal.

On 5th June, 1964 the Company accepted the advice of the finance branch to place the order on the lowest tenderer and on 6th June, 1964 requested him to confirm his offer. In reply the tenderer intimated the increase of his rates from Rs. 15·50 per cft. to Rs. 23·50 per cft. F.O.R. Jagadhari. As this price was more than the rates quoted by the next lowest tenderer the Company accepted the offer of the next lowest tenderer and placed an order on 29th June, 1964 at his quoted rate of Rs. 23·92 per cft. F.O.R. Neyveli.

Had the Company decided to accept the original offer (F.O.R. Jagadhari) of the lowest tenderer within the validity period, it could have avoided an extra expenditure of Rs. 66,385 on the supply of 11,792·27 cft. of timber [the cost incurred (Rs. 2,82,196) less the amount which would have been payable had the order been placed with the lowest tenderer (Rs. 2,15,811).]

Oil & Natural Gas Commission

1. *Extra expenditure of Rs.* 26,486 *in the purchase of generating sets—total cost of purchase Rs.* 1,69,671.61—

Supply order for purchase of 7 generating sets was placed on the Greaves Cotton & Co. Ltd., on October 9, 1963 with delivery date within 3 to 4 months which was not guaranteed. Actually the sets

were supplied after 8 months. The quotation of another firm, which was lower by Rs. 3,783·80 per set with delivery period 12 to 14 months was rejected on grounds of urgency. A period of 5 months was taken to invite quotations after the receipt of indent. If timely action had been taken, the indent could have been placed with the second firm.

2. *Avoidable expenditure of Rs.* 17,370 *on purchase of caustic soda at a cost of Rs.* 1,10,680 (*headquarters stores*).

The State Trading Corporation Ltd. released 120·40 metric tons of caustic soda required by the Commission in April, 1963. Due to delay in placing orders, and issue of despatch instructions, an extra expenditure of Rs. 17,370 was incurred as in the meantime prices had risen.

APPENDIX III

Summary of main Conclusions/Recommendations

Sl. No.	Reference to para No. in the Report	Summary of Conclusions/ Recommendations
1	2	3
1	11	Even granting that the inventories in any concern vary according to the nature of the undertaking and the type of materials required and thus the average inventory holdings in the private sector companies may not be quite comparable with those in the public sector undertakings, the holding of inventories to the extent of 15 months value of production can by no means be justified. It needs hardly any emphasis that the reduction of inventories can help in releasing the capital so scarce in the country and in conserving valuable foreign exchange. Any avoidable locking up of capital in inventories deprives some other essential project or programme of finances. Further, inventories also cost a good deal by way of interest charges, cost of storage and handling, deterioration and obsolescence costs. Even on a conservative estimate, the cost of carrying inventory is estimated at a minimum of 15 per cent per annum. To the extent that there are excessive inventories, the cost of production as well as the profitability of a concern is affected.
	12	If the inventories of industrial running concerns could be reduced to 6 months production—which would by no means be difficult—it would mean release of capital to the extent of Rs. 104 crores, which could be gainfully employed either in the undertaking or to finance some other essential project or programme. Further, leaving aside the profit which might have been earned on this investment, this would have resulted in reducing the inventory carrying cost to the

