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PLANNING IN INDUSTRIAL ENTERPRISES IN CHINA, 1951

[Comment: The following report gives a summary in outline form of the book entitled Kung-yeh Ch'i-yeh ti Chi-hua Kung-tso (Planning in Industrial Enterprises) published by K'o-hsueh Chih-shu Ch'u-pan-she, Peiping, April 1951.]

Introduction

After the Planning Conference of the Ministry of Heavy Industry, held in July 1950, the industrial plans for 1951 were drawn up with the assistance of Soviet specialists. Plan implementation began at the mines and factories under the jurisdiction of the Ministry of Heavy Industry. This was an experiment in adapting the Soviet plan system to the present situation in China. Soviet national economic plans were used as reference material for drawing up the industrial plans for China.

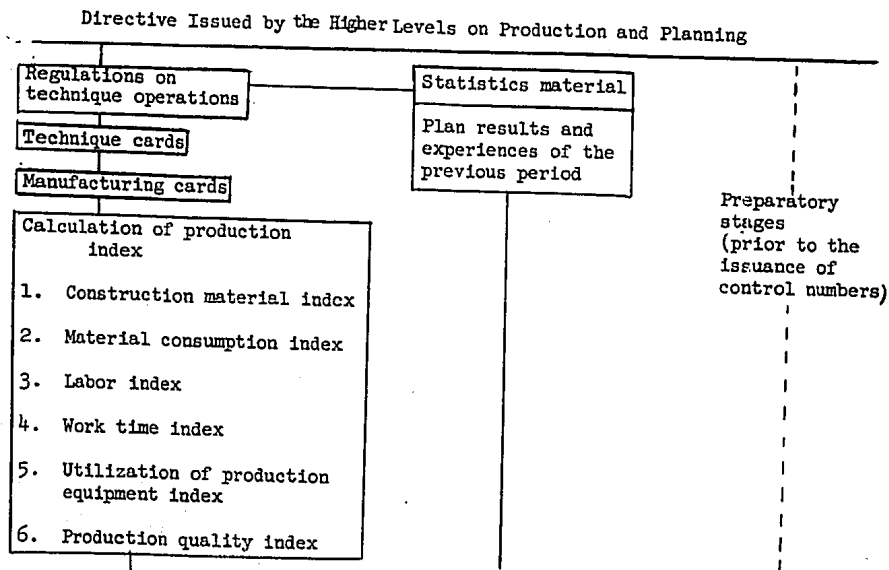
Section 1. STRUCTURE OF INDUSTRIAL ENTERPRISE PRODUCTION PLANSA. Technical Industries' Financial Plans for Industrial Enterprises

Industrial production plans should be designated "technical industries' financial plans." These plans used technical and economic calculations as a basis and include the index and standard of production and business transactions in the complete structure.

