



**TOGETHER**  
*for a sustainable future*

## OCCASION

This publication has been made available to the public on the occasion of the 50<sup>th</sup> anniversary of the United Nations Industrial Development Organisation.



**TOGETHER**  
*for a sustainable future*

## DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

## FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

## CONTACT

Please contact [publications@unido.org](mailto:publications@unido.org) for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at [www.unido.org](http://www.unido.org)



04885



Distr.  
LIMITED

ID/WG.146/99  
24 July 1973

United Nations Industrial Development Organization

---

ORIGINAL: ENGLISH

Third Interregional Symposium  
on the Iron and Steel Industry

Brasilia, Brazil, 14 - 21 October 1973

Agenda Item 9

MANPOWER REQUIREMENTS AND TRAINING  
FOR AN EXPANDING IRON AND STEEL INDUSTRY  
IN A DEVELOPING COUNTRY  
A PROJECTION FOR THE INDIAN STEEL INDUSTRY  
OVER THE NEXT DECADE

by

R.P. Billimoria  
Hindustan Steel Limited and  
Steel Authority of India Limited  
India

---

1/ The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO. This document has been reproduced without formal editing.

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

At 6.1 million tonnes of crude steel production per annum, India ranks very low indeed on the list of steel-producing countries. However, with the setting up of large steel plants in the public sector and the proposed expansion of some of the plants both in the private and public sectors, the country is now poised for increased production. The recent organisational innovation in the form of the steel holding company, the Steel Authority of India Limited, should further accelerate the growth of this vital industry.

In a developing country like India, manpower planning faces an acute and painful dilemma of contradictory forces, namely a massive backlog of unemployment on the one hand and the need to keep pace with the world trend towards more sophisticated machinery and plants which require lesser manpower in their operation. The problem, while admittedly difficult, is, however, not insurmountable.

The manpower estimates presented in this paper, for the new steel plants as well as for the expansion of some of the old plants, are necessarily tentative. At best they can only provide broad guidelines for the project managements in the initial planning of recruitment and training of manpower. The approach and the underlying logic, however, should be of interest.

In the context of manpower planning it is important to bear in mind two problems which are peculiarly Indian.

Construction workers are normally hired on a temporary basis, to be laid off when the construction phase is over. There is, however, growing pressure on project managements for the absorption of these workers into permanent jobs once operations commence.

In the absence of the diverse services which may be conveniently obtained in other countries through different service firms, in Indian steel plants necessary work force has to be provided to take care of all maintenance and various types of services including manufacture of spare parts and repairing of worn-out parts. It may be of considerable interest to note that on an average only about 30% of the total work force in an Indian steel plant are employed in solely production departments. The rest are all employed in maintenance and other service departments.

In tackling the problem of training the large workforce that will be needed for the new steel plants and also for the expansion of the old plants, it is useful to bear in mind the following problems which, again, are peculiarly Indian.

Unlike many other countries, India is a vast country, consisting of different ethnic groups, and as many as fourteen different major languages are spoken in different parts of the country.

Mobility of the workforce is not an established feature, and

The practice now is to recruit lower-category workers through the local employment exchanges. There is growing pressure from the State Governments for absorbing more and more local people in all categories of jobs, not always with due regard for their suitability.

India is fortunate in having available, at its existing steel plants, training facilities of considerable depth and versatility. The estimated training requirements, together with a detailed review of available facilities, are presented in the paper.

The following broad action plans are recommended:

The best time for correcting many of the maladies that exist in the area of manpower planning and training in our steel plants is at the very inception of the new plants. Project managements will have to reach practical and long-range solutions to the many thorny problems in these areas in consultation with the trade unions. Once impractical concessions are made, it would be virtually impossible to correct them later on. Luckily the new steel plants in their very design will preempt some of these problems. Firstly, they will be designed for a higher initial capacity with a smaller number of production units; and secondly, they will have a considerably higher degree of mechanisation.

A proper plan of age matrix has to be followed for the injection of employees at different levels either as experienced or as fresh recruits.

Career plans for different categories of employees will also have to be worked out, in order to meet the employees' legitimate aspirations for advancement, consistent with the need to maintain a competent work-force.

The formation, at the steel industry level, of the joint negotiating committee consisting of representatives of both management and the various unions, covering in its scope steel plants both in the public and private sectors, should be hailed as an achievement of great impact and magnitude. This committee has been functioning very satisfactorily since its inception in 1969 and it is now a widely shared hope that in the coming years it will make a substantial contribution to the growth of the steel industry in India.

## 1.0 THE INDIAN BACKGROUND

1.1 A line of powerful Cassandras, who saw little hope or purpose in the rapid growth and development of the steel industry in India during the past years, were largely responsible for a country of this size claiming for its share a mere 601 m.t. of crude steel out of world production of 581 m.t. in 1971.<sup>1</sup> No wonder that, at 12 kgs, the per capita steel consumption of India is among the lowest in the world<sup>2</sup>; Czechoslovakia, Belgium, Poland, and Italy, which are smaller than some of the constituent states in India, produce twice as much. For long periods, proposals for growth were swept into oblivion and many tried to clamp an economic strait-jacket on the expansion of the steel industry.

1.1.1 Planning for economic independence was concretised in the five year plans, and, steel being the basic material for agricultural and industrial development, an increase in its production was finally recognised as one of the key objectives. But the progress and aspirations were none too inspiring until recently. The Tata Iron and Steel Company Limited (TISCO) founded in 1907 and the Indian Iron and Steel Company Limited (IISCO), then the Steel Corporation of Bengal, which followed a little later, together produced about 1.5 m.t. by the mid-fifties. With the commissioning of the three public-sector plants at Rourkela, Bhilai, and Durgapur, their expansion, as also the expansion of TISCO and IISCO, the production has risen to a modest 6.3 m.t. in 1972-73, as shown in Table I.

The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of Hindustan Steel Limited or of the Steel Authority of India Limited.

T A B L E 1

TOTAL PRODUCTION OF INDIAN STEEL PLANTS FOR  
1972-73 (IN TONNES)

PLANT	INGOT STEEL	SALEABLE STEEL
<u>HINDUSTAN STEEL LIMITED (HSL)</u>		
BHILAI STEEL PLANT	2,107,920	1,745,648
DURGAPUR STEEL PLANT	722,777	476,938
ROURKELA STEEL PLANT	1,177,036	764,829
<u>THE TATA IRON AND STEEL COMPANY LIMITED</u>	1,690,047	1,458,457
<u>THE INDIAN IRON AND STEEL COMPANY LIMITED</u>	431,157	357,239
<u>MYSORE IRON AND STEEL LIMITED (MISL)</u>	164,986	103,924
<b>TOTAL:</b>	<b>6,293,923</b>	<b>4,907,035</b>

A country's progressiveness is, however, not determined solely by what it has achieved but what it seeks to achieve. Our sights for the next two decades are set much higher. India expects to produce 19 m.t. by 1980 through the expansion of the existing plants and the setting up of new plants. It is proposed to double this figure to 38 m.t. by 1985 through further expansion of the plants and preparing the ground for an annual step up of the order of at least 2 m.t. per year.<sup>3</sup> Even so, we shall barely catch up with the increasing domestic demands.