1	2	3
		extent of Rs. 15.60 crores. (on the basis of 15 per cent inventory carrying cost). It is significant to note the effect of this saving on the profitability of the public undertakings. The net profit of these 22 undertakings was only Rs. 10.19 crores during the year 1964-65. With proper inventory control alone the profit would have been two and a half times of the present profit of these concerns.
2	13	The Committee note with concern that the value of inventories of 21 industrial running concerns in 1964-65 instead of decreasing had increased as compared to 1963-64, and was equivalent to 15 months value of production as compared to 13 months during the previous year. Evidently no concerted efforts have been made by the undertakings towards materials management and the application of various scientific techniques to control inventories.
3	15	Materials costs usually constitute about two-thirds of the total cost of production in an undertaking. Economy in materials costs is, therefore, a vital factor for the profit-earning capacity of an undertaking. The Committee regret to note that the administrative Ministries have not given enough care and attention to the materials management problems in the undertakings under their control. From the experience of working of several undertakings, Government had the advantage of knowing as to what basic principles of materials control systems and techniques were suited to the undertakings and to what extent there were deficiencies in various undertakings. It was, therefore, expected of the administrative Ministries to issue suitable instructions to provide guidelines to the undertakings for implementation. The Committee trust that in future the materials management systems in the public undertakings would receive due attention of the Ministries and suitable instructions issued by them, wherever considered necessary.
4	19	The Committee are concerned over the heavy stock of stores & spares in the public undertakings, which in some of the undertakings, based on the present rate of consumption, would be

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		sufficient for several years to come. It is unfortunate that the spares offered by the suppliers of plant and machinery/collaborators should have been accepted by the undertakings without any review of the actual need for them.
5	20	The Committee find that in many of the public undertakings, the stock of stores and spares as compared to consumption during the year has increased in 1964-65 over that in 1962-63. It is therefore evident that not only was there heavy initial purchase of spares, but subsequently, the stores and spares have been purchased without proper assessment of requirements and/or without taking into account the stores and spares already in hand.
6	24	Not only were there excessive purchases of stores and spares but no serious efforts were made to control the inventories through regular periodical review of items in stock to locate the non-moving/surplus stores and to dispose of the unwanted stores without undue delay. The Committee therefore desire that the public undertakings should review the systems prevalent in their concerns about the planning and purchasing of stores and spares and also review the items in stock to ensure that the undertakings are not burdened with excessive stocks.
7	28	In order to guard against the accumulation of finished goods, it is desirable that the public undertakings should enter into firm contracts before taking up the production of items as are specially manufactured for a particular customer. The agreements should also provide for the levy of storage charges etc. on the failure of the customers to lift the goods according to the delivery schedules.
8	29	The Committee noted that some of the public undertakings *e.g.* Garden Reach Workshops, Indian Telephone Industries Ltd. etc. have not fixed any limit for stocking of finished and semi-finished goods. In order to have a check on their stock, it is essential that suitable limits for finished and semi-finished goods should be laid down and the actuals compared periodically with the limits so fixed.

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9	32	In the absence of proper classification and codification no check or control can be exercised over the existing stock and there can be instances of items of stores being purchased while similar items may be lying in stock bearing a different nomenclature. It is, therefore, necessary to classify properly all the items held in stock and also to standardize their nomenclature. Each category should also be given a distinctive code number so as to facilitate a quick and sure identification. If necessary, a separate cell may be created in the Stores Department to undertake this work. Necessary catalogues should also be prepared by this cell and made available to all concerned to acquaint them about the items of stores available in stock. This will enable the plants to utilise the existing stocks to the best advantage and to avoid unnecessary purchases.
10	36	The consequence of large varieties of similar items of stores is that the undertakings have to stock adequate quantities of all the spares pertaining to each type in use so as to be able to keep all the machines in working order, resulting in high inventories.
	37	Effective steps have been taken in other countries for cost reduction through reduction in the number of stores items. There is great scope for cost reduction in public undertakings in India through reduction of varieties of stores. Standardisation of stores items is therefore an urgent necessity. This will help in reducing work load through bulk purchases of fewer items, in securing economical prices, in minimising capital investment on a variety of stocks, and in reducing the materials cost.
11	39	The Committee find that although the public undertakings are conscious of the need for standardisation and certain steps have been taken by some of them in this direction, there is still a great leeway to be made. The Committee therefore desire that the matter should be pursued vigorously by the public undertakings in coordination with the Indian Standards Institution or other specialised agencies. They would