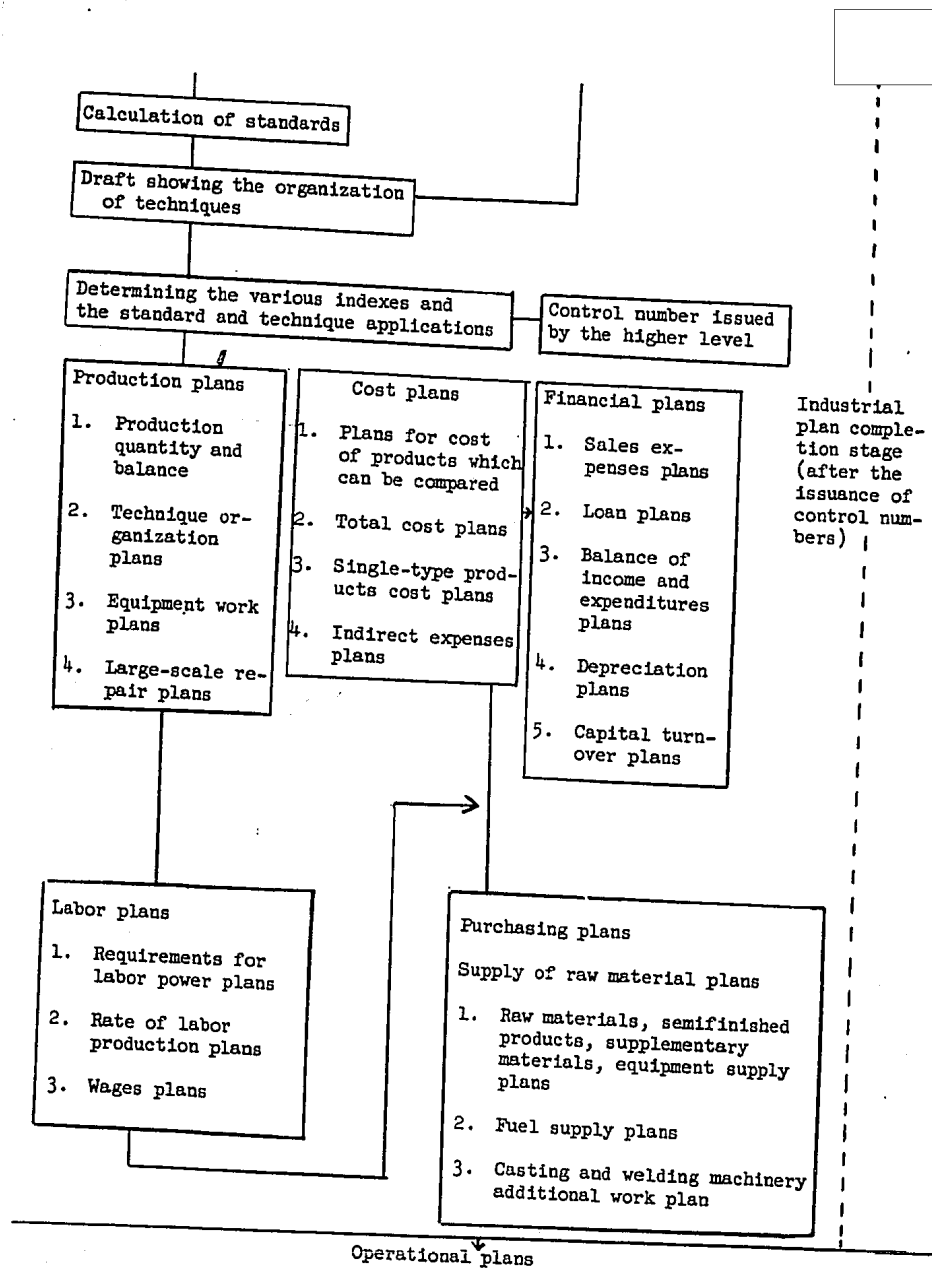
B. Organization and Plan Procedures of Industrial Production Plans

The following charts show the stages in the organization and plan procedures of industrial production plans:

Chart 1. Organization and Plan Procedures
of Industrial Production Plans

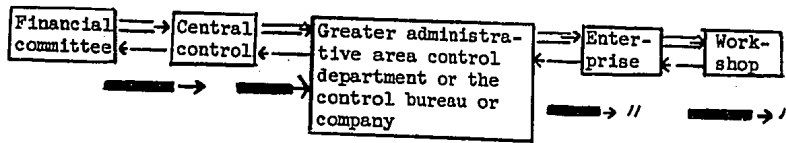


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Chart 2. Industrial Production Plans
in Relation to the Entire System



- ← == indicates the responsibilities in production of organizations under control, directives in planning, and control numbers
- ← — indicates the revisions given by the higher levels after inspection of plans
- ← ■ indicates approval given by the higher levels for action

Control numbers indicate the following considerations:

1. Calculation of total production value in fixed prices
2. Calculation of commodity production value according to prices of commodities leaving the factory
3. Calculation of production quantity according to actual production
4. Large-scale repair
5. Enlarging of enterprises and basic construction projects
6. Number of workers and the labor production rate
7. Wage funds
8. Warranty standards on raw materials, fuel, and semifinished products
9. Budget on income and expenditures
10. Rate of lowering production costs
11. Calculation of profits

Section 2. BASIS FOR PLANNING

CHAPTER I. REGULATIONS ON TECHNIQUE OPERATIONS, TECHNIQUE CARDS, MANUFACTURING CARDS, AND TECHNIQUE CALCULATIONS

A. Regulations on Technique Operations

These regulations show the procedures of production operations; the handling of raw materials and semifinished products; the quality, standard, and quantity of finished products; work organization and explanation of techniques during operational procedures.