## 1.2 THE ORGANISATION STRUCTURE: FORMATION OF A HOLDING COMPANY

1.2.1 In a country like India, the race between development and despair is perennial: the failure of a monsoon, inundation by floods, or emergency needs can throw a pre-planned budget out of gear. In this milieu, the task of maintaining production at near installed capacity, planning and executing expansion of existing steel plants, and setting up of new plants, on the ambitious scale provided for could hardly be achieved in the traditional institutional frame-work of layers of technocrats in the plants, and bureaucrats in the government, vying with each other in passing the proverbial buck. And the buck never stops with a person, however high up he may be, because each - technocrat or bureaucrat - is a bird of passage.

conveniently flitting from job to job, which makes the pinning of responsibility a Herculean task.

1.2.2 Keeping in view the large-scale development that has to take place in the steel industry, the Steel Authority of India (SAIL) has been established. SAIL is a holding company with the input industries and the steel plants as its subsidiaries. Among others, the holding company owns all shares in the public-sector steel companies; owns all government shares in the National Mineral Development Corporation; and also the government shares in joint-sector companies mining iron and manganese ores. It also acts as a nominee of public-sector financial institutions having shares in private-sector steel companies like the Tata Iron and Steel Company Limited (TISCO), the Indian Iron and Steel Company Limited (IISCO), mining companies and mini-steel plants, with a view to co-ordinating their operations, and owns all shares in Bharat Coking Coal Limited. Some of the important objectives of SAIL are:

- i) To plan, promote, and organise an integrated and efficient development of the iron and steel and its associated input industries, such as coking coal, manganese, limestone, refractories, etc. in accordance with the national economic policy and objectives laid down by government from time to time;
- ii) To co-ordinate the activities of its subsidiaries, to determine their economic and financial objectives, targets and to review, control, guide and direct their performance with a view to securing optimal utilisation of all resources placed at their disposal;
- iii) To operate on sound commercial principles subject to such policy directives as may be issued by government from time to time;
- iv) To act as an entrepreneur on behalf of the state, to identify new areas of economic investment, and to undertake or help in the undertaking of such investments; and
- v) To formulate and recommend to the government a national policy for the development of iron and steel and related input industries and to advise them on all policy and technical matters.

1.2.3 One of the important functions of SAIL would be to ensure career development, succession planning, and the organization and development of a "Steel Cadre". The progressive implementation of policies that will lead to the achievement of the above-mentioned objectives must result in opportunities for promotion to the highest levels in SAIL and its subsidiaries by qualified personnel from within SAIL and its



subsidiaries. At the same time SAIL will also continue to recruit talented and qualified personnel from outside. The manning of key-posts by a proper policy of internal promotion and direct recruitment, when required, can best be done by SAIL and its subsidiaries.

1.2.4 SAIL would prepare an Annual and a Five-Year Plan within the framework of the National Plan and the parameters indicated therein in regard to factors such as resource availability. The annual capital budget would be largely an aggregate of the capital expenditures to be incurred during the year by its subsidiaries. In the Board of SAIL, the Secretary in the Ministry of Finance and the Secretary of the Planning Commission are included. This affords them an opportunity, along with other members of the Board, to scrutinise, discuss, and approve the budget of the company, taking note of plan resources and priorities.

1.2.5 Based on the consolidated budgetary requirement of SAIL, government makes available to it necessary assistance by way of equity or loan. SAIL, in turn, makes these amounts available to its subsidiaries based on their requirements from time to time. SAIL will exercise and ensure in its various subsidiaries, through appropriate mechanisms, proper financial discipline in the utilisation of these funds. Given this flexibility of operation, it is expected that the holding company, devoid of the governmental red tape, would be able to deliver the goods.<sup>4</sup>

1.2.6 The function of SAIL is an indication that the nation's sights are no longer fixed on averting the worst but on attaining the best.

### 1.3 TASK FORCE FOR STEEL DEVELOPMENT PROGRAMME

1.3.1 In connection with the formulation of policies and programmes relating to the development of metallurgical industries in the Fifth Plan period (1974-79), the Planning Commission constituted a Steering Group on Metallurgical Industries. At the meeting of the Steering Group held in June 1972, it was decided that a Task Force on Iron and Steel should be constituted to formulate the steel development programme in the Fifth and Sixth Plans.

1.3.2 At the first meeting of the Task Force on Iron and Steel held in August 1972, it was decided to constitute seven planning groups

to get distributed in the various stages of planning:

- i) Demand analysis by product lines,
- ii) Intra-industry relationships,
- iii) Raw materials,
- iv) Research and development facilities,
- v) Strategy for development of steel capacity,
- vi) Design and construction of steel plants, and
- vii) Manpower and training.

**1.3.3.** The terms of reference assigned to the Planning Group on Manpower and Training were as follows:

- i) To assess the employment potential likely to be provided by the iron and steel industry during the Fifth and the Sixth plan periods and to work out technical manpower requirements in different categories, drawing attention to any significant gaps in such requirements and in the related training facilities, and
- ii) To make such other recommendations as may be considered appropriate and which may arise from the above terms of reference.

**1.3.4** The author is indebted to Mr. S. S. Sicker, Chairman of the Planning Group, and to its members, particularly to Mr. R. Srinivasan, for the use of valuable material from their report, in the preparation of this paper.

## **2.0** MANPOWER REQUIREMENTS

### **2.1** DILEMMA IN MANPOWER PLANNING

**2.1.1** Table II gives an indication of existing plants, their capacities, existing manpower, proposed expansion, proposed manning as also the proposed capacities and proposed manning for the new plants to be set up during the next decade. A glance at this table will indicate that the existing steel plants suffer from over-manning and, perhaps, the manning requirements for their expansion, also, are in excess as compared to similar units in Western countries. It would be interesting to study briefly the background of this situation.

**2.1.2** In India, as in other developing countries, the acquisition of a steel plant is considered by many in its constituent states (province) as a prestigious addition, with the hope that it would provide employment for multitudes of local people and enrich the economy. Local trade unions, politicians, and citizens are steeped in this culture. They often find it difficult to accept the reality that a steel plant is truly a national asset, that its

T A B L E II

EXISTING AND NEW STEEL PLANTS - OVERALL MANPOWER POSITION

A. EXISTING PLANTS	EXISTING CAPACITY	EXISTING MANPOWER		PROPOSED EXPANSION	ADDITIONAL REQUIREMENTS (WORKS MANPOWER ONLY)
		WORKS	NON-WORKS		
SHILAI STEEL PLANT - HSL	2.5 MT	28,004	6,914	4 MT	3315
HOORKELA STEEL PLANT-HSL	1.8 MT	21,584	6,999	-	-
BURGAPUR STEEL PLANT-HSL	1.5 MT	22,150	7,865	-	-
ALLOY STEELS PLANT -HSL	0.1 MT	5,597	967	-	-
TISCO	2 MT	28,489	7,377	-	-
IISCO	1 MT	14,537	4,436	-	-
MISL	0.07 MT of Alloy Steel	9,925	1,623	-	-
BOKARO STEEL LTD.	1.7 MT	-	-	4 MT	7430