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		like to point out that the aim of standardization should be to have uniform standards for similar items, and the standards evolved should take cognizance of indigenous availability of materials to the maximum extent possible.
12	42	With A B C analysis, it is possible both to minimise the risk of stockouts and to reduce investment in inventories. The Committee therefore desire that such an analysis should be made urgently by all the public undertakings. Further, determination of the maximum and minimum stocks of 'A' class items, their replenishment intervals, the quantities per replenishment order and the frequency of the reviews should be the responsibility of the top management.
13	45	Separation of indenting and purchasing functions is not conducive to efficient materials management. The problem of providing materials to the users in the right quantity at the right time and at the lowest over-all cost, taking into consideration the buying cost and the inventory carrying cost, requires organisational coordination of indenting and purchasing function and it is therefore desirable to have the identing and purchasing functions under a common head.
14	46	Besides difficulty of co-ordination division of stores under the Works Managers instead of having them under the control of Central Stores Organisation results in loading the production departments with avoidable work. If relieved of the inventory responsibility the line managers can devote more time to their primary duty of production.
15	47	Separation of Stores and Purchase functioning under two different self contained Departments meeting at the level of General Manager|Managing Director is not conducive to efficient materials management function.
16	48	There are different types of organisational set ups in the public undertakings for materials management. While it is difficult for the Committee to suggest any ideal organisational pattern which would suit all the public undertakings, the Committee are in favour of the un-

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		dertakings having an integrated organisation for all materials management functions. Although such an organisation may have different units/ departments, it should be under overall control of a person who should be of sufficiently high status as the Finance or the Production Departments head. The Committee, therefore, desire that the present organisational set up for materials management in different public undertakings should be reviewed to examine as to what extent these require modifications to suit the requirements of each undertaking and to ensure effective control.
17	54	The location of various units of an undertaking at different places in the country creates special problems of planning, programming and provisioning of materials. It is, therefore, essential that a general pattern of organisation applicable to the various multi-unit organisations should be evolved. The Committee feel that if the purchases are decentralised wholly or substantially, there are dangers of high overall purchasing costs, coupled with dangers of unhealthy buying competition among the units of the same undertaking. The Committee are of the view that there should be central control and/or coordination among all the units of an undertaking with regard to (i) items of common use and (ii) items which are imported. In all these cases even if it is not considered feasible to have complete centralisation of all purchases, there should be substantial degree of central control in the matter of fixing suppliers, the prices, the methods of purchases, etc. Once these are fixed, each unit could negotiate with the suppliers about the quantities to be purchased, delivery time etc. according to the individual requirements.
18	58	The Committee feel that the organisational set up for inspection in the public undertakings requires to be reviewed with the object of evolving a uniform pattern which will be best suited to the requirements of these undertakings. In the opinion of the Committee the inspection should be carried out by a separate wing which

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		should be under the overall control of the Materials Management Department. The responsibility of providing materials in right quantity, of right quality and at right time is that of the Materials Management Department and to achieve this objective it is necesary that the inspection wing should be under this integrated organisation. The Inspection wing could of course take the assistance of technical personnel in the users/production department for inspection wherever necessary before materials are accepted.
19	61	The Committee feel that *ad hoc* short courses or on-the-job training alone cannot serve the purpose and there is need for sustained training in materials management. The Committee, therefore, consider that the existing training facilities in the public undertakings need to be strengthened.
20	65	A large percentage of orders for small values in some of the public undertakings indicates that there was no proper planning and programming for materials. It was admitted during evidence that a large number of orders of small value was not good and the system of planning should be such that normally no occasion arises for an emergency purchase except in unforseen circumstances. The Committee therefore desire that the undertakings should review the system of planning and programming to ensure proper inventory management. A periodical report about rush purchases should also be sent to the head of the undertaking.
21	66	The Committee would like to point out that for proper materials planning it is vitally important that there should be close liaison between the Production Department and the Materials Management Department. For principal materials, it is necessary that the Materials Management Department is given a reasonably accurate forecast of both the short term and long term production programmes. Based on the production schedules, the Materials Management Department could prepare details of their immediate and forward requirements in relation to stock in hand