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B. Technique Cards

Technique cards are standardized cards giving detailed descriptions of each production procedure.

C. Manufacturing Cards

Manufacturing cards are standardized cards which include content and procedures of operations; function of equipment; time required for each procedure; and demand for precision, characteristics, and quality of output or semifinished products

D. Technique Calculations and Record

These are set up by using the shop records as the basis. Therefore, the technique calculations and record must take the following principles into consideration: mapping plans for the following year and revising plans for the current year; using the records as statistical material; providing guidance material for production and techniques; and providing material for plan inspection of production summary.

CHAPTER II. PRODUCTION INDEX AND STANDARD**A. Production Index**

There are five things to consider in mapping production plans: labor (workers, cadres), production equipment (machinery, working areas), materials (raw materials, supplementary materials, water power, electric power, etc.), products (principal products, secondary products, quantity and quality), and sales (contracts, orders, free market, deliveries, and reserves). The production index takes and compares these five items.

B. Production Quality Index, Rate of Finished Products, Rate of Rejected Products

The production quality index compares one type of content of products with another.

C. Utilization of Production Equipment Index and Production Quantity Index

The utilization of the production equipment index and the production quantity index is designed to show the relationship between one piece of equipment and another, between material and products, between equipment and products, between products and the time factor, and between products, equipment, and the time factor.

D. Work-Time Index

The work-time index shows the distribution of time during the production process.

E. Labor Index

The labor index shows the rational utilization of labor power, rate of production, labor costs, and wage index.

F. Consumption Index

The consumption index shows the consumption of raw materials, supplementary materials, manpower, etc., during the production process and thus shows the degree of costs and the advantages and disadvantages of production management.

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G. Standard

The following chart shows how the standard is determined from the index:

Chart 3

<u>Production Index</u>	(Analysis, Comparison, Research, Decision, Approval)	<u>Standard</u>
Quality Index	----->	Quality standard
Utilization of produc- tion equipment index	----->	Utilization of equipment stand- ard
Production quantity index	----->	Production quan- tity standard
Work-time index	----->	Work-time stand- ard
Labor standard	----->	Labor index, per- sonnel standard
Consumption index	----->	Consumption stand- ard

Section 3. INDUSTRIAL ENTERPRISE PRODUCTION PLANS

CHAPTER I. PRODUCTION PLANS

Production plans include production quantity and its balance, technique organization plans, and equipment work plans. The aims of production plans are to reveal quantity, quality, value, and improvement of products; improvement of techniques and increase of production capacity; combination of production processes; and utilization and quota of production equipment.

A. Production Quantity and Its Balance

The following four factors must be considered: (1) quality standard of products; (2) amount, value, and balance of finished products, semifinished products, unfinished products, and artistic work; (3) comparison of production results of the current year and the preceding year; and (4) fluctuations of production capacity.

B. Technique Organization Plans

Technique organization plans include (1) a plan for the improvement of techniques and the testing of new products; (2) a plan for material consumption and working hours; and (3) a plan for balancing the total amount of semifinished goods or rejected goods.

The plan improvement for techniques and experiments includes (1) mechanization of the production process, (2) improvement of the work process, (3) increase of equipment, and (4) utilization of certain rejected goods and material.

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The experimental work plan includes (1) estimate and technique research, (2) manufacture of experimental articles, (3) inspection and testing of experimental articles, (4) installation of special instruments, models, and equipment, and (5) planning the manufacture of products.

