REPORT OF THE COMPTROLLER & AUDITOR GENERAL OF INDIA 1975

REPORT

ERRATA

Part III—1975

Page No.	Reference	*For*	*Read*
3	Paragraph 2.01 Heading of column 2 of the table	Paid-up capital i lakhs of rupees	Paid-up capital in lakhs of rupees.
17	Line 6 from bottom	would 25,256	would be 25,256
29	Table—Actual production of teleprinter units for 1968-69	5,011	5,010
65	Line one	capactities	capacities

Hindustan Teleprinters Limited

REPORT

OF THE

COMPTROLLER AND AUDITOR GENERAL

OF INDIA

UNION GOVERNMENT (COMMERCIAL)

1975

PART III

Hindustan Teleprinters Limited

PREFATORY REMARKS

A reference is invited to the prefatory remarks in Part I of the Report of the Comptroller and Auditor General of India—Union Government (Commercial), 1975 wherein it was mentioned that the Report of the Comptroller and Auditor General of India—Union Government (Commercial) in respect of the undertakings selected for appraisal by the Audit Board will be brought out in several parts.

2. This part contains the results of appraisal undertaken by the Audit Board of the working of the Hindustan Teleprinters Limited, Madras. In this case, the Audit Board consisted of the following members :—

(1) Shri R. P. Ranga, Chairman, Audit Board and *Ex-officio* Additional Deputy Comptroller and Auditor General (Commercial).

(2) Shri S. L. Brahmachary, Member, Audit Board and *Ex-officio* Director of Commercial Audit, Madras.

(3) Shri K. Ranganadham, Member, Audit Board and *Ex-officio* Director of Commercial Audit, Ranchi.

(4) Shri Shanti Swaroop, Retired Senior Member, Posts and Telegraphs Board.

(5) Shri S. K. Kanjilal, Retired Senior Member, Posts and Telegraphs Board.

(3) The Report was finalised by the Audit Board after discussions with the representatives of the Ministry of Communications and the Company on 26th and 27th February, 1976.

4. The Comptroller and Auditor General of India wishes to place on record his appreciation of the work done by the Audit Board and acknowledges with thanks the contribution, in particular, of the two members who are not officers of the Indian Audit and Accounts Department.

were actually reallocated at the time of the cut in the plan allotment of the Department.

The Director General of Posts & Telegraphs stated in May 1959 as under about further delays in processing of the case :—

"The further processing of the case, however, got delayed due to a number of factors, the principal ones being :

(1) getting revised project/figures on an up to date basis;

(2) since, in the meantime, some other firms had expressed their willingness to collaborate with us in the setting up of this factory, the question whether other firms should also be asked to submit project reports for this scheme or not;

(3) the question of how any decision on the type of machines to be manufactured would meet the requirements of Hindi teleprinters later ; and

(4) the difficulties on account of foreign exchange and revised negotiations for getting special payment terms, etc."

Among the other firms who were stated to have expressed willingness, only two firms were asked in November 1958 to submit proposals for association in setting up a teleprinters factory in India. The proposal was actually received only from one firm in March 1959 which was not considered, as it was for the manufacture of a six unit teleprinter instead of a standard five unit machine.

1.02 Though Government approval in principle was obtained in March 1956, it was in November-December 1959 that negotiations were conducted with the three firms. The offer of Messrs Olivetti was considered the most attractive from the point of view of suitability of the teleprinter machines, the production programme and pattern, the foreign exchange cost involved and the total cost as well as other terms and conditions such as facilities for export etc. In February 1960, Government approved

the proposals to enter into an agreement with Messrs Olivetti to act as consultants and collaborators for setting up the factory and to set up a private limited company with 100 per cent Government capital. The collaboration agreement was finalised on the 26th August, 1960 by the Government of India with Messrs Olivetti for acquiring technical information and assistance and materials and components necessary for the manufacture of teleprinters in a factory to be set up in India.

1.03 Pursuant to the decision of Government to set up a Company for taking up the project, "Hindustan Teleprinters Limited" came into being on 14th December, 1960, as a wholly owned Government Company under the Companies Act, 1956. The agreement was assigned by Government to this Company on 7th June, 1961.

2. CAPITAL STRUCTURE

2.01 The Company was registered with an authorised capital of Rs. 3 crores divided into 3 lakh equity shares of Rs. 100 each. The paid-up capital of the Company from time to time was as follows :—

As on	Paid-up capital i lakhs of rupees
31st March, 1962	50.20
31st March, 1963 and 1964	75.00
31st March, 1965 to 31st March, 1973	82.00
31st March, 1974	123.00

The paid-up capital as on 31st March, 1974 includes 41,000 shares of Rs. 100 each allotted to Government as fully paid-up bonus shares by capitalising a sum of Rs. 41 lakhs from the General Reserves during 1973-74.

2.02 During the years 1962, 1963 and 1964, the Company had obtained long term loans aggregating Rs. 110 lakhs from the Govenrment of India. All the loans carried interest at the uniform rate of 5½ per cent, with a rebate of ½ per cent for timely repayment, and were due for repayment in six to eight annual instalments extending up to 1973-74. During the years 1967-68 and 1968-69, the Company made substantial profits which enabled it to pay off these loans much ahead of the scheduled time, *vide* table below :—

(Rupees in lakhs)

	1965-66	1966-67	1967-68	1968-69	1969-70 and later	Total
1. Amount due as per schedule of repayment . . .	4.63	15.05	15.05	15.05	60.22	110.00
2. Amount actually repaid . .	4.63	15.05	48.18	42.14	Nil	110.00

2.03 The Company secured deferred credits from the Italian Collaborators in September 1964, August 1967 and January 1969 for purchase of raw materials, components, tools, etc. worth US $ 3,984,444.39 and Italian lire 274,000,000. The credit was guaranteed by the Government of India. The Company made purchases amounting to US $ 3,959,078.14 and Italian lire 261,569,170. The credit arrangements stipulated payment as follows :—

(a) 5 per cent of the total value on receipt of a letter of guarantee from Messrs Olivetti and 5 per cent against shipping documents (except in the case of supplemental agreement of September 1964 referred to in paragraph 3.03, in which case 10 per cent of the total value was to be paid on signing of the supplemental agreement).

(b) The balance 90 per cent in 19 instalments, the first instalment of 9 per cent payable twelve months from shipment and the successive eighteen half yearly instalments of 4.5 per cent each ; the outstanding amount carrying interest at 6 per cent per annum net of Indian taxes.

The debt equity ratio as on 31st March, 1974 was 0.47 : 1.

3. AGREEMENTS

A. Agreement for supply of equipment and materials and rendering technical assistance

3.01 The agreement entered into between the Government of India and Messrs Olivetti in August 1960 and subsequently assigned to the Hindustan Teleprinters Limited in June 1961 provided for the supply of know-how, production materials, plant and machinery and training of Indian personnel at the Collaborators' works in Italy. It also envisaged production of 3851 teleprinters during the period from November 1960 to May 1965 and the establishment of annual production of 1326 units by stages during the period. The agreement was to continue in operation for a period of 5 years from the date of last signature (August 1960) or until one year after full production and manufacture of 12 models of teleprinters designated as 'schedule equipment' in the agreement, whichever was later. The agreement expired in December 1968.

B. Agreement for the expansion of project

3.02 In August 1963, the Company approved the doubling of capacity of the factory to meet the increasing demand for teleprinters. Negotiations were conducted for obtaining Italian credit for expansion and the terms were agreed upon in June 1964. It was stated by the Ministry of Communications in July 1964 that the Company had estimated the demand for teleprinters during the Fourth Plan period at about 31,000 units. This

estimate was revised by the Company in November 1964 to 39,000 units. On the basis of the estimated demand for 31,000 units, Government considered in July 1964 that for achieving this production, the capacity should be increased to 5,400 units on single shift basis or 7,000 units on double shift operation. The expansion project report, however, envisaged increase of production to 5,400 units on single shift basis or 8,500 units on double shift operation. The Company entered into another agreement with the Collaborators in September 1964 for import of raw materials and components on deferred payment terms to achieve a planned production target of 5,400 units per annum on single shift basis. The contract provided for the supply of tooling dies, jigs, fixtures and machine tools, semi-finished spare parts for tooling, special raw materials for tooling production, tooling documents and drawings, consumable material for Workshop and teleprinter components for a total price of US $ 3.355 million c.i.f. Indian port. The supplies were to be made in partial shipments, the last shipment being not later than 30th June, 1966. The supplies were actually made in six shipments between December 1964 and March 1967 for a total value of US $ 3,397,548.26 including US $ 42,704.53 towards escalation admissible under the agreement.

C. Other agreements

3.03 In September 1964, another supplemental agreement was concluded with the Collaborators regarding terms of payment for goods already supplied to the Company under the original agreement of 1960. According to the original agreement of 1960, payment of 90 per cent of the value of the materials was to be made against shipping documents and the balance 10 per cent on/after receipt of materials. The terms of payment were altered by the supplemental agreement entered into in September 1964 providing for an initial payment of 10 per cent of the amount upon signing of the supplemental agreement (19th September, 1964) and the balance 90 per cent in deferred instalments referred to in paragraph 2.03.

3.04 The Company entered into a further agreement with the Collaborators on 1st August, 1967 according to which workshop tooling, drawings, etc. for a total amount of US $ 380,000 for the manufacture of Hindi Teleprinters Model T2-BZU and T2-BSU were to be supplied on deferred payment terms referred to in paragraph 2.03.

3.05 In January 1969, the Company entered into another agreement with the Collaborators for the supply of teleprinter components consumables and specific tools and raw materials for Workshop, for a total value of Italian lire 274,000,000 on deferred payment terms referred to in paragraph 2.03.

3.06 The following payments have been made by the Company to the Collaborators under these agreements:—

Supply of services and goods	Fees/price paid
(i) Know-how and information	Rs. 17.08 lakhs
(ii) Production materials *viz.* raw materials, components, sub-assemblies and complete units	Rs.197.82 lakhs
(iii) Machinery and production tools for the manufacture of 12 models of teleprinters equipment . . .	Rs. 32.36 lakhs

In addition to the above payments, royalty was payable up to the end of 1970 at the rates specified in the agreement on the basis of the net value of the complete machines assembled less the f.o.b. Italian port prices for components, parts and sub-assemblies imported for the production of these machines. By a supplemental agreement concluded in September 1964, the rates of royalty were reduced with effect from 26th August, 1964, on yearly production in excess of 2000 complete teleprinter machines. A total amount of Rs. 8.86 lakhs for the period up to 31st December, 1970 was paid to the Collaborators on account of royalty. The pay and allowances of Indian personnel sent for training to the Collaborators' workshop in Italy and of Italian

personnel deputed for assistance in setting up the factory and in establishment of production amounted to Rs. 1.09 lakhs and Rs. 10.95 lakhs respectively.

4. *PROJECT ESTIMATES*

A. Original project

4.01 No detailed project report for setting up the factory was prepared by the Collaborators or by the Company. The Company considered the proposal received with the tender from the Collaborators to be comprehensive enough to be treated as the project report.

4.02 The proposal for establishing a teleprinters factory submitted to the Government in March 1956 indicated the estimates of capital cost based on the preliminary proposals received from the three foreign manufacturers of teleprinters. These estimates were intended to give a broad indication of the order of expenditure involved. On the basis of the preliminary proposal of Messrs Olivetti, the project was estimated to cost Rs. 77 lakhs excluding the cost of staff colony and working capital. According to the proposal finalised with Messrs Olivetti and recommended to Government for acceptance in February 1960, the project was estimated to cost Rs. 90.74 lakhs excluding the cost of staff colony and working capital. In regard to increase in estimates, it was stated (February 1960) that while the preliminary proposals gave figures on a broad basis without being backed by a detailed calculation, the new proposals contained a full description of the machine tools with individual prices and a broad list of production tools, jigs and fixtures and test equipment.

4.03 According to the project estimates approved by Government of India in 1960, the project was estimated to cost Rs. 150 lakhs (including Rs. 47.50 lakhs towards working capital). The revised estimates, prepared in 1962 and sanctioned by Government in October 1964, were for Rs. 164.66 lakhs (including Rs. 20 lakhs towards working capital).

The sanction for the revised estimates also provided for production of additional 2000 units of teleprinters up to May 1965 (reduced to 1400 in April 1965) in addition to the original target of 3,851 machines to be produced between November 1960 and May 1965 as per collaboration agreement. The upward revision of the project estimates, as stated by the Ministry in October 1964, was due to increase in prices, higher cost of construction and upward revision of customs duty. The estimated cost thus increased by Rs. 42.16 lakhs to a total of Rs. 144.66 lakhs (excluding working capital) *vide* table below :—

(Rupees in lakhs)

Main components of the Project	Estimates approved in 1960	Revised estimates proposed in 1962 and approved in 1964	Actual expenditure on completion
Land and buildings* . . .	15.00	25.00	31.58
Machine tools and plant .	18.14	31.59	43.45
Production tools . . .	43.45	59.66	64.55
Payments for know-how . .	15.70	13.70	13.69
Staff colony	10.21	10.21	10.21
Furniture etc.	..	4.50	5.54
	102.50	144.66	169.02

*Land has been made available free of cost by the State Government.

4.04 While approving the increase in actual expenditure over the revised estimates, the Government stated (February 1968) that the increase in cost was necessitated by higher cost of construction of buildings, devaluation of rupee and increase in import duty, etc. in the case of production tools, and increase in prices in the case of furniture and fittings. In respect of machine tools and plant, the Government observed that the

amount sanctioned earlier was a lump sum provision and in the absence of detailed estimates therefor, it was difficult to analyse reasons for the variation.