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		and ordered and other relevant factors to determine further orders to be placed and the delivery schedules for the materials. It is also essential that the Materials Management Department is kept informed of any changes in sales/production schedules which may be necessitated from time to time. Similarly the Materials Management Department should keep production/Sales Departments advised of any difficulty arising in the flow of materials.
22	67-68	In regard to items of regular use (usually referred to as stock items or repetitive stores) it is desirable to have system of automatic replenishment based on re-order levels. In the absence of such a system supplies are arranged on the basis of indents from consuming departments. This procedure leads to excessive stock. It is therefore essential that the items of regular use should have a system of automatic replenishment based on minimum, maximum and re-order levels.
23	71	The Committee view with concern the absence in certain public undertakings of provision for proper inventory levels so essential for inventory control. They consider that it is necessary not only to fix these limits but also to review them periodically because the assumptions on which these are based *e.g.* procurement time and the rate of consumption are subject to frequent changes.
24	74	Purchase of items categorised as non-stock but which are procured frequently causes delays in purchases and results in rush buying besides adding to the buying cost. There should therefore be a periodic review say once in six months of all non-stock purchases and such of the non-stock items as are of a repetitive nature should be converted into stock items.
25	76	The Committee noticed that there was hardly any undertaking which worked out the buying cost per order or the inventory carrying cost on a systematic basis, with the result that economic order quantities for the various items to be stocked have not been fixed on the basis of these costs. The Committee feel that the present practice of

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		determining order quantities on the basis of consumption and lead time only should be reviewed and buying and carrying costs of inventories should also be taken into consideration. Besides, the economic order quantities so fixed should be reviewed periodically in the light of any changes in the buying cost or inventory carrying cost.
26	80	For purchases through limited tenders lists of approved suppliers are a *sine qua non*. In many of the Public undertakings there is no system of registering suppliers/contractors for all the items of stores and maintaining an up-to-date list of suppliers. The Committee desire that such up-to-date list for every store item should be maintained by all the public undertakings.
27	81	It is necessary to fix the number of suppliers to whom the Limited Tender Inquiries will be sent based on the value of the purchase order. In case the number of suppliers invited to tender or the valid quotations received is less than the number fixed, the purchasing officer should obtain the approval of the next higher authority before ordering purchase.
28	82-83	The suppliers under the DGS & D- rate contracts do not keep up promised delivery schedules. Most of the suppliers prefer to get orders outside the rate contracts and give preference to their execution as such rates are more favourable. Further, DGS & D rate contract implies DGS & D inspection and payment. Since this is a lengthy process, suppliers prefer to deal directly and outside the rate contracts. The Committee feel that the matter calls for serious attention by the DGS & D. They would suggest that all cases where there had been serious delays in receipt of materials under the DGS & D rate contracts, should be reported by the public undertakings to the DGS & D and such cases should be investigated by the DGS & D to find out the circumstances for delays in delivery or for charging the higher rates. The threat of termination of rate contracts with the defaulting parties and/or entering into parallel rate contracts with other parties could help in improving the position in such cases.