B. NEW STEEL PLANTS	PROPOSED CAPACITY	PROPOSED MANPOWER	ADDITIONAL REQUIREMENTS (WORKS MANPOWER ONLY)
		WORKS	NON-WORKS (EXCLUDING JOINSHIP)
VISAKHAPATNAM STEEL PROJECT	2.64 MT	15,065	1,735
VIJAYNAGAR STEEL PROJECT	2.64 MT	15,490	1,735
SALDA STEEL PROJECT	0.25 MT	5,585	1,070

\* Excludes ore mines and quarries, construction, temporary and casual staff.

location is determined by a number of factors such as availability of raw materials, transport, water, and power, that it is basically a capital-intensive industry and not a labour-intensive industry, and it provides for larger employment not within itself but through a multiplier effect in that employment is found in a large number of consumer and engineering industries which make use of the finished steel produced.

2.1.3 Then, there is the problem of excessive manning. India experienced a population explosion in the 1950s. The rate of growth per thousand of population for 1951-61 shot up to 21.64 as against 13.31 for the preceding decade. The period 1961-71 was shown a further increase in this rate to 24.8.

2.1.4 As a sequel to this, with a time lag of 15 years, the country has entered a period of labour-force explosion. The babies of yesterday have grown to become job-seekers of today. Even if family planning begins to show spectacular results, its impact on additions to the labour-force will be felt only after 15 to 20 years. In the meantime, the country has to withstand the labour-force explosion and plan to transform this serious threat to growth and stability into a powerful aid to progress. This is the crux of the employment problem.<sup>5</sup> The unemployment figure is estimated around 20 million against a population of 547 millions in 1971.

2.1.5 No wonder the pressures for increasing manning grow from within and without, and a total resistance to such pressures has not been found practicable. Industrial engineering experts from within the organisation, as also consultants, have carried out innumerable exercises on the basis of work-measurement, showing excesses, but with rare exceptions, the workers and the unions have not accepted the validity of such studies. The problems created by overmanning are not merely a physical addition to the work-force with consequent increase of the wage bill; the other additions are:

- 1) Multiplier expenditure in providing for various fringe benefits and other facilities including housing, medical, and welfare; and
- 2) Industrial relations problems caused by an excessive workforce determined in an adhoc manner and not on the basis of scientific study.

- 2.1.6 The manpower planner in the current Indian situation thus faces the dilemma of contradictory forces, namely, backlog of unemployment on the one hand and keeping pace with the world trends of more sophisticated machinery and plants which require less and less manpower for their operation. The lesson for the executive in facing pressures for over-manning is amply clear: the time to stiffen the back-bone is in the initial stages of standard force determination and not after the concessions have already been made. The unions, if not yet persuaded, may be persuadable provided they are assured that management's yardsticks are not made of rubber.
- 2.1.7 Large-scale industrialisation has been undertaken only in the last 25 years. Consequently many of the employees in Indian steel plants are first generation entrants in the industrial scene. A transition from an agricultural economy to the increasingly sophisticated industrial scene provides considerable challenges and strains to the manpower employed. Keeping in mind these problems and the pressures for providing wider employment opportunities, perhaps, a case could be made in favour of installing a larger number of steel plants of limited capacities in dispersed locations. In fact a few mini steel plants are coming up in the country. But such a step on a mass scale would, in the long-run, prove retrograde in view of the improvements in technology and bigger-size plants which are adopted in advanced countries from the point of view of overall economy. Caught between these opposing forces, planners have to opt for a tight-rope walking exercise in order to keep pace with the growing technology and also to adopt it wherever possible so as to provide larger opportunities for employment.
- 2.1.8 For the new steel plants, technical consultants have recommended comparatively bigger units and a greater degree of mechanisation. As against 1000 OM blast furnaces in the 1950s, the present trend is for 2000 OM or more; as against conventional open-hearth furnaces of 250 m.t. capacity, LD converters with a much higher rate of productivity are being adopted; continuous casting is replacing the conventional blooming and slabbing mills; finishing mills are put up with faster rolling rates and greater degree of automatic controls. The adoption of these technological changes necessitates the need for an improved quality of manpower. The planner has therefore to provide for a well-conceived manpower plan to ensure that the right quality of manpower is recruited, trained, and made available to run the future steel plants.

## 2.2 BASIS OF STUDY

- 2.2.1 Against this background the planning group referred to earlier has made its recommendations based on technical details available at the time of preparation of the report. It is made amply clear that a projection of this nature for the first time is necessarily on the basis of a preliminary estimate, the purpose being to provide overall guidelines for the project management in the initial planning of recruitment and training of manpower. This will necessarily have to be followed by more detailed manpower planning exercises to be undertaken at the detailed project report (DPR) stage.
- 2.2.2 Broadly the methodology adopted for the assumption of manpower is as follows:
- 2.2.3 For Production Departments - main production units and items to be installed were listed; the number of shifts to be operated was noted; manpower needs were assessed for various equipment positions and operating points on the basis of reference manning and work measurement details available from studies conducted for similar units in the existing plants of Hindustan Steel Limited (HSL); spell hands were provided on the basis of work-measurement studies in these plants and not on the basis of traditional practices; leave reserves were provided on the basis of 25% for seven days' operation and 10% for six days' operation as per existing practices.
- 2.2.4 For Maintenance and Service Departments - in Indian steel plants, necessary workforce has to be provided to take care of all types of maintenance - routine, preventive and capital repairs - and for various types of service, including manufacture of spare parts and repairing of worn out parts. Since such services may be conveniently obtained in other countries through different service firms, provision of such a large work force for these services may not be found in steel plants elsewhere. It will be of interest to note that in the overall composition of work force in Indian steel plants, the component belonging to production departments constitutes only about 30% and the remaining belongs to maintenance and service departments.
- 2.2.5 The workforce provided for maintenance work is for the three main groups:
- (1) the first relating to maintenance activities which are the responsibilities of production departments - assigned maintenance;

- ii) the second relating to the repair and maintenance jobs which are under the overall control of maintenance departments, and
- iii) the third relating to the centralised maintenance departments - both electrical and mechanical - for carrying out heavy breakdown repairs and major repairs like relining of blast furnaces and coke ovens.

2.2.6 Since the work load of maintenance would vary considerably at different periods of time, it is somewhat difficult to determine precise manning requirements. For assessment of manpower for assigned maintenance the following procedure has been adopted:

- i) Preparing a comprehensive list of all equipments to be maintained;
- ii) Detailing the type of preventive maintenance that should be carried out;
- iii) Determining the frequency of such preventive maintenance work;
- iv) Determining the quantum and frequency of breakdowns based on past records in similar plants; and
- v) Assessing the manpower requirements for the overall quantum of work.