B. **Expansion project**

4.05 A project report for the expansion of capacity from 1,326 units on single shift to 5,400 units on single shift or 8,500 unit machines on double shift per annum was drawn up by the Company in November 1964 and was sanctioned by Government in April 1965 with a capital outlay of Rs. 152.89 lakhs (including Rs. 50 lakhs for township). The estimates were increased to Rs. 184.60 lakhs in February 1968 with the approval of Government. The reasons given for the upward revision were :

(i) higher cost of construction and extension of factory buildings and roads not originally foreseen;

(ii) the effect of devaluation of rupee in the case of plant and machinery and equipment;

(iii) in the case of electrical installations, the original estimate was found to be too low in the light of actual tenders;

(iv) rise in prices in the case of air-conditioning plant;

(v) purchase of additional switchgears in the case of electric sub-stations ; and

(vi) transfer of some teleprinters for the training class and development cell under the head 'Office equipment'.

4.06 The following table indicates the details of the original as well as the revised estimates and the actual expenditure

incurred (up to 31st March, 1974) on the expansion project :—

(Rupees in lakhs)

	Original estimates (April 1965)	Revised estimates (February 1968)	Actual expenditure up to 31-3-1974
1	2	3	4
1. Land and buildings . .	25.00	30.00	32.76
2. Plant and machinery . .	53.76	69.30	61.55
3. Testing equipment . .	3.91	6.00	6.71
4. Electrical installation . .	2.00	5.20	6.76
5. Airconditioning plant . .	3.00	4.50	4.39
6. Electric sub-station . . .	1.13	1.50	1.26
7. Furniture and fittings . .	4.50	4.20	5.35
8. Vehicles	1.89	1.90	1.10
9. Office equipment . . .	0.90	3.30	4.24
10. Specific tooling . . .	6.80	8.70	8.88
11. Staff colony . . .	50.00	50.00	23.74
	152.89	184.60	156.74

Note : Land originally made available free of cost by the State Government was utilised.

4.07 The expansion project was scheduled to be completed by 31st March, 1970 and was completed substantially during 1969-70 except for the staff colony and some minor commitments under plant and machinery and testing equipment. In July 1974, the Company informed Government that the project might be treated as closed as on 31st March, 1974. Government gave

its approval in August 1974. The reduction in expenditure in respect of item 2—plant and machinery, was attributed (August/September 1974) to non-acquisition of some machines and the increase in expenditure in respect of items 3, 4, 7 and 9 to increase in prices and addition to certain requirements which could not be anticipated.

5. PERFORMANCE ANALYSIS

A. Commencement of production

5.01 According to the production programme indicated in the collaboration agreement of August 1960, the manufacture of teleprinters by assembly from imported components was to commence from November 1960. The Company was actually incorporated in December 1960. After observing the various formalities connected with the incorporation of the Company, obtaining import licences, placing orders for components and plant and machinery, recruiting and training personnel partially, etc., production by assembly from imported components actually commenced in April 1961 in temporary premises hired from the Government of Madras (now Tamil Nadu) pending construction of the permanent factory buildings, which was expected to be completed by early 1963.

The acquisition proceedings in respect of the land for the factory buildings were completed in April 1962 and construction of the factory buildings, which was entrusted to the Industries Department of the Government of Madras (now Tamil Nadu) was completed in December 1964.

B. Production performance before expansion

5.02 The collaboration agreement of August 1960 envisaged manufacture of 3,851 teleprinters of 12 types (Annexure A) and achievement of 100 per cent indigenous manufacture or

procurement of components during the period from November, 1960 to May 1965 according to the following schedule :—

Period	Total output of machines	Percentage of indigenous parts
1	2	3
From November 1960 to May 1961 . .	76	0
From May 1961 up to November 1961 . .	100	0
From November 1961 up to May 1962 . .	172	13
From May 1962 up to November 1962 . .	300	38
From November 1962 up to May 1963 . .	551	68
From May 1963 up to November 1963 . .	663	78
From November 1963 up to May 1964 . .	663	94
From May 1964 up to November 1964 . .	663	99
From November 1964 up to May 1965 . .	663	100
	3851	

It was also mentioned in the agreement that the programme of output of machines and the indigenous manufacture or procurement of parts and the actuals might vary somewhat as it was dependent on a number of factors which were difficult to forecast accurately. The percentage of indigenous parts referred to in the last column did not include value of parts which were earmarked for import from the Collaborators for reasons of economy.

5.03 As against the projected capacity of 1,326 units per annum to be achieved by May 1964, the Company could achieve a maximum annual production of 1,088 machines during 1964-65. As against the production target of 5,251 units in the first 54 months of production (including additional 1,400 machines envisaged in the revised project estimates), the actual production was 4,609 machines. The Management attributed the shortfall in production to delay in construction of buildings

which in turn hampered the installation of machinery and production of components, power-cut for one month during June-July 1964 and foreign exchange difficulty in obtaining normal supplies of raw materials and components.

The extent of indigenisation of components by manufacture or procurement is discussed in paragraphs 5.11 and 5.12.

C. **Production performance after expansion**

5.04 *Rated Capacity after expansion.*—As a result of the expansion project, the production capacity was expected to increase to 5,400 units per annum on single shift working or 8,500 units on double shift working. The expansion project report envisaged increase in capacity from 1,326 units per annum to 8,500 units per annum by stages and establishment of the capacity of 8,500 units per annum in double shift working from the year 1970-71 onwards. The capacity of 5,400 units per annum on single shift or 8,500 units on double shift operation after expansion assumed the efficiency of second shift at 57.5 per cent of the single shift performance. A Study Team of the Bureau of Public Enterprises after a study in depth of the working of the Company in March, 1970, *inter alia*, observed as follows :—

> "No doubt, in a second shift that includes about 4 hours of night work, production would not be as much as in day shift, but the reduction would generally be 15—20% and not 40—45%".

The Study Team, therefore, recommended the raising of the rated capacity of the second shift to about 80 per cent of single shift production and on this basis fixed the potential capacity of the factory at about 10,000 machines per annum. The Study Team also desired that studies should be made

by the Company to determine the efficiency of each shift. From the data compiled by the Company in May 1970 it was noticed that the efficiency in both the shifts was almost equal.

The National Productivity Council which studied the Hindustan Teleprinters Ltd. in January 1975 at the instance of the Bureau of Public Enterprises, made the following observations about the capacity :—

> "For purpose of capacity assessment, teleprinters and ancillaries are only being considered and the capacity would be specified in equivalent units of teleprinters. The standard hours required for the manufacture of 100 units teleprinters (BZN) are 6982.7.....
>
> This time includes only the standard time of actual planned job and is exclusive of time spent on setting and any eventualities of idle times. As against this, the total available hours during 1973-74 for machining and assembly has been 8,15,620 hours on the basis of equipments in the production shop and the men in the assembly shop. Since standard hours needed for 100 unit teleprinters does not include set up time etc. the total available time has to be reduced to some extent. The idle time during 1973-74 works out to 32,657 hours which is about 4% of the total available hours. .....
>
> Further, the set up can be taken as about 5% and absenteeism works out to 14% of the total available time. If these three elements are removed from the total available hours, the capacity for manufacture of units works out to about 9,000. However, in any industry of this nature, there will be a certain percentage of idle time at different processes. Taking this into account the capacity available within the plant can be taken as 8,500 units which corresponds to the detailed project report

capacity. Hence, the DPR capacity of 8,500 units on double shift per annum may be considered as the total available capacity."

5.05 *Demand projections and creation of capacity.*—The doubling of the capacity of the factory was approved by the Company in August 1963 after taking the following main facts into consideration :—

(i) The existing demand was very large ; approximately three times the output of the factory.

(ii) There was large accumulated demand for replacement of worn out machines and a sustained high demand for teleprinters because of the introduction of new services such as the Telex and Tape Relay by the P&T, Overseas Communication Service, Railways, Defence, etc.

(iii) Increase of output by double shift working was not feasible.

(iv) Relatively small additions to equipment were required.

The proposal for doubling the capacity was approved in September 1963 at a meeting of the representatives of the Planning Commission and the Ministries of Communications and Finance. In the meantime, the Company prepared (July 1964) its Fourth Five Year Plan (1966—71) which estimated the demand at 31,000 unit machines including the estimated requirement of 27,000 teleprinters for the Posts and Telegraphs Department during the period 1966-67 to 1970-71. This estimate was revised by the Company in November 1964 to 39,000 units. But on the basis of the estimated demand of

31,000 units earlier indicated by the Company, it was considered by Government in July 1964 that expansion of the capacity to 2,700 units would be inadequate. Government, therefore, decided (April 1965) to increase the annual capacity of the factory to 5,400 unit teleprinters on single shift basis or 8,500 unit teleprinters on double shift operation.

The expansion of capacity to 5,400 units on single shift basis or 8,500 units on double shift operation was undertaken on the basis of estimated demand of 31,000 teleprinters including the estimated requirement of 27,000 teleprinters of the Posts and Telegraphs Department during the period 1966-67 to 1970-71. The Workshop was reported to be having capacity to produce components for assembly of 8,500 teleprinter units as well as spares which was not, however, quantified in terms of teleprinters. The actual demand for teleprinters, however, did not materialise as anticipated. The shortfall in demand, especially from the Posts and Telegraphs Department, which is the largest customer for teleprinters, was attributed to pruning of the Fourth Plan outlay. A survey of the requirements of teleprinters and ancillary equipment of various users like the Posts and Telegraphs Department, the Defence Services, the Overseas Communication Service, the Civil Aviation Department, news agencies, etc., conducted by the Company during April-May 1968 revealed that the requirements during the Fourth Plan (1969—74) would be 32,538 units only as against the targeted production of 41,500 units during this period. Subsequently, in March 1969 it was seen from the Fourth Plan (1969—74) of the Posts and Telegraphs Department that their requirements would be 3,305 units only during each year of the plan (16,525 units during the Plan period). It was, therefore, assessed in March 1969 that the total requirements would 25,256 units during 1969—74. In view of the reduced demand for teleprinters, the production targets for assembly for 1969-70 and onwards were fixed much below the production capacity expected to be achieved as per expansion project report. Targets for spares were fixed either in terms of equivalent teleprinter units or for number

of units or in terms of sale value. The table below indicates the capacity expected to be achieved as per the expansion project report and the production targets for assembly fixed by the Management for the years 1965-66 to 1973-74 :—

Year	Production capacity in number of teleprinters expected to be achieved as per expansion project report	Targets fixed by Management — Teleprinter units
1965-66	2,700	2,700
1966-67	3,000	3,000
1967-68	3,500	3,500
1968-69	5,400	5,000
1969-70	7,500	5,500
1970-71	8,500	5,500
1971-72	8,500	5,500
1972-73	8,500	6,000
1973-74	8,500	6,000

5.06 The indications in the project report about utilisation of capacity were based on full double shift working. The Company has, however, been fixing targets with reference to forecasted demand of the major users of teleprinters. In view of restricted demand the actual working had to be restricted to one full shift and only a partial second shift and the manpower is stated to have been regulated with reference to targets so fixed.

5.07 *Actuals* vis-a-vis *capacity and targets.*—The factory has three main production shops *viz.* the Foundry which makes the aluminium castings, the Workshop which produces the components out of the castings received from the Foundry and out of the raw materials purchased and the Assembly Shop which assembles these components along with bought out items into finished teleprinters.

The capacity of the factory has been fixed in terms of assembled teleprinters. Production targets, based on demand

and pending orders, are also fixed for each year in terms of assembled teleprinters.

According to the Management, production in various shops is planned to achieve the annual assembly targets, and in fixing the quantities of components to meet these requirements, spares of each variety of components required for direct sale are also processed along with the quantities required for assembly. Targets are, however, not fixed for each shop separately. The Management have stated (November 1974) that the factory is an integrated unit which is required to assemble certain number of machines per annum and the activities of the Foundry and the Workshop are to be co-ordinated to meet these requirements. As the figures of capacity and targets are available in respect of Assembly Shop, an assessment of performance *vis-a-vis* capacity and targets can be made in respect of the Assembly Shop only. The table below shows performance of the Assembly Shop for the years 1965-66 to 1973-74 with reference to the capacity and the targets fixed by the Management :—

Year	D.P.R. capacity	Targets based on demand	Actuals	Percentage of actuals to	
				Capacity	Targets
1965-66 . .	2700	2700	2502	92.67	92.67
1966-67 . .	3000	3000	2701	90.03	90.03
1967-68 . .	3500	3500	3504	100.11	100.11
1968-69 . .	5400	5000	5010	92.78	100.20
1969-70 . .	7500	5500	5310	70.80	96.54
1970-71 . .	8500	5500	4911	57.78	89.29
1971-72 . .	8500	5500	4779	56.22	86.89
1972-73 . .	8500	6000	6042	71.08	100.70
1973-74 . .	8500	6000	6023	70.86	100.38

The shortfall in production during 1965-66 was attributed to power cut and during 1966-67, to a strike from 3rd October, 1966 to 8th November, 1966. During 1967-68 and 1968-69, the Company had achieved the targeted production. The reasons for the shortfall during 1969-70 were stated to be special

production efforts based on indigenous know-how undertaken in that year. The shortfall in production during 1970-71 and 1971-72 has been ascribed mainly to labour unrest. During 1972-73 and 1973-74 the Company achieved the targeted production.

5.08 As stated in paragraph 5.07, targets of production are not fixed separately for the Workshop and the Foundry. But the Company has stated that the factory is an integrated unit and the activities of the Workshop and the Foundry are to be co-ordinated to produce a certain number of machines per annum. The Workshop and the Foundry can, therefore, be deemed to have a capacity of manufacturing components required for assembly of atleast 8,500 units per annum envisaged in the expansion project report in addition to production of spares which has not been quantified. In 1968-69, the Management fixed time standards for the various operations in the Assembly Shop and the Workshop on the basis of 100 per cent efficiency and under ideal working conditions. According to these time standards, the manufacture of components for a teleprinter unit requires 46.721 standard labour hours in the Workshop. The Industrial Engineering Department compiles the total standrad hours in terms of actual production in the Workshop every year. The table below compares the actual production in the Workshop in terms of teleprinter units calculated on the basis of standard hours required for the manufacture of components for a teleprinter and the capacity (excluding that for spares) as envisaged in the expansion project report, for the last four years ending 1973-74 :

	1970-71	1971-72	1972-73	1973-74
(*a*) Standard hours per unit .	46.721	46.721	46.721	46.721
(*b*) Standard hours calculated for the Workshop operations	245539	223372	280222	261584
(*c*) No. of equivalent units produced . . .	5255	4781	5998	5599
(*d*) Capacity . . .	8500	8500	8500	8500
(*e*) Percentage of utilisation to capacity . . .	61 82	56.24	70.56	65.87

5.09 No assessment could be made in respect of the performance of the Foundry in the absence of records indicating the input and output in terms of tonnage or any other parameter. The Management have been examining various aspects having regard to the complexities and peculiarities of operation, for fixing suitable norms for evaluation of the performance of the Foundry.