C. Equipment Work Plans

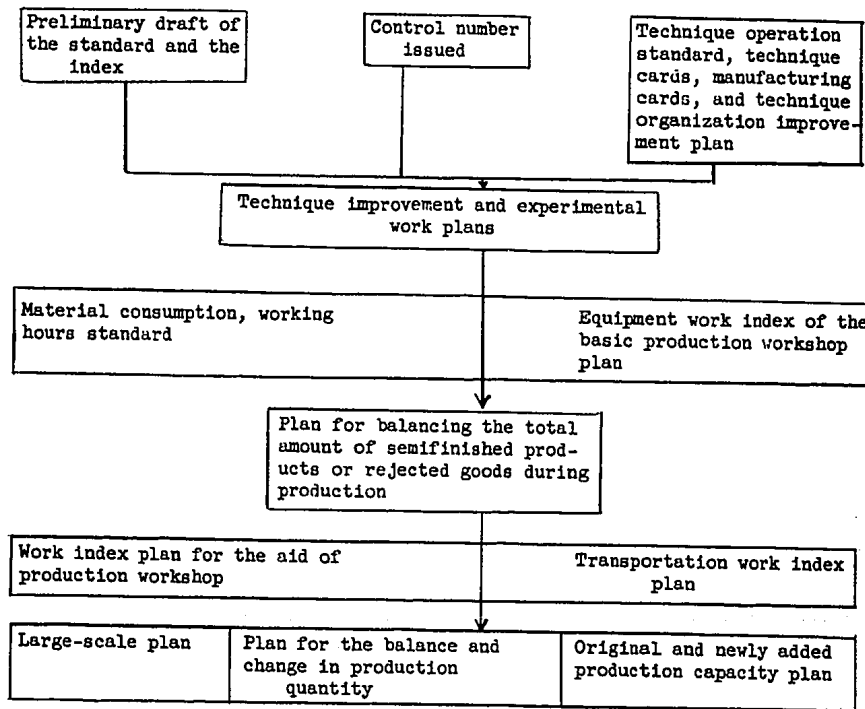
Equipment work plans include (1) the comparison of the production capability of the equipment and the production capability needed to complete the production, (2) the utilization of the equipment, and (3) the combination of the production process.

D. Large-Scale Repair Plans

Large-scale repair plans include the following: (1) Production Department -- repair of warehouses, public utilities equipment, construction connected with production, mechanical equipment, power equipment, and transportation equipment; (2) Nonproduction Department -- residences and public works equipment.

E. Production Plan Chart

Chart 4. Production Plan Chart



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CHAPTER II. LABOR PLANS

Labor plans include (1) labor production rate plans (2) labor requirement plans, and (3) wage plans.

A. Labor Production Rate Plan

Factors affecting the labor production rate are (1) the technique and political levels of the workers, (2) the technique level of production, and (3) labor organization and production organization.

A hypothetical analysis of the labor production rate is shown in the following table:

<u>Item</u>	<u>Basic Period</u>	<u>Report Period</u>
Average labor production rate per hour	50 kg	57 kg
Average actual work-hour period per workday	7.8 hours	7.9 hours
Average labor production rate per day	390 kg	450 kg
Average number of work-days per month	25 days	19 days
Average labor production rate per worker in one month	9,750 kg	8,500 kg

B. Labor Requirement Plans

The labor force is classified as follows: (1) production personnel -- includes those who participate in production, apprentices, engineers, management personnel, maintenance personnel, and police guards; (2) nonproduction personnel -- railway workers, cultural and health workers, educational workers, special workers, and survey team workers.

C. Wage Plans

The wage plan is divided into (1) time wages, (2) overtime wages, (3) piecework wages, (4) overtime on piecework wages, (5) progressive piecework wages, and (6) guarantee work system.