2.2.7 There are different patterns of maintenance organisation adopted in different steel plants, including centralised maintenance. However, over a period of time it has been found that it would be better to consider maintenance also as a primary responsibility of the operating departmental head. This pattern has been suggested for all new steel plants whereby necessary maintenance personnel are provided in the departmental manpower. It is obvious that proper maintenance planning and scheduling particularly with reference to preventive maintenance, should be introduced right from the beginning so that there is no progressive degeneration of new equipment and the maintenance manpower is better utilised.

2.2.8 For Service Departments: The assessment of manpower for service departments has been patterned on the manning worked out for similar departments in steel plants under HSL, based on work-measurement studies. As indicated earlier, the responsibility is on project managements to ensure considerable planning on work flow and to exercise proper control on manpower assigned to service departments in order to maintain their performance at a reasonable level.

2.2.9 In the case of existing steel plants which will be expanded, like Bhilai, the planning group has felt that enough provision has already been made for the various service departments. Hence for the current manpower planning exercise, additional manpower has been provided only for such service departments where they may require additional operating manpower, as in rail transport, and refractories. This has

been done with a view to helping management improve labour productivity in the 4 NT stage.

- 2.2.10 The overall requirements of manpower in departments like personnel, purchase, stores, finance, and administration for the new steel plants have been assessed on the most suitable practices available in some of the existing plants. It is obvious that the project managements of the individual steel plants have to take considerable pains to introduce efficient office systems and procedures right from the beginning so that the manpower utilisation in these departments is optimum.
- 2.2.11 Unlike in Western countries, the steel-plant management in India has to provide for elaborate township, medical, and health facilities for employees, in view of the fact that many of the steel plants are erected in places where such facilities do not exist. The Planning Group has not in its present exercise indicated the manpower requirements for the township, medical, and public health departments. Once the extent of such facilities to be put up are known in greater detail, assessment of manpower requirement for these services can be worked out easily, based on existing norms.
- 2.2.12 Detailed Estimates: The overall manpower requirements worked out on the above guidelines for the new steel plants and for expansion of the Bhilai and Bokaro Steel plants are given in Table III (figures have been rounded off to the nearest multiple of five).
- 2.2.13 Desirable Age-matrix in the Workforce: Based on past experience it is suggested that the new steel plants would do well to take care of the need for maintaining a proper age-matrix among the various categories of personnel taken at different levels. For example, taking in young men in their twenties or early thirties in each category has often led to frustration and unrest later, due to lack of opportunity for advancement.



TABLE III

ESTIMATED MANPOWER REQUIREMENTS FOR NEW STEEL PLANTS  
AS WELL AS FOR EXPANSION OF EXISTING STEEL PLANTS

**I. VISAKHAPATNAM STEEL PLANT**

SECTION	EXECUTIVES	NON-EXECUTIVES				Total Non-execs	Total Execs.+ Non-execs.
		Highly skilled	Skilled	Semi-skilled	Unskilled		
<b>I. VISAKHAPATNAM STEEL PLANT</b>							
<b>A. WORKS STAFF</b>							
Prodn. (Including Tech. Staff of G.S. Office)	215	535	2550	370	790	4245	4460
Departmental Maintenance	100	225	1270	430	300	2225	2325
Centralised Maintenance & Services	480	1350	3825	780	1390	7345	7825
Works Office Staff	-	-	-	-	-	455	455
<b>TOTAL (A)</b>	<b>795</b>	<b>2110</b>	<b>7645</b>	<b>1580</b>	<b>2480</b>	<b>14270</b>	<b>15065</b>
<b>B. GENERAL ADMINISTRATION</b>							
	130	-	-	-	-	1605	1735
<b>TOTAL (AMB)</b>	<b>925</b>					<b>15875</b>	<b>16800</b>
<b>II. VIJAYANAGAR STEEL PLANT</b>							
<b>A. WORKS STAFF</b>							
Prodn. (Including Tech. Staff of G.S. Office)	220	565	2475	475	660	4175	4395
Departmental Maintenance	100	210	1255	425	280	2170	2270
Centralised Maintenance & Services	495	1440	4130	825	1465	7860	8355
Works Office Staff	-	-	-	-	-	470	470
<b>TOTAL (A)</b>	<b>815</b>	<b>2215</b>	<b>7860</b>	<b>1725</b>	<b>2405</b>	<b>14675</b>	<b>15490</b>
<b>B. GENERAL ADMINISTRATION</b>							
	130	-	-	-	-	1605	1735
<b>TOTAL (AMB)</b>	<b>945</b>					<b>16280</b>	<b>17225</b>

(Contd....)

TABLE III (Contd.)

III. BHILAI STEEL PLANT

SECTION	EXECUTIVES	NON-EXECUTIVES				Total Non-execs.	Total Execs. Non-execs.
		Highly skilled	Skilled	Semi-skilled	Unskilled		
<b>A. <u>EXISTING STAFF</u></b>							
Production (Including Tech. Staff of CS Office)	135	270	1230	270	175	1945	2080
Departmental Maintenance	70	125	485	175	130	920	985
Centralised Maintenance & Services	185	345	1165	295	245	2050	2235
Works Office Staff	-	-	-	-	-	255	255
<b>TOTAL (A)</b>	<b>390</b>	<b>740</b>	<b>2880</b>	<b>740</b>	<b>550</b>	<b>5165</b>	<b>5585</b>
<b>B. <u>GENERAL ADMINISTRATION</u></b>							
	80	-	-	-	-	990	1070
<b>TOTAL (A+B)</b>	<b>470</b>					<b>6155</b>	<b>6625</b>
<b>IV. <u>EXPANSION OF BHILAI STEEL PLANT FROM 2.5 TO 4 MT STAGE (ADDITIONAL MANPOWER REQUIRED)</u></b>							
Production Departments	90	200	985	140	310	1635	1725
Departmental Maintenance	45	80	495	135	150	860	905
Centralised Maintenance & Services	20	55	375	45	190	665	685
<b>TOTAL</b>	<b>155</b>	<b>335</b>	<b>1855</b>	<b>320</b>	<b>650</b>	<b>3160</b>	<b>3315</b>
<b>V. <u>EXPANSION OF BOKARO STEEL PLANT FROM 1.7 TO 4 MT STAGE (ADDITIONAL MANPOWER REQUIRED)</u></b>							
Production Departments	95	455	1460	230	375	2520	2615
Departmental Maintenance	50	110	720	285	95	1210	1260
Centralised Maintenance & Services	125	515	2100	280	585	3480	3600
<b>TOTAL</b>	<b>270</b>	<b>1080</b>	<b>4280</b>	<b>795</b>	<b>1055</b>	<b>7210</b>	<b>7475</b>

2.2.14 A proper age and qualification mix has been suggested so that there is a smooth progression of employees during their career with minimum problem-situations and a gradual turn-over. It is also expected that by willingly sharing experier ed personnel in a planned manner the existing steel plants will also benefit by:

- i) correcting imbalances in the age and qualification mix they may be having in their existing workforce;
- ii) paving the way for greater progression of the employees at lower levels; and
- iii) making room for inducting fresh-blood at different levels.