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29	86	For the smooth working of the Purchase Department it is necessary that the work load is evenly distributed throughout the year, instead of the purchases being rushed during the closing months of the year.
		To reduce the lead time in placing purchase orders, the Committee would suggest the following measures:—
30	90	(i) At present many of the public undertakings have not fixed any time limit for each stage of purchase *e.g.* for receipt of indent and issue of enquiry, receipt and consideration of quotations, issue of purchase orders etc. Fixation of such a time limit will act as a check on the performance of the Purchase Department. The time taken to release the purchase orders during a particular period and the pending indents should also be reviewed periodically with a view to examine the reasons for the delay in placing orders and to take remedial measures.
		(ii) In some of the undertakings (*e.g.* Hindustan Antibiotics Ltd., Hindustan Cables Ltd., Hindustan Insecticides Ltd., Hindustan Teleprinters Ltd., etc.) there is no proper delegation of powers for purchases and the limits up to which various officers could place the purchase orders had not been laid down. It is necessary to lay down such limits to reduce the administrative lead time.
		(iii) Some of the public undertakings have appointed Stores Purchase Committees for scrutinising purchase proposals above a certain prescribed monetary limit. The common practice is to have representatives of concerned departments such as Finance, Production and Purchase Departments in such Committees. Appointment of such Committee obviates avoidable delay in inter-departmental notings and correspondence, gives the opportunity to the concerned departments to exchange views and helps in taking quick decisions. This system could be adopted by the undertakings who do not have such Committees.

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31	95	The Committee feel that large number of references to Finance tend to add to delay in placing purchase orders. Reduction of the number of such references without impairing financial control will directly result in reduction of work in both the purchase and finance branches, simplification of the procurement procedure, shortening of the administrative lead time and diminution in the number of stockouts and emergency purchases. What is needed for proper budgetary control is to sanction the overall budget and also to divide it as far as possible shop-wise or product-wise. The purchase Department should then be empowered to place purchase orders within the sanctioned budget according to the limits and conditions laid down. The present practice of obtaining financial concurrence for each order irrespective of the value of the order and notwithstanding the acceptance of the lowest tender is unnecessary and time consuming.
32	96	The Committee do not under-estimate the need for proper financial control over the Purchase Department. It may be necessary to fix certain financial limits over which it may be desirable to refer the case to Finance before placing the purchase order. The other cases where it might be necessary to refer the case to Finance may be as follows:— (i) Where the ring prices are quoted by the tenderers or the lowest offer is higher than the last purchase price by a certain limit say 5 per cent. (ii) Where the difference between the accepted and the lowest tender is more than fixed limit say 5 per cent subject to an overall limit. Further in order to ensure that correct and proper procedures are followed by Purchase Department, there can be a larger percentage of post-audit. This would act as a check on the Purchase Department without impairing its efficiency in placing purchase orders.
33	97	The Committee desire that the procedures obtaining at present in various public undertakings should be reviewed and suitably modified

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		to avoid unnecessary consultations, references and cross references to Finance which, while not contributing anything to purchase efficiency, merely add to the delay.
34	99	To obviate delays in taking approval of Finance proper forms should be devised by each undertaking containing details of information generally required by Finance so that purchase proposals sent to Finance are complete in all respects and time is not lost in avoidable cross references between the Purchase and Finance Departments.
35	105	The Committee are glad to note the improvements effected in the procedure for allowing imports by the public undertakings. They trust that the revised procedure would be effectively implemented and its actual working reviewed periodically.
36	107	Value analysis has already become popular in many countries and the results achieved have been quite encouraging. However, in India, it has not found wide application and there are not many public undertakings doing value analysis in a systematic manner.
	108	It needs hardly any emphasis that value analysis offers a large scope for cost reduction and all the public undertakings should undertake it in a systematic manner. Such an analysis has of course to be conducted by a team comprising personnel from Materials Management, Designing, Engineering, Production, and Research and Development Departments.
37	114	The Committee welcome the steps taken by Hindustan Steel Ltd. and some other public undertakings for import substitution. Considering, however, that a large percentage of requirements of spares was still met through imports by several undertakings, there is need for a systematic effort by all the public undertakings to develop indigenous substitutes and to achieve self sufficiency in the matter of procurement of raw materials, spares and components.