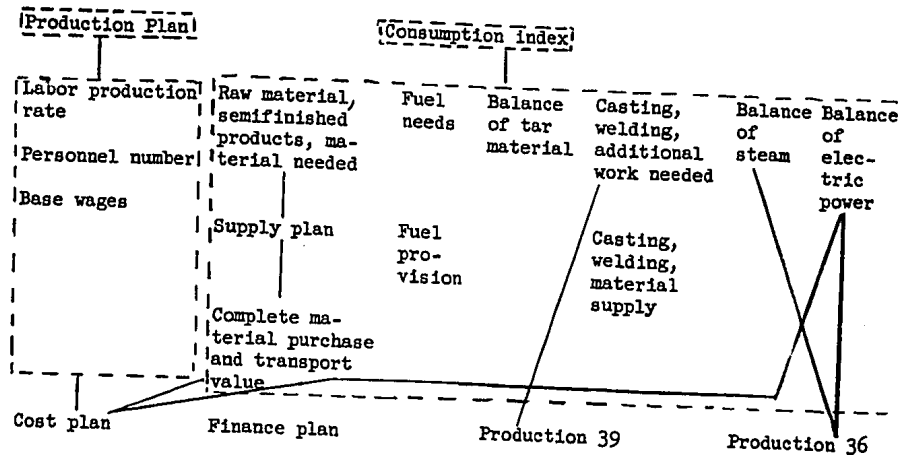
CHAPTER III. RAW MATERIAL SUPPLY PLAN

Raw material supply plans include (1) plan for the quantity of raw materials, important materials, additional materials, semifinished products, and construction materials; (2) plan for the provision and supply of fuel; (3) plan for casting and metallic ore; (4) plan for the purchase and transportation of material.

The following chart shows important features to be observed in estimating production and consumption in an industrial enterprise.

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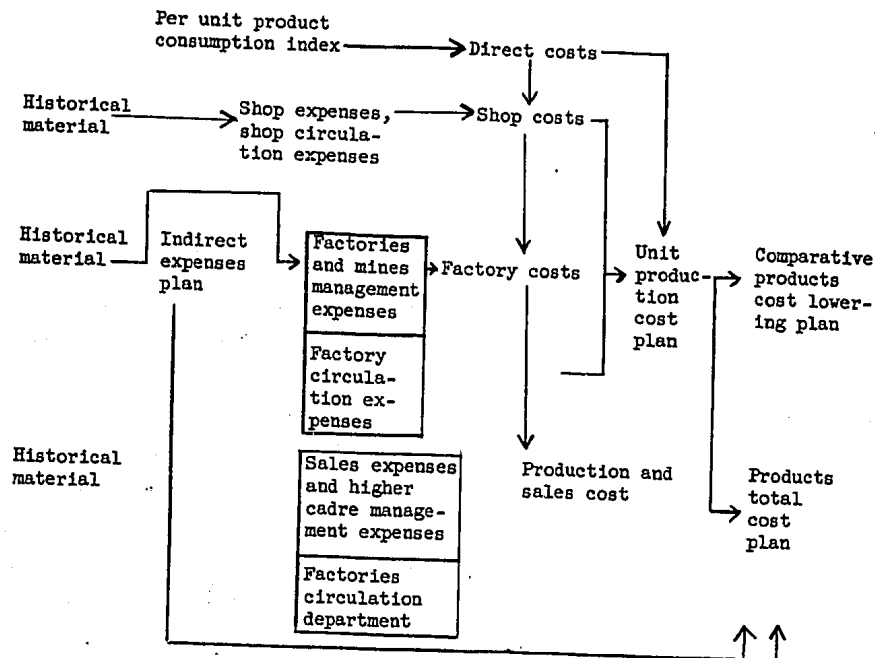
Chart 5



CHAPTER IV. COST PLANS

The four types of cost plans are (1) indirect expenses plans, (2) production costs plans, (3) total cost of production plans, and (4) comparative commodity cost lowering plans.

Chart 6. Mapping of the Cost Plan



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CHAPTER V. FINANCIAL PLANS

In mapping out the financial plans, there must be an indication of capital for enterprises. The organization of the financial plans include the following:

A. Calculation of Sales and Purchases

To calculate the sales and purchases of products, one must calculate the profit and loss of goods. Besides the production, the sale of excess material and material maintained after clearing the fixed capital must be calculated into the receipt and expenditure of product sales and purchases.

B. Calculation of Depreciation

The depreciation of fixed property is calculated by adding the value of fixed property to the value of the newly increased rate of fixed property and subtracting the value of the fixed property which cannot be used during the planning period.

C. Calculation of Necessary Turnover Capital

Turnover capital includes turnover funds and circulating funds. Items which must be calculated are important material, additional material, parts, equipment, consumer goods, and fuel.

D. Loans Plan

Enterprises can borrow either from the bank or from the state.

E. Basic Construction Investment PlanF. Receipts and Expenditures Balance Plan

Expenditure planning includes business expenditures and expenditures to the government. Income planning includes business income and funds from the government. The income and expenditures must balance.