2.2.15 Construction manpower: In the context of the prevailing unemployment problem in the country, the re-deployment of construction labour engaged during the construction period and the pressure for its absorption in new plants as they go into operation is posing a Herculean problem that will continue to haunt the steel industry for many years to come. Even though the planning group has given some weightage to the absorption of construction labour in operation jobs, it is obvious that all the construction labour cannot be so deployed. Hence the need for manpower-planning in respect of construction labour as well. Project managements in consultation with trade unions would have to take special care to develop an overall manpower planning strategy to ensure a smooth transition from the construction to the operation and maintenance stage.

2.2.16 In view of the fact that HSL has experience in the construction and expansion of three steel plants, data on past performance was collected. The group also considered the data from the current construction phase in the Bokaro Steel Plant and arrived at average norms of productivity per man-month for various broad heads of construction activities. Performance in the past, the view of consultants, and the impact of environment on productivity were some of the factors taken into consideration. The norms so arrived at and indicated in Table IV are intended mainly to provide broad guidelines for the project managements of new plants, for controlling the overall performance during the construction stage, spread over a long period.

2.2.17 Based on the available data the group has assumed the figures given in Table V with regard to the quantum of work under various heads to be carried out during the construction stage and this has been taken as the basis for calculating the manpower requirements.

**T A B L E IV**  
**FORMS OF PRODUCTIVITY FOR CONSTRUCTION ACTIVITIES**

Activity	Productivity
1. Earthwork for site preparation	25 CM per man-month
2. Concreting	1.2 CM per man-month
3. Structural Erection	1.25 tonnes per man-month
4. Equipment Erection	0.9 tonnes per man-month
5. Refractories	6.00 tonnes per man-month

**T A B L E V**  
**ESTIMATED MANPOWER REQUIREMENTS DURING THE CONSTRUCTION STAGE**

Sl. No.	Particulars	Vijay-nagar plant	Visakha-patnam Plant	Salen Steel Plant	Bhilai Expansion	Bokaro Expansion
1.	Plant Capacity	2.54 MT	2.64 MT	0.25 MT	4. MT	4 MT
2.	Earthwork for site preparation (million cubic meters)	about 11.0	about 11.0	about 1.9	about 1.5	about 5.0
3.	Concreting -cc-	about 1.2	about 1.2	about 0.48	about 0.46	about 0.55
4.	Building structurals (in tonnes)	about 2,00,000	about 2,00,000	about 74,000	about 65,000	about 94,000
5.	Total equipment erection (Mech., Elec., including technological pipelines in tonnes)	about 2,20,000	about 2,00,000	about 80,000	about 1,05,000	about 1,83,000
6.	Refractories (in tonnes)	about 1,30,000	about 1,30,000	-	-	about 1,23,000

The assessment of manpower requirements during construction stage for the various schemes has been indicated in Table VI. These figures have been worked out based on the schedule of construction given in the feasibility reports.

### 2.3

#### BREAK WITH THE PAST

#### 2.3.1

The manpower assessment made by the planning group for the new steel plants and also for the expansion of the existing plants indicates a much lower figure than the manpower in existing plants. The reasons are not far to seek. In the case of new steel plants, which are put up with a bigger initial capacity

TABLE VI  
AVERAGE AND PEAK MANPOWER REQUIREMENTS DURING  
CONSTRUCTION STAGE

Sl. No.	Scheme	Construction spreadover	Average Manpower	Peak Manpower requirement
1.	Visakhapatnam	6½ years	24,000	45,540
2.	Vijayanagar	6½ years	24,000	45,540
3.	Salem	5½ years	10,250	16,700
4.	Bhilai Expansion	4 years	13,000	18,700
5.	Bokaro Expansion	3½ years	22,000	30,500

the manpower requirements will obviously be much less for the following reasons:

- (i) The new plants are put up with higher initial capacity, will have a smaller number of main production units compared to those obtaining in earlier plants which were put up with a smaller initial capacity. For example, the new steel plants will have only four coke-oven batteries, two blast furnaces of higher capacity, and three LD converters as compared to a large number of smaller-size units in the existing steel plants;
- (ii) the plants will have a higher degree of mechanisation;
- (iii) they will have the advantage of experience gained in the existing steel plants; with the availability of work measurement data relating to manpower, the pitfalls in manpower planning and consequent over-manning can be avoided if the management exercises control right from the start.

2.3.2 In Indian steel plants, an overall labour productivity factor in terms of ingot tonnes per man year is used as a rough indicator of the overall labour productivity. Comparison of such figures with those in plants in advanced countries may not, however, be valid. As already indicated, a larger complement of manpower has to be employed in maintenance and service departments. Keeping in view the existing levels of labour productivity reached in Indian steel plants, the planning group has endeavoured to suggest a manpower pattern for new plants and for expansion of existing steel plants so that there is a distinct possibility of avoiding over-staffing and consequently improving the overall labour productivity for the different steel plants. This is projected in Table VII.

TABLE VII  
LABOUR PRODUCTIVITY ESTIMATES FOR NEW PLANTS  
AS WELL AS FOR EXPANSION OF OLD PLANTS

Sl. No.	Steel Plant	Capacity	Overall labour productivity (Tons)
1.	Vishakhapatnam	2.64 MT	175 tons liquid steel/man year
2.	Vijayanagar	2.04 MT	171 -do-
3.	Salem (Alloy Steels)	0.23 MT	45 tonnes per man year
4.	Bhilai Expansion	4 MT	122 -do-
5.	Bokaro Expansion	4 MT	155 -do-

2.3.3 Such projections often tend to go awry in practice, if the managers of projects do not lend support to the assessment and instead bend to the pressures for duplicating existing manning patterns. Achievement of the suggested overall labour productivity rates should be one of the primary objectives of management. Marginal changes in manpower composition may be inevitable but even such changes should be based exclusively on work-measurement studies.

#### 2.4 A CASE FOR PHASED MANNING OF NEW UNITS

2.4.1 In the past, manpower planning has not achieved much success because of lack of planning for making manpower inputs available in a phased manner linked with levels of production attained. Unlike many other countries, in Indian steel plants, one cannot apply the policy of hire and fire, or lay off workers easily, when necessary. It is often seen that there is an imbalance between the actual production level reached and the manpower employed. While putting up new steel plants, it is very likely that the expected commissioning dates of the various units might get changed due to various developments. It is, therefore, necessary that project managements update their recruitment and training programme for manpower, consistent with the changes that might take place in the commissioning dates. It is, therefore, suggested that only a certain percentage of the assessed manpower requirements should be made available when the first few units get commissioned and the balance taken in only as and when the other units get commissioned. While it will be wrong to keep production units idle for want of manpower, it is also equally undesirable to keep trained manpower idle because of delays in commissioning of various production units. Present experience shows that the idle manpower is used

for padding up the force in the commissioned units and, when the other units come into operation later, there is pressure for employing more men. Project management will have a key role in making necessary adjustments in the manpower provisioning programme so that such imbalances are minimised.

3.0

### TRAINING

3.1 It is obvious that the existing steel plants would be the primary source for recruitment and training of skilled workers, craftsmen, and engineers for the new plants. This again poses certain problems.