5.10 *Rejections.*—In the detailed project report for expansion, norms for rejections have not been mentioned. The Company, however, fixed (December 1968) a standard rate of rejection of 5 per cent on the value of components and castings produced for arriving at the standard cost of components and castings produced. In April 1973, the rate of rejection was related to the material content of the rejections and was fixed at 7 per cent on the material cost of the components and castings produced. The following table indicates the actual rates of rejection on the value of components and castings produced during the last four years :—

(Rupees in lakhs)

	1970-71	1971-72	1972-73	1973-74
I. Workshop				
1. *Components*				
(*a*) Value of components produced	25.60*	91.88	108.71	118.44
(*b*) Value of rejections	2.38*	6.89	7.74	11.20
(*c*) Percentage of (b) to (a)	9.30	7.50	7.12	9.46
2. *Castings (Workshop operations only)*				
(*a*) Value of castings produced	7.09*	16.40	22.61	22.00
(*b*) Value of rejections	0.65*	1.69	1.18	1.33
(*c*) Percentage of (b) to (a)	9.17	10.30	5.23	6.05
II. Foundry				
(*a*) Value of castings	15.61	13.87	14.72	13.21
(*b*) Value of rejections	0.98	0.88	0.77	N.A.
(*c*) Percentage of (b) to (a)	6.29	6.31	5.26	N.A.

*The figures are for the first half year only and details for the second half were not available.

Although there was a downward trend in the rate of rejections in the Workshop upto 1972-73, the percentage of rejections continued to be higher than the standard rate of 5 per cent. The material cost of rejections of components and castings during 1973-74 as worked out by the Management was 4.66 and 5.58 per cent respectively.

5.11 *Import substitution and cost reduction.*—As stated in paragraph 5.02, the collaboration agreement of August 1960 envisaged achievement of 100 per cent indigenous manufacture or procurement of components other than those earmarked for import during the period from November 1960 to May 1965. As against this, indigenisation actually achieved by May 1965 was 42 per cent. The Management stated in September 1966 that 100 per cent manufacture of indigenous components could not be achieved due to non-availability of foreign exchange for procuring raw materials and tooling in time as also due to certain teething troubles experienced in the initial stages and that they expected to reach production with indigenous components fully by the end of 1966-67. The capacity for manufacture of the last component was actually established only by the end of 1967.

The percentage of indigenous parts referred to in the last column in the table in paragraph 5.02 did not include value of the parts which were earmarked for import for economical reasons. The parts that were to be manufactured/procured locally every year or those to be imported for economical reasons were not spelt out precisely in the collaboration agreement ; but it was mentioned: "For economical reasons some parts are earmarked for imports from Olivetti even though Olivetti are supplying the know-how for manufacture. The motor, which is the largest item in this group is, however, being taken up for indigenous manufacture in the period May to November 1963, leaving only a few components of small value to be imported". In the proposal of Messers Olivetti submitted in October 1956 it was suggested that electric motors, type, keytops, and special ball bearings should be imported either directly from the

Collaborators or bought locally from a supplier of high standing and repute atleast for a number of years. The projects for the manufacture of electric motors and typeheads were included in the Fourth Five Year Plan of the Company. The typeheads project was dropped in March 1972 for the reason that it was not economical to manufacture the components. The manufacture of electric motors was established in 1968-69 and it was reported (March 1972) that 1,500 motors were manufactured during 1969-70 and 3,250 motors during 1970-71. In the Directors, Report for 1972-73 it was stated that the Company had been making sustained efforts for reducing the foreign exchange content of its products and imports were restricted to components like precision ball bearings, laminations, filter coil core, governor contacts and code punches and raw materials like special alloy steels, magnetic materials and special sections which were not available indigenously. In the Directors' Report for 1973-74, it was also reported that indigenous sources for supply of filter coil core and ball bearings among components and a certain variety of steel strips were established during 1973-74. The table below indicates the value of raw materials and components imported during 7 years ending 1973-74 :—

(Rupees in lakhs)

	Raw materials	Components	Total
1967-68	9.82	45.92	55.74
1968-69	6.84	32.91	39.75
1969-70	0.40	16.95	17.35
1970-71	16.37	22.24	38.61
1971-72	2.87	16.83	19.70
1972-73	10.04	7.38	17.42
1973-74	1.14	13.30	14.44

It may be seen that the imports were gradually coming down.

5.12 The cost of imported raw materials and components as a percentage of the total cost of components per teleprinter unit

(2 models) as worked out by the Management is indicated below for the last five years :—

Year	Cost of imported raw materials and components per unit		Total cost of components per unit	Percentage of	
	Landed cost	Foreign exchange element		Landed cost to total cost of components per unit	Foreign exchange element to total cost of components per unit
	Rs.	Rs.	Rs.		
				(Col 2 to 4)	(Col 3 to 4)
(1)	(2)	(3)	(4)	(5)	(6)
BSN Model					
1969-70 . .	764	509	3,756	20.34	13.55
1970-71 . .	430	285	4,117	10.45	6.92
1971-72 . .	422	258	4,150	10.17	6.22
1972-73 . .	455	269	3,887	11.71	6.92
1973-74 . .	434	256	4,295	10.10	5.96
BZN Model					
1969-70 . .	826	541	3,166	26.09	17.09
1970-71 . .	661	393	3,433	19.25	11.45
1971-72 . .	332	212	2,987	11.11	7.10
1972-73 . .	354	217	3,225	10.98	6.73
1973-74 . .	365	208	3,057	11.94	6.80

Note.—The cost is as indicated by the management and not the actual cost (*vide* paragraph 11.04).

5.13 *Savings in foreign exchange and cost reduction.*—In the Annual Reports of the Company it has been reported that the Company has been effecting savings in foreign exchange and

cost reduction as a result of sustained efforts for import substitution and has also been constantly effecting cost reduction through value analysis.

Foreign exchange savings

The following savings in foreign exchange on account of import substitution of raw materials and components have been reported :—

(Rs. in lakhs)

Year	Savings in foreign exchange
1967-68	8.00 during the year
1968-69	6.00 during the year
1969-70	8.18 per annum
1970-71	2.16 during the year
1971-72	0.70 per annum
1972-73	0.90 per annum
1973-74	0.98 during the year

Cost reduction

Cost reduction on account of import substitution by indigenous purchase or by own manufacture have also been reported in the annual reports as follows :

(Rs. in lakhs)

Year	Cost reduction
1967-68	7.00 during the year
1968-69	5.70 during the year
1969-70	5.77 per annum
1970-71	2.88 during the year
1971-72	—
1972-73	2.24 per annum
1973-74	0.44 during the year

An analysis of the components substituted as reported during the various years is indicated in the following table :—

Cost Reduction Per Unit

Year	Item	Landed cost	Standard cost	Cost reduction per piece	Cost reduction per unit of tele-printer
		Rs.	Rs.	Rs.	Rs.
1969-70	Motors	349.00	216.00	133.00	133.00
	Tape reel holders.	22.28	9.32	12.96	1.94
1970-71	Punch blocks.	429.81	59.65	370.16	55.52
	Type faces	11.70	12.50	(—)0.80	(—)0.80
	Permanent magnets	25.84	2.79	23.05	46.10
	Send unit cam	118.03	105.19	12.84	12.84
	Selecting cam	31.30	18.04	13.26	13.26
	Tape reader cam	141.45	41.39	100.06	20.01
1971-72	Rear top roller bearing	12.33	4.60	7.73	18.94
1972-73	Answer back drum	13.79	3.61	10.18	10.18
	Ribbon jumper	12.63	1.03	11.60	11.60
	Runout rubber pad	1.95	0.10	1.85	1.85
1973-74	Fitter coil core	2.89	0.85	2.04	4.08
	Ball bearings	5.84	7.29	(—)1.45	(—)2.90

The management stated (September 1975) that the cost reduction measures effected by value engineering, process changes, operational improvements, material savings by revised lay out of production tools and improvement of machine tools from time to time resulted in a saving of Rs. 6.36 lakhs during 1973-74 (*Vide* Annexure B).

6. MANPOWER ANALYSIS

6.01 *Manpower requirements as per estimates of the Collaborators.*—In the proposal received from the Collaborators in respect of the original project, which was treated as the project report *vide* paragraph 4.01, the manpower requirements were divided into five categories. These categories consisted of (i) direct labour, (ii) inspection, tests and checks, (iii) indirect labour, (iv) non-productive labour and (v) clerks and executives. The working hours necessary for manufacture of a standard teleprinter (BZN model) based on an assumed efficiency of an Indian worker to be 70 per cent of that of an Italian worker, were estimated as follows :—

	BZN Model
	Hours
(*a*) *Direct labour*	
Workshop	72.9
Assembly	46.4
	119.3
(*b*) *Inspection and checks* 25%	29.8
(*c*) *Indirect labour*	47.7
	196.8
(*d*) *Non-productive labour* (17.5%)	34.4
TOTAL	231.2

A provision of 17 per cent of 231.2 hours was estimated for clerical and executive manpower. The number of hours per worker was assumed at 2000 per annum. For the expansion project undertaken in November 1974, the Management assumed the same efficiency and standard hours as laid down in the proposal of the Collaborators except in respect of the executive and clerical staff which was calculated at a higher percentage of 20 as compared to 17 adopted by the Collaborators.

The following table indicates the direct labour actually in position as compared to the direct labour requirements on the basis of targets as per expansion project report and actual production in the two production shops during 1968-69 to 1973-74 :—

	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
(*a*) Target of production of teleprinters as per expansion project . .	5400	7500	8500	8500	8500	8500
(*b*) Manpower required :						
(*i*) Assembly .	125	174	197	197	197	197
(*ii*) Workshop .	197	273	310	310	310	310
	322	447	507	507	507	507
(*c*) Actual production:						
(*i*) Assembly .	5010	5310	4911	4779	6042	6023
(*ii*) Workshop . (*vide* paragraph 5.08)	5578	5504	5255	4781	5998	5599
(*d*) Manpower required for the actual production:						
(*i*) Assembly .	116	123	114*	111*	140	140
(*ii*) Workshop .	203	200	192	174	219	204
	319	323	306	285	359	344
(*e*) Actual manpower :						
(*i*) Assembly .	98	88	88	88	93	97
(*ii*) Workshop .	314	352	351	350	381	383
	412	440	439	438	474	480
(*f*) Manpower in excess of standard :						
(*i*) Assembly .	(—)18	(—)35	(—)26	(—)23	(—)47	(—)43
(*ii*) Workshop .	111	152	159	176	162	179
(*iii*) Overall .	93	117	133	153	115	136

*NOTE:— The shortfall in production during 1970-71 and 1971-72 has been ascribed mainly to labour unrest (*vide* paragraph 5.07).

The Company has undertaken certain new projects (*e.g.*; tool room expansion, testing laboratory, motor, electric type-writers, power cubicles, etc.), which were not covered by the expansion project report. The table below shows the total manpower in position (excluding direct labour and the labour earmarked for projects not covered in the expansion project) as compared to the estimated requirements of indirect manpower envisaged in the expansion project report.

	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
1. Capacity envisaged in the expansion project report .	5400	7500	8500	8500	8500	8500
2. Indirect manpower required on the basis of capacity envisaged in the DPR .	426	593	672	672	672	672
3. Actual production of teleprinter units	5011	5310	4911	4779	6042	6023
4. Manpower required on the basis of DPR for actual production . . .	396	420	388	378	478	476
5. Manpower actually in position . .	624	662	688	684	753	777
6. Excess manpower :						
(*i*) With reference to capacity envisaged .	198	69	16	12	81	105
(*ii*) With reference to actual production .	228	242	300	306	275	301

The following facts emerge from the above two tables :

(i) Direct labour in the Workshop has been in excess as compared to the manpower requirements on the basis of the actual production during 1968-69 to 1973-74.

(ii) Even when compared to the manpower requirements to attain the full capacity, direct labour in the Workshop has been in excess since 1968-69 although the expansion project envisaged full capacity achievement in 1970-71 only.

(iii) Although direct labour in the Assembly Shop has been less than the requirement on the basis of actual production, there has been overall excess of direct labour in the two production shops as compared to the requirement on the basis of actual production during the years 1968-69 to 1973-74.

(iv) Indirect and non-productive labour during all these years has been in excess as compared to the requirements for actual production.

In regard to excess of indirect and non-productive labour, the Ministry stated (March 1976) as follows :

"The difference in manpower with reference to the actual production calculated on the basis of D.P.R. and the manpower actually in position..... is mainly on account of Clerks and Executives. In the Project Report for expansion, the requirement for this category of personnel was assumed as 20% of the remaining staff. Experience has shown that reckoning of requirement of clerks and executives as a percentage of the rest of the staff is not appropriate. In any case, the percentage assumed in the D.P.R. has, in the light of experience, turned out to be an under-estimation. The staff in these categories has, therefore, been sanctioned from time to time in accordance with the actual requirements."