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38	115-116	The Committee feel that all the undertakings depending substantially on imported products should have a separate cell for research and development in the field of import substitution. To achieve results in the field, full use should also be made of the various Research Institutes in the country. Co-operation of private manufacturers could also be very valuable and they should be encouraged to take up the manufacture of these items by making available to them the detailed catalogues of imported items and by holding exhibitions, etc. The Committee also feel that there should be frequent exchange of ideas and information among the public undertakings about the efforts made for import substitution.
39	121	While the Committee agree with the policy of giving price preference for indigenous products, it is desirable that a uniform policy should be followed by all the public undertakings regarding the extent to which price preference should be allowed. They, therefore, feel that Government should lay down a limit up to which the public undertakings should be empowered to give price preference for indigenous products. In case it is considered necessary in any case to give price preference over the limit so fixed, the specific approval of the Board of Directors should be obtained before going in for indigenous products.
40	122	Many of the public undertakings (*e.g.* Garden Reach Workshops Ltd., Hindustan Insecticides Ltd., National Buildings Construction Corporation Ltd., National Coal Development Corporation Ltd., National Instruments Ltd., Praga Tools Ltd. etc.) have not laid down proper procedure for follow up of purchase orders. The Committee desire that all the public undertakings should lay down proper follow up procedure in this respect.
41	126	The Committee feel that according to normal commercial practice, in the purchase proposals and agreements, a clause for liquidated damages

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		should be provided so as to ensure that the contractors supply the materials within the stipulated delivery period. This provision should also be enforced unless for good and valid reasons suppliers obtain consent to postponement of delivery dates.
42	131	In recent years, facilities for transportation of goods by road have increased. Road transport is costlier but at the same time speedier and perhaps safer too as compared to rail. However, no systematic effort seems to have been made to determine the relative costs of transport by rail or road. In view of the general shortage of railway wagons, the Committee suggest that each undertakings should work out the relative costs of transport by rail and road for its various products, keeping in view the time factor, packing costs, safety in transit, etc.
43	133	The Committee feel that the question of difficulties in transportation of over sized equipment merits serious attention of government and the Railway Board with a view to taking remedial measures to avoid the difficulties in transportation of over sized or heavy equipment which might occur after electrification of railways.
44	136	The Committee desire that the procedure for inspection of various types of materials should be laid down by all the public undertakings. While the method of inspection to be adopted will depend on the requirements of each undertaking, it is essential that the procedure for inspection should be a simple one since if the procedure is too elaborate it could be costly and time consuming added with the danger of being by passed.
45	139	To avoid unnecessary delay in the process of inspection it is desirable that the time limit for inspection of various types of materials should be laid down and actual time taken in inspection as against the limit fixed reviewed periodically.
46	142	The Committee understand that even after the goods are inspected by Directorate General of Supplies & Disposals, the undertakings have

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		to inspect the materials on receipt. This inspection may be for quality or quantity or for both. Since inspection by Directorate General of Supplies & Disposals and again by the undertakings involves duplication of effort, the Committee would suggest that in cases where the undertakings can make arrangements for inspection by their own staff, the feasibility of permitting them to do so may be examined.
47	144	The Committee would suggest in-process inspection at suppliers' end in suitable cases. This would help in reducing the percentage of rejections at destination and also save the time, labour and expenditure involved in sending back the defective materials and obtaining replacements.
48	145	The Committee found that mostly the public undertakings did not maintain statistics about the extent of materials rejected, the firms which supplied such materials, etc. They feel that the maintenance of such statistics would help in locating the types of materials generally found defective and the firms which supply defective or substandard materials.
49	146	The Committee were informed that the names of the suppliers who consistently supply substandard materials are removed from the list of approved suppliers. They would suggest that the names of such suppliers should also be circulated to other public undertakings, Government Purchasing Departments so that they may be cautious while dealing with such firms. Besides helping the other public undertakings, this would act as a deterrent to the bad suppliers.
50	147	Considering that the material costs account for a major portion of the total cost of finished products, the question of best utilisation of the materials received is extremely important. It is therefore essential that the norms of consumption for various materials are fixed on a scientific basis and the actual consumption checked periodically with the norms to locate the cases of excess consumption. The Committee regret