### 3.2 Ethnic Problems of Training

3.2.1 Earlier a reference has been made to the mounting unemployment problem in the country. Unlike many other countries, India is a vast country consisting of different ethnic groups and, as many as 14 main languages are spoken in different parts of the country. Mobility of the workforce is not an established feature. The new steel plants are located in different states consistent with availability of raw material and resources and government's policy of dispersing industries in under-developed areas. These factors provide considerable challenges in providing the right kind of manpower for the steel development programme. For the lower category of workers, recruitment is done through the local employment exchanges. It is an accepted policy that for the lowest paid and semi-skilled jobs only local people registered with the local employment exchange are to be employed. There is also considerable pressure for employing local people in all other categories as well. But the workforce for a new steel plant will have to be trained mainly with the training facilities at the existing steel plants. If local people from states where the existing steel plants are located are recruited and trained, it is obvious that their transfer to the new plants located in other states may be strongly resisted by the latter.

3.2.2 For the new steel plants, there has to be a happy blend of experienced personnel drawn from the existing plants and fresh recruits who may be trained and placed on different jobs. Transfer of experienced craftsmen, technicians, and supervisory personnel from the existing plants to new plants may also face resistance. It is inevitable that, apart from the lower echelons, each steel plant will need to have a work force of technicians and managers composed of persons drawn from various states. Such a balanced composition would also contribute to the development and proper integration of work groups

and towards social unity outside the plants. For it would be clearly unwise to argue that the man from each state should retire to his own corner of the country and live there for ever.

### 3.3 Training Requirements

3.3.1 Granting that sparing of experienced personnel for the new steel plants is agreed to in principle by existing plants, the implementation requires earmarking of experienced personnel and taking advance action for replacing them by fresh recruits. For the running steel plants this poses a formidable problem.

3.3.2 The new steel plants would require during the Fifth and Sixth plan periods 2300 executives at different levels, 5000 highly skilled personnel, 18,000 skilled personnel, about 100,000 semi-skilled and unskilled personnel, and about 5300 office staff. This overall requirement will have to be met as follows:

- (i) Fresh recruitment at the local level;
- (ii) Employment of a reasonable proportion of experienced personnel spared by the existing steel plants and some from other industries;
- (iii) Absorption of some skilled manpower from the construction workforce;
- (iv) Recruitment of fresh graduates, diploma holders and training them before absorption at various levels.

### 3.4 TASK PRIORITIES

3.4.1 In addition to these, the existing steel plants which will be undergoing expansion such as Bhilai, Bokaro, TISCO, and IISCO will also have to take in additional recruits for meeting their own expansion manpower requirements. Much depends upon the co-operation to be extended by the existing plants in willingly sharing experienced personnel and also taking necessary steps for meeting the training load of fresh recruits for the new plants. It is obvious that such a massive development programme requires considerable depth of manpower planning and training efforts which could be broken down into the following tasks:

- (a) Identifying experienced personnel at different levels from existing plants, to be ear-marked for new plants;
- (b) phased recruitment and training programme for fresh recruits;
- (c) phased placement programme depending upon the commissioning schedule of various units.

3.4.2 When the existing steel plants were put up by HSL a large number of trainees were trained in the private-sector steel plant, TISCO, and various other institutions; a large number of trainees were also



sent for training abroad. At present, however, India is in a better position, in that all the steel plants have well-established training facilities and it would be possible to meet all the requirements of trained personnel for the steel development programme by availing of these facilities.

### 3.5 Schedule of Requirement of Trained Personnel

3.5.1 The planning group has assumed the dates of commissioning of new steel plants and of expansion programmes as shown in Table VIII.

TABLE VIII  
EXPECTED COMMISSIONING DATES FOR NEW PLANTS  
AS WELL AS EXPANSION OF OLD PLANTS

Plant	Expected commissioning dates
Visakhapatnam	Different Deptts. .. 1979-80
	Entire Plant .. 1980
Vijayanagar	Different Deptts. .. 1979-80
	Entire Plant .. 1980
Salan	Cold Rolling Mills .. 1975-76
	(Stainless Steel Unit)
	Entire Plant .. 1977-78
Bhilai Expansion	Sintering Plant
	Continuous casting and steel-making facilities .. 1976
	Plate Mill (Expansion to 4 m.t. stage) .. 1977
Bokaro Expansion	2.5 m.t. stage .. 1974
	4 m.t. stage .. 1976-77

3.5.2 Based on the above schedule of commissioning dates, the group has worked out an approximate schedule of placement of trainees in the various plants for necessary training. In determining the number of fresh trainees to be recruited and trained, certain assumptions have also been made with regard to the source of supply, as shown in Table IX.

3.5.3 The proportions mentioned therein have been recommended, taking into consideration the promotion policy in the existing plants and the need for having a blend of fresh trainees and experienced personnel in the workforce of the new plants. Based on the above guidelines and taking into consideration the lead time required for training of different categories of trainees, an overall plan for intake of fresh trainees year-wise has also been worked out.

**TABLE IX**  
**ANTICIPATED SOURCES OF SUPPLY FOR VARIOUS CATEGORIES OF EMPLOYEE**

Category	Source of supply	
	For expansion of existing plants	For New Plants
Sr. Supervisory positions (Asstt. General Foreman and above)	100% by promotion from within	40% from existing steel plants, 10% from other industries; and 50% through fresh trainees.
Jr. Supervisory positions (Asstt. Foreman and Foreman)	50% by promotion from within and 50% through fresh trainees.	20% from existing steel plants, 10% from other industries; and 70% through fresh trainees.
Sr. Operative trainees (B.Sc.s. 40%; Diploma holders 60%)	25% by promotion from within, and 75% through fresh trainees	25% from existing steel plants 25% from construction; and 50% through fresh trainees
Jr. Operative Trainees	25% by promotion from within, and 75% through fresh trainees.	50% from construction; and 50% through fresh trainees.
Artisan Trainees for tradesman's jobs like fitter, welder and turner	25% by promotion from within and 75% through fresh trainees	50% from construction; and 50% through fresh trainees.

### 3.6 Review of Existing Training Facilities and Capacities

3.6.1 A review of state-wise availability of technical graduates and diploma holders discipline-wise capacity and out-turn of degree holders and diploma holders, and state-wise availability of trade apprentices indicates that there is no need to increase the educational facilities for meeting the additional manpower requirements for the steel development programme. The institutions may, however, have to alter the pattern of specialisation and increase the output in certain specific areas where the output is scarce, such as instrumentation, industrial engineering, systems engineering, and materials management.