6.02 *Input of direct labour* vis-a-vis *standards fixed by the Management.*—The Company has not fixed its own norms for direct and indirect labour requirements. In 1968-69, however, the Management fixed its own time standards after conducting

time study of the various operations in the Assembly Shop and the Workshop. These time standards laid down the number of direct labour hours required for the manufacture of components for a teleprinter and assembly of a teleprinter. The standards were fixed on the basis of ideal working conditions and 100 per cent efficiency. According to these standards, the manufacture of components for a teleprinter unit and the assembly of a teleprinter unit require 46.721 standard hours and 14.028 standard hours in the Workshop and the Assembly Shop respectively. The following table indicates the actual direct labour input and the standard hours required (excluding machine time in both) for the actual production in the Workshop and the Assembly Shop during 1969-70 to 1973-74 :—

	1969-70	1970-71	1971-72	1972-73	1973-74
1. *Workshop*					
(*a*) Actual manhours taken	456536	445454	404459	507904	447216
(*b*) Standard manhours for actual production .	248493	236544	214272	267557	227559
(*c*) Excess of manhours taken over standard hours . . .	208043	208910	190187	240347	219657
(*d*) Excess manpower calculated on the basis of 2000 hours per worker per annum . . .	104	104	95	120	110
2. *Assembly Shop*					
(*a*) Actual manhours taken	113668	120306	104357	146096	146569
(*b*) Standard manhours for actual production .	61046	64851	56942	81695	79403
(*c*) Excess of manhours taken over standard hours . . .	52622	55455	47415	64401	67166
(*d*) Excess manpower employed on the basis of 2000 hours per worker per annum . . .	26	28	24	32	34

It will be seen that the direct labour in the Assembly Shop as well as the Workshop has been in excess as compared to the direct labour requirements on the basis of the standard hours for the actual production for all these years.

6.03 *Labour efficiency* vis-a-vis *standards fixed by the Management.*—The time standards fixed by the Management in 1968-69 were based on 100 per cent efficiency. While fixing these standards in 1968-69, the Management fixed the standard efficiency at 55 per cent of the time standards. The standard efficiency was raised in February 1971 to 60 per cent of the time standards. The following table indicates the actual labour efficiency during the last five years :—

	1969-70	1970-71	1971-72	1972-73	1973-74
Workshop					
Total hours for jobs for which standards were fixed . .	248493	236544	214272	267557	227559
Actual hours taken . .	456535	445454	404459	507904	447216
Percentage of efficiency . .	54.4	53.2	52.98	52.68	50.8
Assembly Shop					
Total hours for jobs for which standards were fixed . .	61046	64851	56942	81695	79403
Actual hours taken . .	113668	120306	104357	146096	146569
Percentage of efficiency .	53.7	53.8	54.57	55.92	54.2

It will be seen that the percentage of actual efficiency in the Workshop came down from year to year while the percentage of efficiency in the Assembly Shop was improving till 1972-73 but came down in 1973-74. The standard labour efficiency of

55 per cent fixed in 1968-69 and 60 per cent in February 1971 was not achieved in any of the years upto 1973-74 although manufacture of components had been established in the factory since 1967-68. The Management stated in February 1973 that in several shops the Company had exceeded the efficiency of 60 per cent. However, an analysis of figures for 6 years upto 1972-73 revealed that out of 19 shops, only Cover Assembly Shop maintained the efficiency of over 60 per cent for a considerable period in each year and there was progressive decline in the number of months and number of shops which had more than 60 per cent efficiency.

The Ministry stated (February 1976) as follows :—

"The percentage efficiency remained slightly below the standards, because of the following reasons :—

(a) There were severe power restrictions and interruptions of power supply both scheduled and un-scheduled. In case of scheduled interruptions, the power supply was changed over to stand-by generators. Unscheduled and short duration interruptions, however, involved work stoppage and loss of time on warming up etc., affecting efficiency.

(b) With maximisation of use of indigenous raw materials, there were variations in quality of materials from batch to batch, entailing;

(i) rejections and recycling of operations;

(ii) increase in cycle timings for certain batches of materials.

This contributed to loss of efficiency."

7. UTILISATION OF LABOUR AND MACHINES

7.01 ***Labour.***—The following table indicates the extent of utilisation of production labour, idle time, etc. in respect of the Workshop and the Assembly Shop :—

Workshop	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
(*i*) Actual number of hours of presence. . .	352301 (100%)	582070 (100%)	605357 (100%)	619326 (100%)	546815 (100%)	681263 (100%)	624258 (100%)
(*ii*) Number of hours utilised on work .			456536 (75.4%)	445454 (71.9%)	404459 (74%)	507904 (74.6%)	447216 (71.6%)
(*iii*) Setting hours			85869 (14.2%)	93108 (15%)	70237 (12.8%)	91550 (13.4%)	83793 (13.4%)
(*iv*) Eventual hours . .	*341691 (97%)	*566877 (97%)	32910 (5.4%)	48309 (7.8%)	37752 (6.9%)	42248 (6.2%)	51158 (8.2%)
(*v*) Machine time . .			9386 (1.6%)	8995 (1.5%)	9100 (1.7%)	12665 (1.8%)	14043 (2.2%)
(*vi*) Unbooked hours .			5263 (0.8%)	821 (0.2%)	610 (0.1%)	515 (0.1%)	117
(*vii*) Idle time . . .	10610 (3%)	15193 (2.6%)	15393 (2.6%)	22639 (3.6%)	24657 (4.5%)	26381 (3.9%)	27931 (4.4%)

Assembly Shop

(*i*) Actual number of hours of presence	153984 (100%)	197502 (100%)	169044 (100%)	163196 (100%)	130958 (100%)	176954 (100%)	191362 (100%)
(*ii*) Actual hours utilised on work	*140725 (91%)	*182419 (92%)	113668 (67.2%)	120306 (73.7%)	104357 (79.7%)	146096 (82.6%)	146569 (76.6%)
(*iii*) Learning hours . .			905 (0.5%)	1170 (0.7%)	1882 (1.5%)	2907 (1.7%)	3606 (1.9%)
(*iv*) Eventual hours . .			37528 (22.2%)	21262 (13.0%)	14551 (11.1%)	20741 (11.7%)	35746 (18.7%)
(*v*) Unbooked hours .			1073 (0.7%)	892 (0.6%)	303 (0.2%)	40	—
(*vi*) Idle time . . .	13259 (8.6%)	15083 (7.6%)	15870 (9.4%)	19566 (12%)	9865 (7.5%)	7170 (4.0%)	5441 (2.8%)

* Separate figures are not available.

NOTES:— (*i*) Figures in brackets show percentage analysis.

(*ii*) Eventual hours are those spent on additional operations which were not planned for the particular jobs originally, like extra filing etc.

(*iii*) Machine time represents the time the machine was operating automatically without any manual operation.

(*iv*) The term 'Idle time' is used to include periods the operator cannot proceed with the work, among other things, for the reasons of temporary break-down of tools or machines, power failure and sheddings and waiting for setting and inspection.

The Company has not fixed any norms for setting hours. In this connection, the Ministry stated (March 1976) as follows :-

> "As for fixation of norms for setting hours, the Management had attempted this in the past, but because of complexity of the operations involved, it could not be done with accuracy. However, attempts in this direction are continuing."

7.02 *Machines.*—Preparation of statements showing the extent of utilisation of machinery and equipment installed was discontinued from 1967-68 on the ground that they were not serving any useful purpose at that stage, as there was continued addition to capacity and the workers were developing their skills to reach the full capacity production by 1970-71. Although the expansion project was completed in 1969-70, and the production has since stabilised at the appropriate levels related to demand for teleprinters, the Company has not resumed preparation of the machine utilisation statements. In the absence of these statements, it has not been possible to examine in detail the extent of utilisation of machine capacity.

The Ministry stated (February 1976) that the preparation of the machine utilisation statement has since been resumed.

8. DIVERSIFICATION

8.01 In August 1968, the Company sent its Fourth Five Year Plan proposals to the Government of India. In these proposals the Company stated that from the forecasts received from the Posts and Telegraphs Department and other customers it was found that the capacity of 8,500 teleprinters per annum envisaged for expansion by 1970-71 would be more than sufficient to meet the requirements of these customers. It was, therefore, felt that further expansion of capacity for manufacture

of teleprinters was not required during the Fourth Plan period. In order to make the Company completely self-sufficient for all items of components of a teleprinter, it was proposed to take up the manufacture of certain important components like type-heads, key-tops and electrical motors which were not included in the original expansion proposals. In addition, diversification of products to meet the new developments that might come up during the Fourth Plan period was also thought of.

In May 1969, while considering the production programme for 1969-70 and subsequent years of the Fourth Plan period, the Board directed that the Plan proposals as well as aspects of diversification should be reviewed. Accordingly, in June 1969, the Management submitted a note suggesting manufacture of electro-mechanical calculating machines, electric typewriters and power plants for telex and telephone exchanges as possible lines for diversification. The Board generally agreed to the taking up of the manufacture of these items but directed that a market survey be conducted to find out the potential for the first two items *i.e.* electric calculators and electric typewriters.

8.02 In September 1969, the Board approved the revised Fourth Plan proposals which included the taking up of diversification projects for the manufacture of electric typewriters, calculating machines and power cubicles for telex and small telephone exchanges at an estimated capital outlay of Rs. 24.40 lakhs. While reviewing the progress of the Fourth Plan projects in March 1972, the schemes for the manufacture of certain components of teleprinters and that of electric calculators were dropped and in their place manufacture of peripheral equipment for computers was proposed. The estimated cost of the diversification projects was also revised to Rs. 22.85 lakhs. Against the revised estimate of Rs. 22.85 lakhs, the actual expenditure incurred on diversification schemes upto 31st March 1974 was Rs. 7.69 lakhs. The proposals were approved by the Board in March 1972.

8.03 The progress in implementation of the diversification schemes upto 31st March, 1974 was as follows :—

(i) *Electric typewriters.*—The project report prepared (November 1972) by the Company for setting up of a project for the manufacture of electric typewriters developed entirely by the Company with an ultimate capacity of 4,000 typewriters per year at a capital outlay of Rs. 72.88 lakhs (including foreign exchange of Rs. 14.73 lakhs) was approved by Government in September 1973. The commercial production for the first batch of electric typewriters was started in February 1975.

The production level of 4,000 typewriters is expected to be attained by 1978-79.

(ii) *Power cubicles.*—The commercial production of power cubicles was commenced in 1972-73 and the actual production during the last 2 years was as follows :—

	1972-73	1973-74
1. 50 Amps.	7	64
2. 25 Amps.	1	4

(iii) *Peripherals for computers.*—The Management have stated (September 1975) as follows :—

> "The development work on different varieties of peripheral equipment are now in progress in Hindustan Teleprinters Limited and another public sector undertaking. The varieties of peripheral equipment to be taken up for manufacture is under consideration".

8.04 The Board directed in June 1969 that a market survey for assessing the potential demand for electric calculating machines and electric typewriters should be conducted. The

proposal for the manufacture of electric calculators was dropped in March, 1972. In respect of electric typewriters, the Management stated (February 1973) that various Ministries, Departments, established commercial firms, etc., were addressed in 1969 and based on the results of these enquiries, the Company had been registered with the Director General of Technical Development for an annual production of 500 electric typewriters. No other market survey was conducted.

9. CUSTOMER COMPOSITION AND PRICING POLICY

9.01 *Customer composition.*—Teleprinter machine which is used on the terminal of a telegraph circuit for printing messages as on a typewriter, may be installed for point to point working or it may be installed on the telex net work for operation in the same way as the telephone service which provides communication by speech. Telegraph circuits within the country are controlled by the Posts and Telegraphs Department and those with foreign countries are controlled by the Overseas Communication Service. These two departments use teleprinters for public telecommunication services and also provide teleprinter channels on lease to other parties which include Government departments, foreign embassies, newspaper establishments or news agencies, business houses, banks, etc. The Indian Railways, which has its own signalling system, also makes use of the teleprinter service, wherever necessary.

The teleprinter machine which is the terminal equipment does not form part of the circuit and is charged for separately when provided by the Posts and Telegraphs Department and when the Posts and Telegraphs Department does not provide the equipment, the subscribers are permitted to use their own equipment. The Hindustan Teleprinters Ltd., being the only manufacturer of teleprinters and ancillary equipment in South East Asia, all customers in India have to meet their requirements for teleprinters, accessories and spares from the Hindustan Teleprinters Ltd. The following table indicates the customer-wise composition of total sales in terms of standard units of teleprinters :—

Customers	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
A. *Government departments*							
1. Posts & Telegraphs .	2844.200	3988.805	3510.835	2815.515	2771.585	3838.930	3579.650
2. Railways . . .	152.020	113.535	218.650	96.305	35.820	96.310	124.545
3. Defence . . .	210.525	478.745	766.350	989.645	1314.040	1669.205	1619.330
4. Overseas Communication Service . .	13.875	13.875	74.225	114.320	58.020	72.925	0.790
5. Others . . .	95.725	86.470	156.675	100.910	197.770	62.925	314.085
	3316.345	4681.430	4726.735	4116.695	4377.235	5740.295	5638.400
B. *Government undertakings*	38.035	24.040	37.180	68.600	122.245	134.565	85.685
C. Other parties . .	207.030	165.705	218.695	288.560	199.540	164.095	135.610
D. Export . . .	Nil	39.685	96.360	565.730	137.085	126.780	55.425
	3561.410	4910.860	5078.970	5039.585	4836.105	6165.735	5915.120

It may be seen that Government departments and Government undertakings constituted the major customers all these years.

9.02 *Pricing policy.*—The Directors of the Company discussed the guiding principles for price fixation of teleprinters on the 7th May, 1961 and decided that the Company should show profits at least from the 6th year onwards. It was felt that the price of a teleprinter should not be fixed very much higher than the price of an imported machine as such a measure was likely to lead to public criticism. The Board of Directors at a meeting held on 6th June, 1961 reconsidered the decision, and observed that the objective should be not only to show profits as early as possible, but also to build reserves which would enable the business to expand and grow in a healthy manner. The revised decision was reported to be based on a Government directive (not made available to Audit) suggesting that public sector companies should be in a position to pay interest on borrowed capital and contribute to general revenue. On these considerations it was decided to fix the price of a teleprinter at 66 per cent above the f.o.b. price mentioned in the collaboration agreement.