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		to note that in many of the public undertakings *e.g.* Hindustan Antibiotics Ltd., Praga Tools Ltd., National Projects Construction Corporation, etc. such norms of consumption have not been laid down. They desire that these norms should be laid down by all the public undertakings wherever feasible, and periodically reviewed in the light of actual working of the undertaking.
51	148-50	The Committee note that in some of the undertakings, the actual consumption was much more than the norms prescribed. The Committee desire that all cases of excess consumption should be thoroughly investigated and remedial measures taken.
52	155	It is regrettable that in many of the public undertakings there was laxity in the care and custody of the materials. While different items have to be treated with varied degree of care according to their nature, any scheme of storage and stores control should achieve the following objectives:— (i) Maximum utilisation of the space for storage. (ii) Care of handling stores during the process of receipt, inspection, storage and issue and to ensure an undisturbed and easy flow. (iii) Preservation of stores against breakage, spillage or deterioration. (iv) Security against pilferage. The Committee trust that suitable measures will be taken by all the public undertakings for proper storage, care and custody of materials.
53	160	The Committee view with concern the serious lapses in the maintenance of stores accounts in some of the public undertakings. In the absence of proper accounts it is difficult to maintain any control over the receipt and issue of stores, to check the shortages in stores if any and to fix the responsibility for the losses. Proper valuation of stores issued and consumed is also rendered difficult. The maintenance of proper and complete stores accounts is therefore absolutely essential.

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54	161	The Committee would emphasise that the system of accounting should be such as would void unnecessary duplication of work without losing sight of the objective.
	163	The Committee feel that the present practice of maintaining two sets of stores cards in the Stores Department needs to be reviewed. In the view of the Committee, it is desirable to maintain only one set of stores cards (say of the kardex type) as it would avoid duplication of work without impairing efficiency of material control system. The practice of maintaining Priced Stores Ledgers in the Accounts Department would have to be continued in such cases. In some undertakings where the number of items in stock is very large, the total volume of transactions would justify installation of computers or other mechanised equipment. In these undertakings, the feasibility of maintaining only one set of stores cards with the help of such equipment and thus obviating the necessity of maintaining separate Priced Stores Ledgers in the Accounts Department should be examined.
55	169	The large variations between the actual stocks and ledger balances is a reflection on the standard of stores keeping and of stores accounting and should be taken serious notice of by the public undertakings. The discrepancies noticed as a result of such verification should be reconciled promptly and all shortages which come to light must be investigated.
56	170	Some shortages may be inevitable in certain undertakings in the normal course of handling of certain stores. In such cases suitable norms should be fixed for such handling losses and the actual shortages compared with the limits so fixed. Instances are not wanting where the actual losses suffered were even more than the norms so fixed. Thus in Hindustan Steel Ltd., the norms of handling losses of raw materials permitted losses of major raw materials upto Rs. 80—100 lakhs in each plant to be written off automatically. But in actual practice, in Durgapur Steel Plant the losses of raw materials were even more than these limits. Such abnormal shortages should be viewed with concern. Immediate action should be taken to analyse the

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		reasons therefor and suitable measures taken to prevent their recurrence. The norms fixed should also be regularly reviewed with the object of keeping the losses as low as possible.
57	172	To ensure proper working of the Materials Management Department it is essential that the procedures to be followed regarding materials purchasing, inspection, storing, issue and disposal etc. are clearly laid down for the guidance of all concerned. A comprehensive manual on the various aspects of Materials Management is therefore an urgent necessity and immediate attention should be paid by all the public undertakings to prepare such a manual.
58	175	There has been loss of valuable by-products because of lack of proper planning and forethought. In some cases by-product plants were installed late and the products could not be sold because market study had not been made in advance nor had adequate steps been taken to develop the market. This happens, because at the time of setting up of the projects, little or no attention is paid towards production and utilisation of by-products. The Committee consider it essential that at the time of preparation of detailed Project Report itself proper assessment of the nature and the extent of by-products likely to arise during production/operation of the plant, should be worked out so that adequate arrangements about their utilisation/disposal could be made well in time of the arising of these by-products. The Committee noticed that the operation of some of the by-product plants could not be continued due to defects in the plant and machinery or in operation. It is surprising that even after several years of the working of some of the by-products plants of Hindustan Steel Ltd. it had not been possible to rectify defects in the plants and machinery for the by-products. The Committee trust that effective steps would be taken soon to set right the defects in the plant and machinery to ensure proper utilisation of the by-products.