3.6.2 For the steel industry fresh manpower is normally recruited and trained at three different levels:

- i) graduate engineers in electrical, mechanical, metallurgical, and chemical engineering are recruited, and, after intensive training for 18 months, absorbed at the front-line supervision level. For the general administration and other departments like personnel, finance, and sales, first-class graduates in science, arts, and commerce are recruited and trained before placement at the front-line supervision level;
- ii) For the operation departments, trainees are taken at two different levels, namely as senior operatives and junior operatives. Graduates in science or diploma holders in engineering are taken for the former and given 18 months' training before being posted in highly skilled jobs such as melters, assistant rollers, and chargehands. For the junior operative level, persons who have completed high school are taken and given training before absorption as operatives in designations such as crane drivers and furnace hands;
- iii) For maintenance departments, trade apprentices or apprentices recruited under the Apprentices Act 1961 are inducted from among matriculates. They are given necessary training before absorption as tradesmen in posts such as fitters, electricians and welders.

3.6.3 HSL Steel Plants have well-established training facilities for undertaking pre-employment training for various categories of trainees as indicated in Table X.\*

T A B L E X  
FACILITIES AVAILABLE IN HSL PLANTS FOR PRE-EMPLOYMENT TRAINING

Steel Plant	Graduate Engineer Trainees	Senior Operative Trainees	Junior Operative Trainees	Artisan Trainees for Trade Apprentices
<b>Bhilai Steel Plant</b>				
Annual Intake	100	150	150	150 <sup>2</sup>
Total Capacity	200	300	300	300 <sup>2</sup>
<b>Durgapur Steel Plant</b>				
Annual Intake	100 <sup>2</sup>	250 <sup>2</sup>	250 <sup>2</sup>	300 <sup>2</sup>
Total Capacity	200 <sup>2</sup>	450 <sup>2</sup>	450 <sup>2</sup>	550 <sup>2</sup>
<b>Rourkela Steel Plant</b>				
Annual Intake	150 <sup>1</sup>	250 <sup>2</sup>	300 <sup>2</sup>	300 <sup>2</sup>
Total Capacity	300 <sup>1</sup>	500 <sup>2</sup>	600 <sup>2</sup>	600 <sup>2</sup>
<b>Alloy Steels Plant</b>				
Annual Intake	25	37	50	25
Total Capacity	50	75	100	50

\* Statistics for Iron and Steel Industry - HSL 1970

1 On one shift basis

2 On two shift basis

3.6.4 Training capacities available with Bokaro Steel Limited (BSL), TISCO and IISCO are given in table XI.

TABLE XI  
PRE-EMPLOYMENT TRAINING FACILITIES AVAILABLE AT  
SOLARO, TISCO, AND IISCO

	Graduate Engineer Trainees	Senior Operative Trainees	Junior Operative Trainees	Artisan Trainees or Trade Appren- tices
BSL(Tentative)	100	150	150	200
TISCO *	25	-	┌───┐ 200	
IISCO *	30	50	└───┘ 170	

3.6.5 It appears that no spare capacity for training is available from TISCO and IISCO, as with present facilities they would at best be able to cover their own expansion requirements. The bulk of the trainees have, therefore, to be trained in the training institutes of HSL and BSL. In order to meet the full training load for the steel development programme, these institutes may have to be put on two-shift basis from 1973 onwards. In any case the training institutes for the new steel plants will take quite some time to be put up with adequate facilities. These training institutes in the new plants need not be exact replicas of those already existing and they should have more facilities for employee development programmes.

3.6.6 With regard to required manpower for construction stage, the bulk can be recruited from the open market and Industrial Training Institutes (ITI). It is observed that the existing facilities at the ITIs in various states are rather under-utilised. It will therefore be necessary only for the concerned states to plan and modify the future trade-wise intake as well as plan their courses in trades not being catered to presently. There are critical trades in construction work such as crane operators, arc welders, gas cutters, and fitters for which special training programmes will have to be designed. The fulfilment of construction schedules as well as quality workmanship will be determined by the timely availability of such critical construction manpower.

3.6.7 From the manpower requirements given for construction and operation stages, it will be obvious that all the construction manpower employed cannot be eventually utilised during the operation stage. There are, however, certain trades in areas like electrical and mechanical engineering and instrumentation where persons engaged during the construction stage may be retained and utilised for the maintenance functions in the operating steel plants. While in some other countries, construction manpower may prefer to specialise in their own trade and may be willing to move out to other areas for jobs, such mobility does not obtain in this country, particularly in the face of the un-employment problem. In the earlier stages of HSL, all construction manpower - who are normally taken in a temporary capacity - were gradually dispensed with once the construction phase was over. But later experience has proved that such a course of action is becoming increasingly difficult and pressures develop for absorption of all construction personnel in permanent jobs. It is, therefore, suggested that there should be an integrated manpower policy to ensure a smooth transition from the construction to the operation stage. Project managements will have to ensure that such of the construction personnel who can be eventually absorbed in the operation stage are taken with proper minimum qualifications at the time of recruitment in construction. In addition, they may also have to undergo orientation training before absorption into permanent jobs. In order to facilitate a smooth transition, the percentage of matriculates admitted to the ITIs will have to be enhanced so that such personnel with minimum qualification can be taken in during the construction stage.

3.6.8 In this as in other matters we shall have to resist the temptation of giving training plans saturation coverage one day and forgetting them the next.

#### 4.0 ACTION PLAN FOR THE FUTURE

4.1 It will be obvious, therefore, that the whole operation of getting trained manpower for the steel development programme requires an integrated manpower and training policy. This will include preparation of job specifications for various posts which would guide the recruitment process. In addition, a proper plan of age-matrix, as mentioned earlier, has to be followed, for the injection of employees at different levels either as experienced or as fresh recruits. Career plans for different categories of employees will also have to be worked out. Only by such advance planning would it be possible to meet the employees' legitimate aspirations for advancement and, at the same time, maintain a competent

workforce. Such a career plan may take into account the following:

- i) to provide, as far as is practicable, regulated growth for all categories of employees;
- ii) to plan growth within the employees' own section so that over the years he develops expertise;
- iii) to allow mobility to other sections to provide breadth of experience without dilution of skills;
- iv) to ensure, as far as possible, similar growth range for different categories of staff.

4.2 Such duly approved plans should be well publicised. Promotions from one category to the other should be subject to undergoing necessary training and passing specified tests where required. Care should be taken to introduce such systems in the early stages of the organization so that they become the accepted tradition in the organisation. Employee development and improvement of career prospects should be made possible by providing facilities for training outside the working hours. Trade-test specifications should be drawn up specifying the skills and knowledge requirements for different posts and a system should be worked out for objective implementation of such tests.

4.3 For reasons already indicated, it would be desirable if a central recruiting agency, under the Steel Authority of India Limited (SAIL), undertakes the responsibility for recruitment of graduate trainees and executive trainees for all the steel plants and the trainees are selected on an all-India basis.

#### 5.0 PROSPECT AND RETROSPECT

5.1 It is not claimed that this exercise is comprehensive and free from omissions. Many of the assumptions made would have to be reviewed and modified as the years go by but for the first time, consequent to the setting up of SAIL, a planning exercise of this magnitude has been attempted for determining manpower and training requirements for growth. Much of its success will depend on the active cooperation of the workers and the trade unions.