In December 1968, the Bureau of Public Enterprises issued guidelines on pricing policies of public undertakings according to which, in respect of those undertakings which operate in monopolistic or semi-monopolistic conditions, the prices were to be within the landed cost of comparable imported goods and the prices could be so fixed within this ceiling to obtain a reasonable return on the capital invested.

9.03 *Pricing of teleprinters.*—While laying down the objective of pricing policy as to show profits and build up sufficient reserves, the Board did not specify any policy guideline regarding the profit margin on prices of teleprinters or components. The prices of teleprinters were revised from time to time on the basis of escalation in import prices of components till September 1964 and on the basis of estimated cost of production thereafter

In this connection, the Ministry stated (February 1976) as follows :—

> "The Board has been fixing the prices from time to time taking into account the production cost and the resources to be generated for meeting the expansion plans. It was not deemed necessary to fix percentage at every occasion."

The following table indicates the prices fixed from time to time for a teleprinter manufactured by the Company :—

	Price fixed Rs.
From April 1961 to February 1964	4,000
From March 1964 to September 1964	4,250
From October 1964 to March 1965	4,500
From April 1965 to March 1966	5,000
From April 1966 to June 1966	5,600
From July 1966 to March 1968	7,000
From April 1968 to September 1968	6,200
From October 1968 to March 1969	5,900
From April 1969 to August 1970	5,600
From September 1970 to December 1974	5,300
From January 1975 to June 1975	5,850
From July 1975	6,550

The Company did not obtain the ruling prices of the Collaborators or other overseas manufacturers for similar or comparable machines to have a realistic basis for price fixation.

When the price was fixed at Rs. 4,000 per unit, the Company anticipated a profit of Rs. 180 per unit on the basis of estimated

cost of production worked out by the Collaborators. The Company actually incurred a loss of Rs. 5.51 lakhs during the period April 1961 to March 1964 as against an estimated profit of Rs. 3.41 lakhs on actual number of teleprinter units sold. During 1964-65, in spite of two increases in price *i.e.*, from Rs. 4,000 to Rs. 4,250 and to Rs. 4,500 per unit, the Company incurred a loss of Rs. 2.82 lakhs. While the details of the basis for making two increases in price during 1964-65 were not available, the loss incurred indicates that the actual cost of manufacture exceeded even the increased selling prices.

During 1965-66, the Company based its price on the estimated cost of production of Rs. 4,436 per unit worked out by a team of officers of the Posts & Telegraphs Department (April 1965) who also recommended a profit margin of 10 per cent on cost. As against an estimated profit of Rs. 15.23 lakhs, the Company actually made a profit of Rs. 17.88 lakhs, during this period in spite of actual production (2,502 units) falling short of the target (2,700 units). The actual unit cost of production was, however, not worked out by the Company.

Based on the estimated cost of production of Rs. 5,335 per unit for 1966-77 worked out by the Management in March 1966 (as against Rs. 4,910 per unit estimated by the Posts & Telegraphs Team in April 1965) from 1st April, 1966, the Board fixed the price at Rs. 5,600 per unit which included a profit margin of 5 per cent on cost. The price was further increased to Rs. 7,000 per unit from July 1966, taking into account the impact of devaluation. The revised price gave a margin of 10 per cent on estimated cost as against 5 per cent fixed earlier. The Company made a profit of Rs. 43.73 lakhs during this period (before adjusting the devaluation loss of Rs. 91.79 lakhs on revenue account) as against the estimated profit of Rs. 16.41 lakhs, in spite of reduction in turnover from the estimated amount of Rs. 224.58 lakhs to Rs. 213.82 lakhs. Even though the Company did not work out the unit cost of production, it may be seen from the increased profit earned that the estimated

cost of production was much higher than the actual cost resulting in fixation of a high selling price.

For the year 1967-68, the cost of production was estimated at Rs. 5,000 per unit. The decrease in the estimated cost of production was apparently due to expansion of capacity from 2,700 to 3,500 units. Despite decrease in the estimated cost of production there was no change in the selling price since it was held necessary to build reserves to stabilise dividends and for financing further expansion and replacement of assets at higher costs. The profit margin built into the price per unit was 40 per cent of estimated cost. The Company earned a profit of Rs. 122.68 lakhs during 1967-68, which worked out to 64.3 per cent on cost (39.8 per cent on sales).

In March 1968, the Management estimated the cost of producing 4,500 units per annum at Rs. 4,900 per unit. On this basis, the Board fixed the selling price at Rs. 6,200 per unit, which gave 26.5 per cent margin on cost. The price was further reduced to Rs. 5,900 per unit from October 1968. The actual production during 1968-69 was 5,010 units as against 4,500 units anticipated at the time of reduction in price.

The Company made a profit (including other receipts) of Rs. 140.76 lakhs during 1968-69 as against Rs. 122.68 lakhs in the previous year. The increase in profit (Rs. 18.08 lakhs) despite reduction of price (Rs. 50.09 lakhs) was achieved on account of reduction in value of consumption of materials. While the production of teleprinter units increased from 3,504 in 1967-68 to 5,010 in 1968-69 the consumption of materials came down from Rs. 91.60 lakhs in 1967-68 to Rs. 80.07 lakhs in 1968-69. This was mainly due to reduction in the purchase of components. On the basis of the consumption of raw materials and bought out components in the previous year, the value should have gone up by Rs. 20.92 lakhs over the previous year. The Company has thus achieved a reduction of Rs. 32.45 lakhs. The Management have not explained the reasons for steep reduction in value of consumption of materials but the

Directors in their Annual Report for 1968-69 had reported a cost reduction of Rs. 5.70 lakhs on account of import substitution and appreciable cost reduction on account of modifications and changes in components used.

The price was further reduced to Rs. 5,600 per unit from April 1969 on the basis of increased production of 6,500 units and estimated cost of Rs. 4,149 per unit. In spite of reduction in selling price, the Company increased its profit for 1969-70 by Rs. 12.77 lakhs as compared to that of previous year, mainly on account of reduction in value of consumption of materials (Rs. 17.76 lakhs) and reduction in operating expenditure (Rs. 8.99 lakhs). A cost reduction of Rs. 5.77 lakhs only, on account of import substitution was reported in the Directors' Report for the year.

It may thus be seen that the Company had estimated profit margin on teleprinters, which ranged from 5 per cent to 40 per cent on estimated cost. The cost estimates presented to the Board of Directors for the fixation of sales prices were often on the higher side but there was no system of either comparing actuals with estimates or reporting the impact of price on profitability for the period covered by the last ruling price while proposing revision of prices to the Board. Excessive cost estimates resulted in fixation of higher prices from time to time, which brought in profits higher than what was estimated at the beginning of the year.

9.04 *Sale of spares.*—In November 1961, the Company fixed the sale price of maintenance spares at 200 per cent above f.o.b. prices at which spares were to be supplied by the Collaborators as per agreement. The prices so fixed allowed a margin of 88.68 per cent over the landed cost. While the selling prices of unit machines were fixed from time to time with reference to the estimated cost of production, the selling prices of spares were revised on the basis of escalation formula given in the collaboration agreement and increases in customs duty without reference to either

actual or estimated cost of production. Consequent on the devaluation of rupee in June 1966, the Management submitted to the Board that the landed cost of imported spares would increase by 48 per cent only taking into consideration the reduction in customs duty. However, to off set the increase with a view to maintaining the same profit margin as before it was proposed that it would require an increase in existing selling price by 30 per cent only. As regards the locally manufactured spares, only about 10 per cent increase in price was reported to be required to offset increase in cost. Accordingly, the Board approved the fixation of prices of imported items of spares at 30 per cent above the pre-devaluation rates and for indigenously manufactured items at 10 per cent above the pre-devaluation rates. The basis on which Management had worked out the increase was not spelt out.

The prices so fixed have not been revised so far (September 1975), except in respect of bought out items whose prices were revised from 1st April, 1974 by the Managing Director.

With the launching of the expansion project the cost of production was expected to be reduced on account of increase in the capacity of the Workshop. While the prices of unit teleprinters were progressively reduced from April 1968 onwards, the prices of spares have not been revised resulting in increased profit margin.

9.05 *After sales service.*—In June 1961, the Board of Directors desired that a service organisation for maintenance of customers' teleprinters might be set up as early as possible. The Management, therefore, proposed (August 1962) setting up of a service organisation initially at Calcutta, New Delhi, Bombay, Madras, and Calicut and to recover a sum of Rs. 600 per annum per teleprinter and Rs. 150 to 300 p.a. per attachment to cover cost of small spares and routine maintenance from each customer whose teleprinter was to be maintained. These proposals were approved by the Board in November 1962.

The table below shows the number of teleprinter machines and attachments covered by yearly service and maintenance contracts during the last 10 years ending 1973-74 :—

Year	Number of machines serviced (including attachments)
1964-65	52
1965-66	64
1966-67	94
1967-68	136
1968-69	278
1969-70	363
1970-71	474
1971-72	578
1972-73	600
1973-74	817

The rates of maintenance charges fixed on an *ad hoc* basis in November 1962 were revised in September 1975.

The Management have compiled the income and expenditure on machines serviced for the last three years, as detailed below:—

(Rupees in lakhs)

	1971-72	1972-73	1973-74
Income	2.57	2.91	3.48
Expenditure	2.66	3.12	3.31
Deficit	0.09	0.21	
Surplus	..	..	0.17

In September 1961, the Company decided to start classes for imparting training in the maintenance of teleprinters and allied equipment to customers' personnel on payment of a charge

of Rs. 125 per trainee for a course of two months' duration. Short term courses not exceeding one month in duration for training in respect of attachments, etc. were also introduced in February 1964 at a fee of Rs. 65 per trainee. A hostel for trainees was also constructed in 1968-69 at a cost of Rs. 1.24 lakhs. The table below indicates the number of personnel trained during the last six years :—

1968-69	177
1969-70	174
1970-71	152
1971-72	197
1972-73	187
1973-74	174

10. EXPORTS

10.01 According to the agreement with the Collaborators, export of products manufactured by the Company was subject to the following important conditions for a period of ten years from the date of signing of the agreement in August 1960 :—

(i) Exports should be made only after three years from the commencement of production of one of the send-receive teleprinter machines.

(ii) Exports would be permissible to Afghanistan, Combodia, Ceylon, Burma, Laos, Vietnam, Pakistan and Nepal. Exports to countries other than these would be regulated by an agreement mutually arrived at between the two parties.

(iii) Normally export of equipment would be made through the Collaborators' authorised agents in the country of destination except for certain special transactions.

(iv) Royalties payable on export would be at a rate equal to 10 per cent of the c.i.f. price in the country of destination reduced by such amounts as might have been paid or payable as royalties on production.

10.02 On the proposal of the Management to set apart a small number of teleprinter machines for export with a view to proving the export market in certain countries, the Board of Directors decided in September 1965 that the Managing Director should have a full and free hand to export as much as possible. It was also decided that the selling price for export should be equal to the direct cost or less to the extent of the subsidy and in special cases even lesser competitive prices, if necessary, might be quoted with the Board's approval. In regard to export to countries not covered in the agreement, the Board decided that the Collaborators should be addressed and the Government kept informed. During 1968-69, the Company exported teleprinters worth about Rs. 2.38 lakhs to Ceylon. The Collaborators agreed in April 1969 to waive all geographical restrictions on exports and the clause in the agreement was amended in June 1969 to permit exports to all countries.

The table below indicates the value of export sales as budgeted and actually made by the Company for the years from 1968-69 to 1973-74 :—

(Rupees in lakhs)

Year	Budget estimates	Revised estimates	Actuals	Percentage of export to sales
1968-69 . . .	..	No estimate	2.38	0.69
1969-70 . . .	..	No estimate	4.65	1.36
1970-71 . . .	No estimate	24.12	27.75	8.03
1971-72 . . .	19.95	5.34	7.18	2.14
1972-73 . . .	6.45	6.90	7.23	1.72
1973-74 . . .	10.79	3.66	3.39	0.80

It will be seen that the actual exports were below the targets during 1971-72 and 1973-74. The percentage of export to total sales was declining from 1971-72 onwards.

The Company has appointed regular agents (renewable every two years) in Kuwait and Nepal only. These agents are paid 5 per cent commission on c.i.f. or f.o.b. value, as the case may be, of orders secured by them. The agency agreement does not contain a condition that the agents should not also work for the Company's competitors. The Company has also no information as to whether these agents represent other manufacturers of teleprinters in the accredited countries. In countries other than Kuwait and Nepal, whenever necessary, the Company appoints *ad hoc* agents who are paid 5 per cent commission on c.i.f. or f.o.b. value of orders secured by them. The Company is also receiving orders through the Project Equipment Corporation of India Ltd. (a subsidiary of the State Trading Corporation of India Ltd.) which is paid service charges calculated at 2½ per cent of the value of the orders secured by it. The system of tendering quotations to foreign buyers is centralised in the Company. These quotations are decided by the Chairman and Managing Director. Upto April 1974, the Company had been quoting cost (of previous quarter) plus 5 per cent profit in addition to freight, insurance, etc. The profit margin of 5 per cent was raised to 10 per cent from April 1974. Wherever quotations are processed through agents, 5 per cent agency commission is also added. From December 1974, the Company has been quoting at the domestic selling price in addition to freight insurance, etc., and agency commission (wherever payable). The pricing of spares for exports was made in accordance with the guidelines approved by the Managing Director in August 1968 which provided 50 per cent above the f.o.b. Italian price (100 per cent above for items chargeable to duty at 100 per cent) for imported spare parts (for arriving at f.o.b. Italian price 80 per cent escalation is added to Olivetti agreement price) and f.o.b. Italian price for spare parts manufactured indigenously and one and half times the purchase price for bought out spares.

The cost of production of a teleprinter is not worked out by the Management on the basis of actual expenditure (vide paragraph 11.04) and as a result thereof the percentage of profit actually earned on export was much higher than that estimated.