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60	179	In the absence of periodical reports to the top management it is difficult to maintain close watch over the inventories. While the precise nature of the reports which should be submitted to the top Management and their periodicity may differ to some extent from undertaking to undertaking, the Committee feel that the top Management (General Manager, Chairman/ Managing Director, Board of Directors) should get periodical reports (monthly/quarterly) on the following aspects of Materials Management:— I. Reports about purchases containing the following information:— (i) Details of purchases above certain limits, (ii) Purchases over certain limit where lowest tenders were not accepted. (iii) Details of rush and emergency purchases showing items purchased, their value, source of purchase, reasons etc. (iv) Details of indents outstanding *viz.* their number, the period for which these were outstanding, reasons for delay, if any. II. Reports about Stores Department containing the following information:— (i) Stock position about major raw materials, stores, finished goods etc. (ii) Position about slow moving/non-moving stores, extent of surplus stores and position about their disposal. III. General Reports about the following:— (i) Reports about the foreign exchange utilisation; (ii) The imports made; (iii) Steps taken for import substitution and the results achieved; and (iv) Value analysis reports etc.

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		The above reports should contain essential data only and should be submitted soon after the close of the period to which they pertain. Also, maintenance of purchase and stores records should be such as would enable compilation of necessary information without involving much labour and time.
61	180	After an examination of the working of Materials Management in public undertakings, the Committee feel that although most of the undertakings are conscious of heavy investment in inventories, there has not been a continuous effort to control inventories or to introduce new techniques of materials management. In conclusion the Committee wish to make the following general observations:— (1) By and large, materials management has been given a secondary importance in the organisational set up of an undertaking. There is, therefore, need to pay greater attention to the efficient functioning of this department. (2) A large number of undertakings depend on imported spare parts and components. Because of long lead time required for imported products and due to acute foreign exchange situation, there is a tendency on the part of the undertakings to import larger stocks in order to avoid possible stoppage of production due to non-availability of stocks at the required time. There is therefore need to liberalise maintenance imports to obviate this tendency. There is also need for stepping up indigenous production and development of ancillary industries so that dependence on imports is reduced to the minimum. Government should pay particular attention to these matters. (iii) Various methods of inventory control have been adopted in industrially advanced countries. These are classification, codification, standardisation, variety reduction, value analysis, A.B.C. analysis etc. Adoption of these methods can greatly

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		help in reducing costs. Barring a few undertakings, these aspects have not been given proper attention. These new techniques should be employed.
		(iv) There have been numerous complaints from the undertakings that, both from the point of view of quality and price, the indigenous products do not compare favourably with the imported ones. While the undertakings can help the indigenous manufacturers to improve the quality of their products, Government also should take suitable steps for reducing the costs of such products.
		(v) Utilisation of by-products has not received proper and adequate attention of several undertakings. In some cases plans for their utilisation were initiated quite late, while in others by-product plants had been installed but were not operating due to defects in the plant or because adequate efforts had not been made to develop the market for those products. There is need for advance planning in this respect and also for implementing the plans.
		(vi) There is a general feeling that materials management does not require any specialised knowledge. It is perhaps for this reason that there are practically no regular arrangements in the country for training of personnel at various levels for appointment to materials management posts. The efficiency of the materials management department will depend on the qualifications and experience of the personnel appointed therein. It is, therefore, essential to arrange regular institutional training in materials management and for exchange of ideas and information through seminars, etc.

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