5.2 In this area, during the last three years, the steel industry was not satisfied by merely setting up joint councils and joint committees in its plants. During periods of shuttlecock diplomacy when it was convenient for employers to explain away poor performance as due to inter-union rivalry, and unions countered with an attack on managerial inefficiency, this industry, with great foresight, set up in 1969 the Joint Wage Negotiating Committee, now known as the Joint Negotiating Committee (JNC) for the steel industry. With its 19 members representing

so many apparently conflicting interests and ideologies, had the continuance of its existence been left to an opinion poll or a scholarly forecast, the JNC idea would have been aborted promptly on grounds of impracticality due to the traditional bogey of inter-union rivalry. But employers as well as workers doggedly pursued this concept and insisted on setting up this bi-partite committee against the advice of prophets of gloom. There were difficulties aplenty in the beginning. But the success achieved by this committee in so short a period in arriving at a comprehensive industry-wide agreement is now a broad silver-lining on the hitherto gloomy horizon of industrial relations in India.

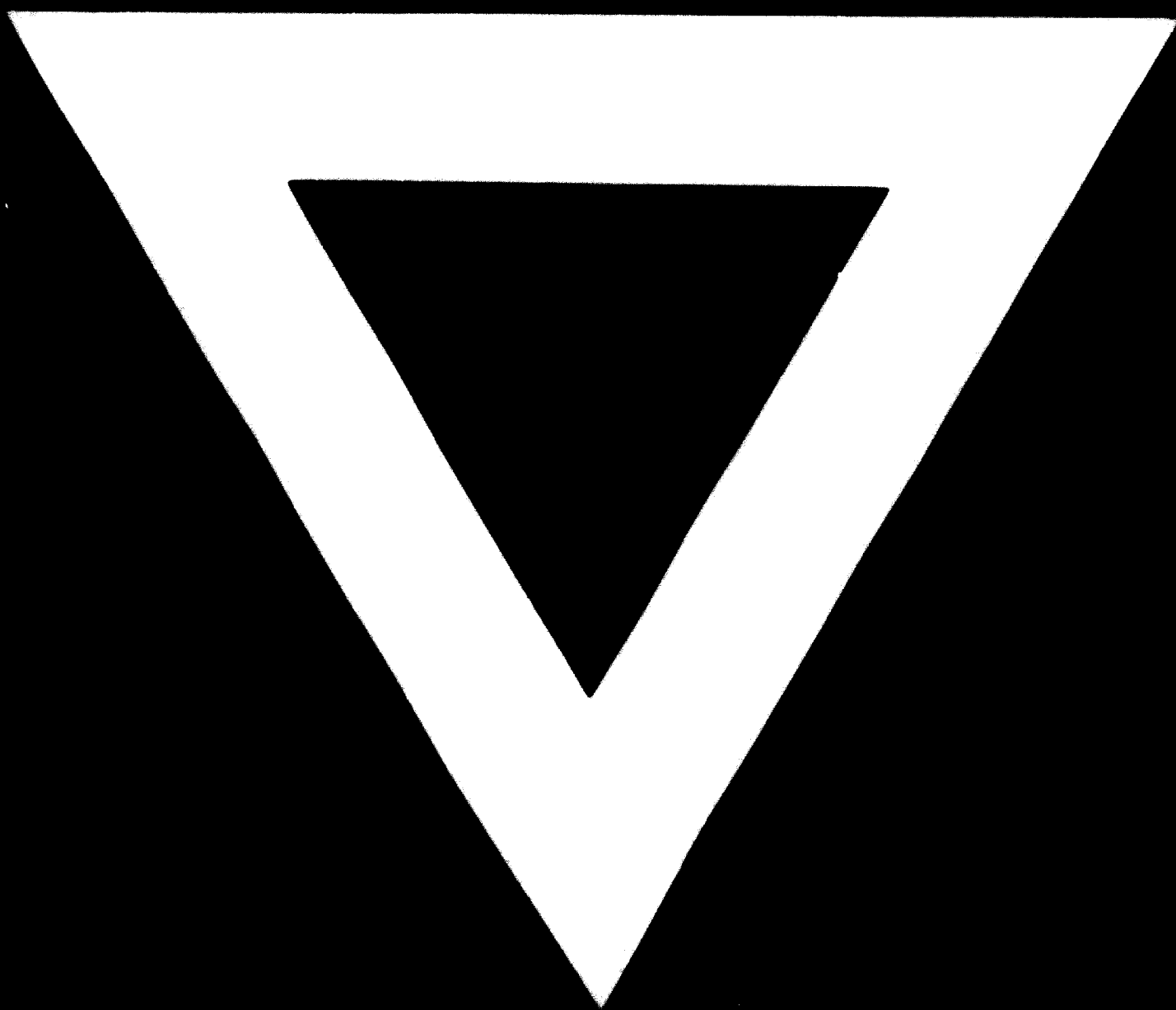
5.3 Institutions such as these are delicate new avenues which need to be nurtured and encouraged during their formative years. This was done in ample measure by the late Shri S. Mohan Kumaramangalam, Union Minister of Steel and Mines. When workers' participation was still in the slogan stage, he gave prime status to this joint body, associated himself actively with its deliberations, and used it as a sounding board and a national advisory council for the steel industry as a whole. In February 1973, he took a bold step by requesting the Joint Negotiating Committee to set the national target for steel production in each unit in 1973-74, instead of the management or the ministry doing it unilaterally as hitherto. The Joint Negotiating Committee, strong in its belief that workers' participation begins at the grass-roots level, arranged for setting of targets to be done jointly with workers and management, as a chain reaction commencing right from the sectional level on the shop-floor in each steel plant and culminating with their integration at the level of the Committee. The task was completed by the Committee only a few days ago. It may be argued that the gap between expectations and outcome is very wide; that the targets fall short of installed capacity. True, our past failings have been many, and we have to cope with the residue of several decades of public doubt. But this is the first time in the history of Indian Industry that workers and managers in different units have integrated from the shop floor upto the apex level in jointly setting goals for a major sector of the economy.<sup>6</sup> There is no doubt that this Committee will play a leading role in planning and executing the growth of the steel industry in the next two decades.

5.4 Ideas have a way of expiring with the spirit that produces them. The planning group and the task force have indicated a plan. But planning cannot just be a vade mecum word for cosmetic display. The need, in India as in all developing countries, is to implement the plan over the years. In a culture where everybody is rushed into doing things, the long-range is often by-passed by the immediate. What may seem urgent now takes priority over what is important for the future so that what is important for the future will be done only when it becomes urgent and then, it may be too late. The job of our planners will be like the River of Heraclitus, - never the same from one period to another - but that merely calls for modification and not abandonment of the planning process. Kerala lies the challenge of coping with endemic ferment and accelerating change.

#### REFERENCES

1. IISI, World steel by Figures 729 25 Ranking steel producing countries
2. Ibid
3. Kumaramagalan, S.M., New Model for Governmental Administration of Industry. Mainstream Publication.
4. Ibid
5. Government of India Planning Commission, Approach to Fifth Plan 1974-75
6. Billisoria R.P., "The Breakthrough", Xavier Labour Relations Institute, Jamshedpur, March 1973





**9 . 8 . 74**