Out of 92 enquiries of the quotation value of Rs. 850 lakhs (approximately) received by the Company during the period 1969-70 to 1973-74, twenty were received through the Project Equipment Corporation of India Ltd., eight through embassies, four through regular selling agents and sixty through *ad hoc* agents appointed for particular tenders. The Company quoted against all the 92 enquiries but orders were received only in respect of 27 offers for a value of Rs. 50.19 lakhs. The Company does not seem to have ascertained the reasons for the rejection of the enquiries except in case of one enquiry where the reasons were stated to be motor governed and non-synchronised, desk mounted unit and no stand, remote control unit built in the machine, maintenance not easy and expensive and non-functioning of the machine during operation.

In addition to the normal export promotion efforts, the Company participated in international exhibitions from time to time in order to promote export of its products. The actual exports, the export promotional expenses and the expenditure on foreign exhibitions for the years 1968-69 to 1973-74 are given below :—

	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
(*a*) Actual exports (Rs. in lakhs) .	2.38	4.65	27.75	7.18	7.23	3.39
(*b*) Export promotion expenses (in rupees) . . .	33,011	21,020	2.31,590	77,830	29,026	76,322
(*c*) Expenditure on foreign exhibitions (in rupees) .	..	3,260	12,854	12,312	5,000	2,000
(*d*) Total expenses .	33,011	24,280	2,44,444	90,142	34,026	78,322
Percentage of (d) to (a)	13.87	5.22	8.79	12.54	4.70	23.10

In this connection, the Ministry stated (March 1976) as follows :—

"Even though the HTL participated in a large number of global tenders, their failure in a large number of cases to secure orders is attributable mainly to the following reasons :—

(i) Users are inclined to buy from the sources with whom they have had dealings in the past. This practice facilitates standardisation of maintenance and inventories.

(ii) The aid giving countries often manage, through tied loans or through influence to promote the sale of their products to the aid receiving countries.

(iii) In recent years a gap has occurred in technology, particularly in the field of electronics, in the teleprinters manufactured by HTL *vis-a-vis* some foreign manufactures. However, HTL had initiated work on the development of new models of teleprinters incorporating the latest techonology. The prototype of some of these models are expected to be ready shortly. With the introduction of these new models, the technology gap which has developed in the recent years will be bridged and HTL will be in a position to pursue its export effort more effectively."

11. COSTING SYSTEM AND COST COMPILATION

11.01 *Costing system.*—The main production departments of the factory are (i) the Workshop, (ii) the Assembly Shop and (iii) the Foundry. During 1968-69, the Company established standards for material input and the manhours required for manufacture of each component and assembly of a teleprinter. The standard labour hours were fixed at 100 per cent efficiency and the standard costs were computed on the basis of standard

hours at 60 per cent efficiency upto 1972-73 and at the actual efficiency of the previous year with effect from 1973-74.

11.02 *Calculation of standard costs.*—Standard costs of components have been worked out thrice so far (March 1975) *i.e.*, in 1968-69, 1970-71 and 1973-74. The following elements have been included in working out the standard costs :—

(i) *Raw materials* : The quantum of raw materials required for each component as intimated by the Planning Department was priced at the average rates prevailing at the time of fixation.

(ii) *Direct labour* : The direct labour cost was based on the standard hours fixed at 100 per cent efficiency suitably adjusted to the efficiency prevailing at the time of fixation of standard cost and at the prevailing rates.

(iii) *Works and administrative overheads* : While works overhead was calculated on the basis of direct labour hours at predetermined rates, the administration overhead was calculated as a percentage of the works overhead based on previous year's actuals.

(iv) *Rejections* : These were computed at 5 per cent of the factory cost till 1973-74 and at 7 per cent of the material cost from 1973-74.

The standard cost of teleprinters of the two major models *i.e.*, T2 BSN and T2 BZN is calculated every year. Until 1971-72, the standard cost was worked out under the following elements :—

(i) Cost of components manufactured.

(ii) Bought out items.

(iii) Assembly cost under (a) direct labour (b) works overhead and (c) administration overhead.

(iv) Selling and distribution cost.

The cost of components manufactured was based on standard costs and that of bought out components on the basis of actuals. Assembly Shop direct labour was calculated on the standard hours at 100 per cent efficiency adjusted to the labour efficiency reported during the preceding year.

The works overhead was calculated as an hourly rate based on the total overhead expenditure and total direct labour hours of the previous year. The percentage of administration overhead was calculated on the basis of previous year's actual expenditure. Selling and distribution cost was also based on previous year's actuals.

From 1972-73 onwards, the standard cost of components manufactured was split into material, direct labour and overhead. For this purpose, the raw material value as per the quantum intimated by the Planning Department priced at the current average rates was deducted from the total standard cost of manufactured components calculated as explained in the preceding paragraph. The balance value was taken as the expenditure on labour and overheads; this was divided by the rates of direct labour and overheads adopted at the time of calculation of standard cost of components to arrive at the actual direct labour hours. The previous year's actual rate of direct labour and overhead was then applied to these hours to find out the cost.

The direct labour and overhead rates applied to cost of manufactured components were underestimated, as the raw materials booked in the standard cost of manufactured components were deducted at the current rates and only the balance was distributed under these heads.

11.03 *Ascertainment of cost.*—The present system consists of the following:—

(a) For the Assembly Shop, a batch work order register is maintained indicating the number of the batch, type of machine and number of machines to be

assembled but no work order is issued and the completion of each batch is not watched. The issue of components is determined as per standards by the Planning Department according to the number of units to be assembled but the actual consumption is not compared with the standards laid down. The Costing Department receives only the issue vouchers from the Stores Department. The issue vouchers are, however, not put to any use except for working out the consumption of bought out components for the purpose of exhibition in annual accounts as per the amendment to Part II of the Schedule VI of the Companies Act, 1956 from the year 1973-74. The Management in their Quarterly Financial Reports indicated the 'actual' cost in respect of T2 BSN teleprinters for each quarter and in respect of T2 BZN teleprinter for the quarter ending 30th September of each year. The components consumed are evaluated on the basis of the standard quantity and standard costs and the other elements of cost *viz.*, labour, overhead, etc., are calculated on the basis of the actual labour efficiency during that period. Such costs are not compiled for other models of teleprinters. This cost cannot be considered as actual as it is not reconciled with the financial accounts and is not calculated with reference to the actual expenditure. The Management have agreed (February 1976) to make reconciliation of cost accounts with financial accounts in future.

(b) In the case of the Workshop, the Planning Department issues the work order for each type of component and a copy of it is received in the Costing Department also. The raw material issues are priced by the Costing Department, on the basis of issue vouchers at the current weighted average rate and posted in the stores ledger as well as work

orders. Similarly, the labour hours utilised on the work orders as intimated by the Industrial Engineering Department are also valued and posted in the work orders at the rates calculated on the basis of previous year's actuals plus allowance for increase. The works overhead are calculated on the basis of pre-determined rate on the actual direct labour hours and the administrative overhead at a pre-determined percentage on the works overhead. The pre-determined rates are based on the previous year's actuals. The actual unit cost of components produced is, however, not worked out but the production in each work order was valued at standard rates upto 1973-74 in order to arrive at the total variance between the factory overhead applied and actual factory overhead expenditure. The difference arrived at was, however, not analysed for usage, volume and price variance. From 1974-75 onwards even the variance is not worked out. Thus the work order is not put to any use except for purpose of valuation of work in progress at the end of the year.

The Ministry stated (February 1976) that "a new system of compilation has since been introduced and important variances will now be analysed."

(c) In the case of Foundry, cost records are not maintained showing the labour hours utilised. Standard rates of input and output in respect of the Foundry have been fixed but the actuals are not compared with the standards.

11.04 *Actual cost.*—The actual cost of manufactured components is not ascertained and in the case of teleprinters the actual cost is worked out at the end of every quarter in respect of T2/BSN Model and

for one quarter in a year in respect of T2/BZN Model, on the basis of the revision in average rates of raw materials, labour and overheads during the quarter. The cost of other models and ancillary units are not being worked out.

The basis for revision in average rates of raw material and that of labour is restricted to the relevant quarter and is not, however, reconciled with the financial accounts.

11.05 The following defects have been noticed in the maintenance of work orders :—

(i) Even though a register of work orders has been maintained both in the Planning and Costing Departments, the pending work orders are not ascertained periodically. The closure of work orders is intimated by the Planning Department and on this basis the Costing Department is reported to be removing the closed work orders from the register. A test check of about 800 work orders of 1972-73 and 1,000 work orders of 1973-74 showed that work orders which were actually completed and delivered by 31st March were shown as work-in-progress pending closure of work order by Planning Department, with the result that 163 work orders in 1972-73 and 85 work orders in 1973-74, which had actually been closed, were shown as pending workorders, as at the end of financial years and consequently the value of works-in-progress stood inflated.

(ii) The issues of materials were found to be in excess of standards in several cases, and no investigation was conducted in such cases.

(iii) Delivery of finished components was not noted completely and there were variations between the quantity shown as completed by the Planning Department and the quantity noted as delivered in

the work order. Even the quantities shown as completed as per Planning Department were much less than the quantities planned for the work order, in spite of raw material issues having been made with reference to the standard quantities. The discrepancies were not investigated to find out reasons for excess consumption of raw materials and short deliveries of finished components.

(iv) Transfer of materials between work orders was not intimated to the Costing Department. Hence in some work orders only labour utilised was booked thereby showing an incorrect cost under the work orders. In the case of parts for group components, some of the quantities completed under work orders were stated to have been utilised directly for the group components without details thereof being noted in the relevant work orders. These cases were not reviewed in the Costing Department to ensure utilisation of raw material issues and labour and due receipt of manufactured components either in stores or for use in group components.

In this connection, the Ministry stated (February 1976) as follows :—

"..... that some variation between the quantities of partial deliveries as per Planning and Costing in respect of some work orders arise due to the existence of more than one work order for the same symbol. To overcome these defects a centralised work order cell has been formed with employees of Planning and Costing Sections to record the information on work orders centrally in a co-ordinated manner. With this arrangement, the defects pointed out are expected to be eliminated."

11.06 The following table indicates the standard cost of sale and the cost of sale of T2 BSN Model of teleprinter as worked out by the Company [*vide* paragraph 11.03 (a)] at the end of each year:—

(In rupees per unit)

	1968-69		1969-70		1970-71		1971-72		1972-73		1973-74	
	Std.	Actual	Std.	Actual	Std.	Actual	Std.	Actual	Std.	Actual	Std.	Actual
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Components:												
1. *Manufactured*												
(*a*) Material	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	338	331	377	436
(*b*) Labour	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	277	269	264	323
(*c*) Factory overhead	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	2079	1976	1977	2115
(*d*) Admn. overhead	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	728	771	791	888
TOTAL	2821	2847	2927	2958	3139	3703	3080	3679	3422	3347	3409	3762
II. *Bought out items*												
(*a*) Indigenous	304	300	220	237	209	209	271	276	273	312	287	303
(*b*) Imported	726	741	542	561	205	205	202	195	179	228	229	230
TOTAL	1030	1041	762	798	414	414	473	471	452	540	516	533
Total of components	3851	3888	3689	3756	3553	4117	3553	4150	3874	3887	3925	4295

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
III. *Assembly*												
(*a*) Direct wages	50	54	50	52	53	61	53	59	59	63	70	87
(*b*) Works overhead . . .	390	414	382	492	327	402	327	361	354	302	316	370
(*c*) Admn. overhead . . .	125	135	134	161	124	145	124	138	124	118	126	155
TOTAL	565	603	566	705	504	608	504	558	537	483	512	612
IV. *Selling & distribution*												
(*a*) Selling overhead . . .	113	118	111	171	220	246	220	191	190	198	210	215
(*b*) Instruction manual . . .	7	7	7	7	7	7	7	7	7	7	11	11
(*c*) Packing	100	100	100	100	100	100	100	110	100	110	100	100
(*d*) Royalty	43	33	33	32								
TOTAL	263	258	251	310	327	353	327	308	297	315	321	326
GRAND TOTAL . . .	4679	4749	4506	4771	4384	5078	4384	5016	4708	4685	4758	5233

The Management do not have a system of cost analysis to find out reasons for variations and for cost control measures. The standard costing system followed in the Company since 1968-69 has not been put to effective use.

The actual cost of production of a standard teleprinter BZN Model, worked out by Audit and the standard cost adopted by the Management since 1971-72 are given below :—

(Figures in rupees)

	1971-72	1972-73	1973-74
Standard cost			
(*i*) Components	2594	3024	2994
(*ii*) Assembly			
Direct labour	42	47	55
Factory overhead	255	281	251
(*iii*) Administrative overhead	97	98	100
	2988	3450	3400
Actual cost			
(*i*) Components	2789	2905	3675
(*ii*) Assembly			
Direct labour	47	55	72
Factory overhead	292	277	342
(*iii*) Administrative overhead	130	114	137
	3258	3351	4226

12. WORKING RESULTS AND PROFITABILITY

12.01 The working results of the Company for the last eight years ending 31st March, 1974 are tabulated below :—

(Rupees in lakhs)

	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(*a*) Sales	213.82	308.05	347.36	341.95	345.49	335.23	422.14	425.52
(*b*) Cost of sales	261.88	185.37	206.60	188.42	219.25	198.83	235.44	298.64
(*c*) Profit/loss (—) before tax	(—)48.06	122.68	140.76	153.53	126.24	136.40	186.70	126.88
(*d*) Provision for taxation	..	32.00	78.50	87.00	72.46	82.50	112.50	71.00
(*e*) Profit/loss (—) after tax	(—)48.06	90.68	62.26	66.53	53.78	53.90	74.20	55.88
(*f*) Capital employed	286.47	365.57	361.68	397.50	432.98	475.42	512.83	539.32
Percentage of :—								
(*i*) Cost of sales to sales	122.5	60.2	59.5	55.1	63.5	59.3	55.8	70.2
(*ii*) Profit before tax to sales	..	39.8	40.5	44.9	36.5	40.7	44.2	29.8
(*iii*) Profit before tax to capital employed	..	33.6	38.9	38.6	29.2	28.7	36.4	23.5
(*iv*) Sales to capital employed	74.6	84.3	96.0	86.0	79.8	70.5	82.3	78.9

The loss during 1966-67 was attributed to the debit of Rs. 84.51 lakhs being increase in the liability for imported materials consequent upon devaluation of the rupee. Of the increase of Rs. 84.51 lakhs on materials, about Rs. 71 lakhs was estimated increase on materials already consumed or sold prior to 1st April, 1966. The decline of profit in 1970-71 was mainly on account of the following factors :—

(a) Fall in production from 5,310 units in 1969-70 to 4,911 units in 1970-71 due to labour unrest resulting in stoppage of production for a period of two weeks during July-August 1970.

(b) Increase in salaries and other benefits (Rs. 12.79 lakhs).

(c) Increase in the cost of raw materials, components and stores from Rs. 1,356 per unit in 1969-70 to Rs. 1,603 per unit in 1970-71.

(d) Increase in selling and distribution expenses on account of export promotion (Rs. 4.81 lakhs).

(e) Reduction of Rs. 300 in the price of a teleprinter unit with effect from 1st September, 1970 which resulted in the reduction of profit to the extent of Rs. 9.88 lakhs.

During 1971-72, despite reduction in sales the profit increased, though not to the level of 1969-70. This was mainly on account of reduction in the cost of raw materials and components from Rs. 1,603 per unit in 1970-71 to Rs. 1,443 per unit in 1971-72. During 1972-73 the increase in profit was mainly due to increased sales, increased interest earnings (Rs. 5.7 lakhs) and decrease in operating and other expenses (Rs. 2.23 lakhs). The decrease in profit during 1973-74 has been attributed mainly to increase in the cost of labour and materials and partly to changes in the method of valuation of work-in-progress and tools manufactured.

12.02 *Dividend.*—The Company has been paying dividend since 1965-66. The table below indicates the rates and the amounts of dividend paid by the Company from 1965-66 to 1973-74 :—

Year	Rate of dividend	Amount of dividend (Rs. in lakhs)
1965-66	2%	1.64
1966-67	2%	1.64
1967-68	10%	8.20
1968-69	11%	9.02
1969-70	12%	9.84
1970-71	12½%	10.25
1971-72	12½%	10.25
1972-73	12½%	10.25
1973-74	12%	13.50
TOTAL		74.59

In addition to the dividend amounting to Rs. 74.59 lakhs paid up to the end of 1973-74, the Company has also allotted to Government, bonus shares of the value of Rs. 41 lakhs by capitalisation of its general reserves during 1973-74.

12.03 *Cost, profitability and efficiency analysis*

A. **Cost of under-utilisation of installed capacity**

It may be seen from paragraphs 5.07 and 5.08 that the installed capacities of the Workshop and the Assembly Shop have not been utilised fully. The table below gives an indication of

the extent of the cost of under-utilisation of capactities during the four years ending 1973-74 :—

	1970-71	1971-72	1972-73	1973-74
1. Total fixed overheads (Rs. in lakhs)	66.38	67.02	69.32	73.04
2. Allocation of fixed overheads (Rs. in lakhs)				
(*a*) Workshop . . .	54.96	55.60	58.60	60.97
(*b*) Assembly Shop . .	11.42	11.42	10.72	12.07
3. Percentage of under-utilisation				
(*a*) Workshop . . .	38.18	43.76	29.44	34.13
(*b*) Assembly Shop . .	42.22	43.78	28.92	29.14
4. Proportionate cost of under-utilisation (Rs. in lakhs)				
(*a*) Workshop . . .	20.98	24.33	17.25	20.81
(*b*) Assembly Shop . .	4.82	5.00	3.10	3.52
(*c*) Total . . .	25.80	29.33	20.35	24.33

The cost of under-utilisation of installed capacity was about Rs. 25.80 lakhs, Rs. 29.33 lakhs, Rs. 20.35 lakhs and Rs. 24.33 lakhs during 1970-71, 1971-72, 1972-73 and 1973-74 respectively. The under-utilisation of capacity has correspondingly resulted in increased cost of production. The Company is of the view that the existing capacity cannot be exploited fully because the demand for teleprinters in the country is less than the rated capacity of the factory.

In a situation of limited domestic demand and consequent under-utilisation of installed capacity of the factory, increased export should have been one of the alternatives to use the available facilities. However, the export effort of the Company did not meet with success for the reasons mentioned in paragraph 10.02 and the factory more or less remained the captive

unit of the user departments of the Government of India, who could not get the benefits of the lower cost which might have arisen with fuller utilisation of the available facilities.

B. Profit on teleprinters vis-a-vis profit on spares

The Management have not worked out the actual cost of production of components and teleprinters and consequently the profit made on sale of teleprinters and that on sale of spares, could not be ascertained. On the basis of distribution of expenditure under the various cost centres made by the Management for calculating the under/over absorption of overheads to make adjustments in value of closing stock of components and work-in-progress at the end of each year, an attempt has been made in audit to work out the actual cost of production of teleprinters and spares and also the profits thereon for the period from 1971-72 to 1973-74 for which complete details were available.

The details of cost analysis made in audit are given below:—

	1971-72	1972-73	1973-74
1. *Workshop cost*			
(*a*) Cost of finished output (Rs. in lakhs)	124.31	154.42	191.40
(*b*) Production in terms of unit teleprinters (*vide* paragraph 5.08)	4781	5998	5599
(*c*) *Cost per unit* (*Rs.*)			
(*i*) Raw material	295	326	311
(*ii*) Direct labour	184	174	274
(*iii*) Factory overhead	1469	1472	2028
(*iv*) Administrative overhead	652	603	805
	2600	2575	3418
(*d*) Cost of components consumed for production/sales (Rs. in lakhs)	163.40	205.91	249.39
(*e*) Cost of components consumed for production (Rs. in lakhs)	133.29	175.49	221.37
(*f*) Number of units produced	4779	6042	6023
(*g*) Cost of components per unit (Rs.)	2789	2905	3675

	1971-72	1972-73	1973-74
2. *Assembly Shop*			
(*a*) Cost of production (Rs. in lakhs) .	22.42	26.95	33.16
(*b*) Number of units assembled . .	4779	6042	6023
(*c*) *Assembly cost per unit* (*Rs.*)			
(*i*) Direct labour . . .	47	55	72
(*ii*) Factory overhead . .	292	277	342
(*iii*) Administrative overhead .	130	114	137
	469	446	551
3. Total cost of production per unit .	3258	3351	4226
4. Cost of production (Rs. in lakhs) .	154.90	201.90	253.82
5. Sales overhead (Rs. in lakhs) . .	11.03	14.85	12.20
6. Cost of sales of teleprinter (Rs. in lakhs) (4+5)	165.93	216.75	266.02
7. Number of units sold . . .	4836	6166	5915
8. Cost per unit sold (Rs.) . . .	3431	3515	4497
9. Total sales of teleprinters (Rs. in lakhs)	262.51	337.48	321.12
10. Value realised per unit . . .	5428	5473	5429
11. Total profit on teleprinters (Rs. in lakhs)	96.58	120.73	55.10
12. Profit per unit sold (Rs.) . . .	1997	1958	932
13. Percentage of profit on cost . .	58.21	55.70	20.71
14. Cost of components sold as spares/ accessories [1(d)—1(e)] . . .	30.11	30.42	28.02
15. Sales overhead	3.05	3.67	3.18
16. Cost of components sold as spares/ accessories (14+15)	33.16	34.09	31.20
17. Sale value of spares/accessories (Rs. in lakhs)	72.72	83.42	83.75
18. Profit on sale (Rs. in lakhs) . .	39.56	49.33	52.55
19. Percentage of profit on cost . .	119.30	144.70	168.43
20. Total profit (Rs. in lakhs) . . .	136.40	186.70	126.88

	1971-72	1972-73	1973-74
21. Percentage of profit on teleprinters to total profit	70.8	64.7	43.4
22. Percentage of profit on spares to total profit	29.0	26.4	41.4

NOTES.—1. Cost of finished output [S.No. 1(a)] does not tally with the figures of value of components produced in Workshop shown in paragraph 5.10 as the former figures are based on actual cost and the latter figures represent the value of standard cost.

2. The figures of cost of sales of teleprinters (S. No. 6) and cost of spares/accessories (S.No. 14) do not tally with the figures of cost of sales shown in paragraph 12.01 due to the fact that the former figures do not include incidence of expenditure relating to previous years adjustments, provisions for doubtful claims, stock and cost pertaining to other items of production like power pack, regenerative repeaters and stamp cancelling machines.

The pattern of profitability of the Company has been shifting from teleprinters to spares. The total profit on teleprinters which had increased from Rs. 96.58 lakhs during 1971-72 to Rs. 120.73 lakhs during 1972-73 had slumped to Rs. 55.10 lakhs during 1973-74 and the percentage of profit on cost also had shown a downward trend during 1973-74. Compared to this downward trend of profitability on teleprinters, the profitability on spares has been showing an increasing trend year after year. While the Company was reducing the sale price of teleprinters from April 1968 to September 1970, the prices of spares were not revised till March 1974 and were kept constant with reference to the notional landed cost of imported spares. It was seen that even in respect of bought out components, the price was fixed without relation to the cost of procurement.

An analysis of sale of spares during 1973-74 showed that the Company had made a profit of about Rs. 8.03 lakhs on bought out items costing Rs. 2.90 lakhs sold as spares. This resulted in a profit of about 277 per cent of cost.

It may be seen that while the production in Workshop had reduced during 1973-74, the cost of finished output had gone up appreciably resulting in increased cost per unit. Even though

the raw material cost per unit which had increased from Rs. 295 to Rs. 326 had come down to Rs. 311 in 1973-74 due to various cost reduction measures introduced by the Management (*vide* paragraph 5.13) the direct labour and overheads had gone up. The actual reduction in cost per unit on accout of these cost reduction measures has not been quantified but in the Directors Report for 1972-73 and 1973-74 it has been stated that there had been increases in prices of raw material components, etc. The cost of components per assembled unit has been rising year after year in spite of reduced consumption of raw materials per unit. In this connection, it may be stated that the consumption of raw materials and components is derived from stock and purchases and not based upon the actual issues.

The assembly cost which had declined during 1972-73 registered a steep rise during 1973-74 due to all round increase under all the heads and reduced production.

C. **Efficiency analysis**

It may be seen from paragraph 9.03 that the Company had reduced the price of teleprinters from time to time. The position indicated in paragraph 12.01 would indicate that the Company maintained, more or less, the same rate of profit to sales excepting in the year 1973-74. From paragraph 9.03 it would be seen that the cost estimates prepared for fixation of sales prices were often on the higher side, and this resulted in profits being higher than what was estimated. The Management have not made any analysis to find out the effect on profits of the larger volume of production, imports substitution and indigenisation of components, reduction in cost resulting from value analysis, increase in wages and cost of materials, etc. Such an analysis would have disclosed how far the efficiency of operations contributed to the profitability of the Company.

13. PURCHASE PROCEDURE AND INVENTORY CONTROL

13.01 In December 1960, the Board of Directors delegated full powers to the Managing Director to incur expenditure on

purchase of raw materials, components, etc. on the basis of the production programmes approved by the Board and subject to budget provision. The Managing Director was also given powers of sub-delegation. The Managing Director issued the following orders in March 1966 in respect of sanction of purchases other than repeat orders and cash purchases :—

Managing Director	Full powers for each purchase involving above Rs. 10,000 by inviting open tenders and processing the case through Stores Purchase Committee consisting of Managing Director, Administrative Manager, Technical Manager and Financial & Accounting Manager.
Purchase Officer	Rs. 10,000 in each case provided (a) limited tenders were invited and lowest accepted or (b) the order was placed against DGS&D rate contract (c) the article was of a proprietary nature. Rs. 1,000 in other cases.
Asstt. Purchase Officer	Rs. 1,000 in each case provided (a) limited tenders were invited and lowest accepted or (b) the order was placed against Director General, Supplies and Disposal rate contract or (c) the article was of a proprietary nature. Rs. 100 in other cases.

These delegations were revised in June 1966 providing for the Purchase Officer and Assistant Purchase Officer accepting tenders other than the lowest subject to recording of reasons and approval by Technical Manager for each purchase up to Rs. 10,000 and by the Purchase Officer for each purchase up to Rs. 1,000. In 1969-70 the Managing Director decided that open tenders need be called for only in respect of purchases above Rs. 50,000.

In December 1973, two Stores Purchase Committees were constituted, one to process all purchases of the value of Rs. 1 lakh and above and another to process purchases of the value of Rs. 10,000 and above up to Rs. 1 lakh.

13.02 The following table indicates the value of inventory (a) in lakhs of rupees and (b) in terms of number of months' consumption for the last six years ended 1973-74 :—

	1968-69		1969-70		1970-71		1971-72		1972-73		1973-74	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
(*i*) Raw materials .	24.19	28.0	16.79	17.5	25.91	19.1	19.70	17.0	16.22	9.5	12.21	8.5
(*ii*) Components and accessories	42.30	4.3	41.68	4.2	45.70	4.5	52.30	4.2	42.44	2.7	47.62	2.8
(*iii*) General stores .	6.71	6.0	6.62	4.5	7.39	4.3	8.18	5.8	7.8	3.6	7.93	3.1
(*iv*) Finished goods (including in exhibition)	1.59	..	1.12	..	1.30	..	2.11	..	2.94	..	5.41	..
(*v*) Works-in-progress .	22.40	..	26.88	..	21.95	..	19.80	..	32.87	..	13.07	..
(*vi*) Others .	17.57	..	38.20	..	17.69	..	15.61	..	13.47	..	15.61	..

The stock of raw materials on hand as on 31st March, 1971 registered a steep increase because of large receipt of materials on deferred credit account. Work-in-progress at the end of 1973-74 represented 0.5 month's value of production at cost (including depreciation) as against 1.6 months' value at the end of 1972-73 and 1.2 months' value at the end of 1971-72 as well as 1970-71.

13.03 (a) Minimum, maximum and ordering levels have been fixed for all general stores items, indigenous raw materials and 213 out of 3,635 items of components and accessories up to 31st March, 1974. Out of the stock of raw materials, components and accessories and general stores valued at Rs. 67.76 lakhs as on 31st March, 1974, the items for which above levels have been fixed worked out to only Rs. 26.16 lakhs. The Management stated (February 1973) that in respect of other items, levels had not been fixed as they (1) belonged to less frequently handled items, (2) were imported items obtained for annual requirements, and (3) were used for specific assemblies and custom built equipment

(b) *Physical verification of inventories.*—Up to September 1973, a system of perpetual physical verification of stores, was in vogue according to which items of stores were classified into A, B and C categories; category 'A' items were required to be verified twice a year, category 'B' items once a year and category 'C' items once in two years. In September 1973, however, this system of physical verification was prescribed formally. The

verification was completed during the last four years to the extent indicated below :—

Category	1970-71		1971-72		1972-73		1973-74	
	Total number of items	Number of items verified	Total number of items	Number of items verified	Total number of items	Number of items verified	Total number of items	Number of items verified
A	365	264	335	295	316	308	230	230
B.	699	315	601	547	630	453	506	500
C	4695	871	4692	1745	5521	1278	5113	2041

(c) Prior to the issue of instructions for physical verification of stocks in September 1973, the differences noticed between the physical balances and book balances were adjusted then and there. There was no system in vogue then to investigate these differences and report to higher authorities for regularisation. These deficiencies were rectified, however, by the issue of instructions on physical verification in September 1973.

14. INVESTMENT OF SURPLUS FUNDS

14.01 The Company was investing its surplus funds in call deposits and term deposits carrying interest ranging from 1.25 to 5.5 per cent per annum when in August 1969 it approached Government for grant of additional foreign exchange so as to enable the Company to utilise at least a portion of surplus funds for premature repayment of the Italian deferred credit. On a suggestion made by Government (September 1969) that it would be preferable to invest the surplus funds at higher rate of interest than to utilise them for premature repayment of the foreign credit, the Board desired (September 1969) that the Management should consider investment in tax-free Government securities or in similar suitable securities.

14.02 In January 1971, a beginning was made in investing a portion of the funds for periods exceeding one year. The

Management informed Audit (May 1972) that until the profitability position of the Company stabilised, investments in short-term deposits were continued of necessity and from 1969-70 onwards, deposits were made for longer durations. The following table indicates the amounts of interest earned by the Company on term deposits during the last 9 years ending 31st March 1974 :—

Year	Interest earned on term-deposists (Rs. in lakhs)
1965-66	0.33
1966-67	0.23
1967-68	0.54
1968-69	1.28
1969-70	3.32
1970-71	2.94
1971-72	4.16
1972-73	10.50
1973-74	11.55

It will be seen from the above table that the total amount of interest earned increased considerably from the year 1969-70 when the Company started investing its surplus funds for periods of longer duration. Prior to 1969-70, the duration of deposits and the rate of interest earned thereon ranged up to one year and 5.5 per cent per annum respectively; during the five years from 1969-70 to 1973-74, the duration of deposits ranged from 15 days to 5 years and 97 days and the rate of interest earned thereon ranged from 1.25 per cent to 7.25 per cent per annum. In February 1973 the Management stated :

"..... We cannot invest our surplus funds for a duration of more than two or three years in view of the Electric Typewriters Project and other Diversification projects

and also our fifth plan requirements which we propose to finance from our own resources". The Management have not maintained an investment register indicating details of the deposits made and the basis on which the investment decisions were taken from time to time. In the absence of such a register and considering the volume of deposits made which ranged from Rs. 15 lakhs to Rs. 190 lakhs during the period from 1965-66 to 1973-74 it was not possible to ascertain whether proper planning of cash investments was made to ensure maximum return on internal resources.

The Ministry stated (February 1976) that an investment register has since been introduced.

15. ACCOUNTING SYSTEM AND INTERNAL AUDIT

15.01 The Company has not prepared an Accounting Manual. Factory instructions, dealing with various matters of accounting, are issued by the Management as and when needed. The Ministry stated (February 1976) that "An officer has already been entrusted with the work of codifying the factory instructions into a Manual".

15.02 *Internal audit* : An internal audit unit has been functioning under the control of Financial and Accounting Manager since February 1966. The unit was conducting test check of certain records as ordered by the Financial and Accounting Manager. The duties of this unit were not spelt out till January 1972 when a Manual was drawn up. This Manual contains provision for (a) continuous audit check of the accounts records, (b) special investigation and reviews and (c) special assignments entrusted by the Management. The present scope of internal audit does not cover the check of the general ledger or an appraisal of the efficiency of performance of the Company in various operations.

16. ORGANISATIONAL SETUP

16.01 The Chief Executive of the Company is the Chairman and Managing Director who is assisted by three staff officers, *viz.*, the Technical Manager, the Financial and Accounting Manager and the Administrative Manager. The departmental heads functioning under these officers are indicated against each :

1. Technical Manager .	(*a*) Superintendent, Workshop
	(*b*) Industrial Engineer
	(*c*) Senior Engineer
	(*d*) Tool Engineer
	(*e*) Planning Engineer
	(*f*) Superintendent, Assembly Shop
	(*g*) Plant Engineer
2. Financial and Accounting Manager	(*a*) Secretary
	(*b*) Chief Accountant
	(*c*) Internal Auditor
3. Administrative Manager .	(*a*) Personnel Manager
	(*b*) Sales Manager
	(*c*) Materials Manager
	(*c*) Civil Engineer

16.02 In terms of the Articles of Association of the Company, the Chairman, Managing Director, other full time Directors and Directors representing Government of India are appointed by the President. Non-official Directors are appointed by the President in consultation with the Chairman. Up to 31st December, 1971 the office of the Chairman and that of Managaing Director were held by different persons. From 1st January 1972, the Managing Director of the Company has also been appointed Chairman of the Board.

16.03 In regard to the Financial Manager, Article 77 of the Articles of Association states as follows :—

> "The Board shall have powers to select the Financial Adviser(s)/Financial Manager(s) of the Company and appoint him/them for such terms and at such remuneration as it may think fit and may remove him/them from office and appoint another/others in his/their place(s). While the powers for final selection will vest with the Board, assistance of Government of India (Ministry of Finance) may be obtained in selecting the Financial Adviser(s)/ Financial Manager(s)".

16.04 The Board of Directors are vested with full powers to carry on the business of the Company except in respect of matters specified in Article 76 of the Articles of Association for which prior approval of Central Government should be obtained. The Chairman of the Board of Directors has also powers to reserve for the decision of the Central Government any proposals/decision brought up before the Board. The creation and appointment to the posts of General Manager(s) of the Constituent Unit(s) is to be made by the President in consultation with the Board (Article 77A).

16.05 The Board of Directors delegated to the Managing Director certain powers in 1960 to carry on the day to day administration. Subsequent additions to these items were made as and when necessity arose. The Managing Director has also been given powers to sub-delegate his powers to other heads of divisions. The Directors have not so far specified the matters requiring the concurrence of the Financial and Accounting Manager. As a general practice, however, proposals involving financial implications are examined by the Financial and Accounting Manager.

16.06 In pursuance of the recommendations made by the Committee on Public Undertakings, Government circulated in

May 1969 a note, *inter alia,* indicating the main functions and responsibilities of the Financial Adviser asking the public sector undertakings to adopt the same *in toto* or with such alterations/adaptations as might be necessary. The organisational setup of the Company as it existed in January 1974 is indicated in Annexure 'C'.

(R. P. RANGA)
Chairman, Audit Board and
Ex-officio *Additional Deputy*
Comptroller and Auditor
General (Commercial).

NEW DELHI,

The 12-5-1976

Countersigned

(A. BAKSI)
Comptroller and Auditor General of India.

NEW DELHI.

The 12-5-1976

ANNEXURE 'A'

(*Referred to in paragraph* 5.02)

Statement showing the types of teleprinters envisaged in the Collaboration Agreement of August 1960

Description of machines	Code name
1. Teleprinters—Send-receive page Model	T2 BSN
2. Teleprinters—Send receive tape Model	T2 BZN
3. Teleprinters—Receive only page Model	T2 SR
4. Teleprinters—Receive only tape Model	T2 ZR
5. Teleprinters—Offline page Model	T2 SL
6. Teleprinters—Offline tape Model	T2 ZL
7. Printing reperforator—Send receive type	T2 PN
8. Printing reperforator—Receive only type	T2 PR
9. Printing reperforator—Offline type	T2 PL
10. Teleprinter reperforator attachment—Send receive Model	T2 PF
11. Teleprinter transmitted attachment—Send receive Model	T2 TF
12. Independent auto-matic transmitter—Receive only	T2 TA

ANNEXURE 'B'

(*Referred to in paragraph* 5.13)

(Statement showing the value of cost reduction based on annual production for 1973-74 excluding spares requirements)

Cost reduction measures	Nature of item or improvement	Value of cost reduction/ savings per piece	Total cost reduction
1. *Vlaue Engineering:*			
		Rs.	Rs.
(*a*)	Replacement of Answer Back Drum with simpler nylon moulded components	10.18	36,780
(*b*)	Modified Ribbon Jumper with moulded components working on the simpler metal guide	22.03	80,432
(*c*)	Reed Vibrator	0.34	1,443
(*d*)	Nylon Roller in place of Bronze Roller	2.19	6,754
(*e*)	Saving on Milling of K 189	1.80	5,400
(*f*)	Saving of extra Cam Lobe in S.N. Send Cams	12.84	38,520
(*g*)	Modification of Armature Pivots	19.95	74,952
(*h*)	GG 129 modified to GK 294 with Nylon Mould Worm gear eliminating Milling Operation	5.38	20,213
(*i*)	Replacement of cast iron motor end plates by Press Metal Components eliminating long grinding operations.	17.12	72,640
(*j*)	Modification of the specification of run-out key pad	1.85	7,133
(*k*)	Modification of GL 343 to metal insert moulded part	1.69	28,020
(*l*)	Elimination of fins from fly wheel	3.50	14,850
(*m*)	Redesigning of the method of producing the feed wheel in printing reperforators to achieve material saving and eliminating rejection	6.71	1,342

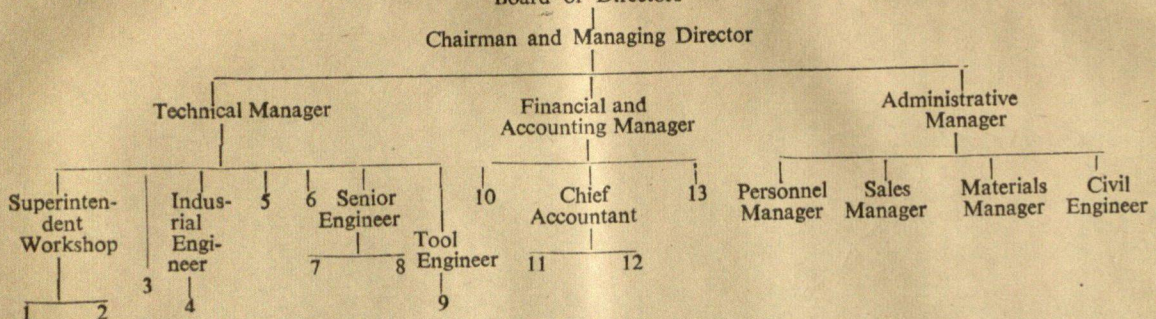
Cost reduction measures	Nature of item or improvement	Value of cost reduction/ savings per piece	Total cost reduction
		Rs.	Rs.
2. *Process changes:*			
	(*a*) Nickel Plating of many components substituted by blackening process resulting in saving of time and Nickel . . .	..	90,000
	(*b*) 237 tools were converted to Die set tools and some die set tools as multiple blanking, compound and progressive tools resulting in saving of time of the order of 900 std. hours working out to a saving of the total time in the Press shop by about 10%	..	73,804
3. *Operational improvements:*			
	(*a*) Replacement of costly milling and grooving operations by drilling with a suitably designed jig	..	31,000
	(*b*) Introduction of multi-spindle drilling for certain high volume items and saving in operation time	..	2,453
	(*c*)	..	..
	(*d*) Introduction of automatic strip feeding for bulk production of relay laminations	..	..
	(*e*) Introduction of group working in the motor, gear and punch block sections .	..	..
	(*f*) Analysis of timings of the different operations of components in the flow production by additional jigs, fixtures, gauges, etc. .	..	..
	(*g*) C. Cams on sundstrand . . .	..	5,000

Cost reduction measures	Nature of item or improvement	Value of cost reduction/ savings per piece	Total cost reduction
		Rs.	Rs.
4. *Material saving by relayout of production tools*			
(*a*)	Saving in imported mumetal	..	20,000
(*b*)	Maximum utilisation or residual cut strips of materials by re-designed strip guides, punches and dies	..	..
(*c*)	Standardisation of strip width to reduce varieties in shortage and consequent changes in tools	..	25,000
5. *Improvement in machine tools for improved performance*			
(*a*)	Modification of the Cam Milling Machines to increase cutting efficiency .		..
(*b*)	Modification of horizontal milling machines to prevent drive failure and to provide fool-proof protection circuits to prevent accidents to operators	..	..
(*c*)	Modification to the Copper Brazing Furnace to reduce element failure . .	..	..
			6,35,736

ANNEXURE 'C'

(*Referred to in paragraph* 16.06)

Organisational setup (January, 1974)



1. Asstt. Superintendent (Workshop)
2. Metallurgist.
3. Planning Engineer.
4. Superintendent (Power Plant)
5. Superintendent (Assembly Shop)
6. Plant Engineer
7. Development Engineer (Electronics)
8. Development Engineer (Mechanical)
9. Superintendent (Tool Room)
10. Secretary
11. Accountant (Costing)
12. Accountant (Finance)
13. Internal Auditor

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