Section 4. THE ENTERPRISE PLAN WORK ADMINISTRATION AND INSPECTION

CHAPTER I. THE ENTERPRISE'S PLAN ORGANIZATION AND ITS RESPONSIBILITIES

The special features of the enterprises are (1) independence of government, and (2) a unified system for the technique and production of workshops.

The important work of the enterprises is to increase production, increase the quality and labor production, increase fixed capital, use fixed capital, eliminate unnecessary expenditure of capital, lower costs, increase enterprise profit, and increase the circulation of circulating capital.

A. Management System of the Enterprises

There are three types of management systems:

1. The direct management system -- all responsibilities are administered by one leader.

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2. The division of responsibilities management system -- a system whereby there are many higher leaders, and the system provides opportunity for the leaders to give guidance.

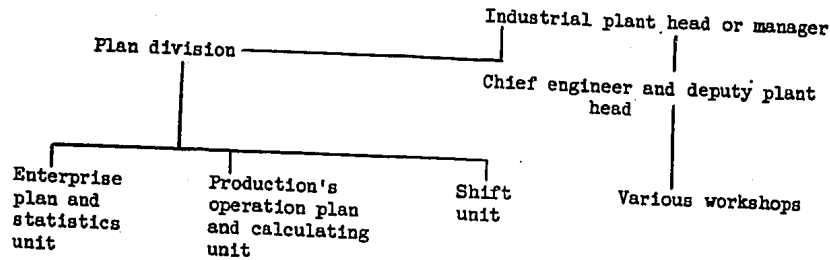
3. Production local management system -- the organization is such that each department (enterprise, workshop, and work unit) has a leader.

B. Management Organ of the Enterprises

In industry, the management organ is affected by the following features:

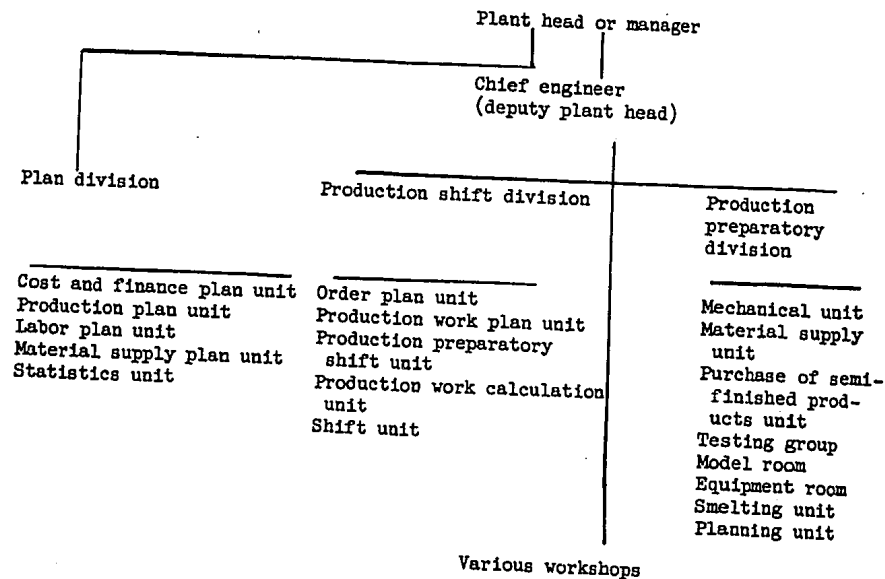
1. Type of production, such as (a) individual production, (b) continuous production, and (c) complete production
2. Production scale, such as (a) production quantity, and (b) number of personnel
3. Specialization of types of products, organization of production, and specialization of shop work
4. The detailed procedure of manufacturing
5. The technique of production

Chart 7. Plan Organization for Small-Scale Machinery Enterprises



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Chart 8. Plan Organization for Small- and Large-Scale Enterprises



CHAPTER II. OPERATIONAL PLANS

The operational plan serves five functions:

1. It must combine the entire operational system into the enterprises.
2. It must develop the capacity of the equipment, conserve raw materials and labor, and suit the principles of economic calculation by developing advanced technical processes.
3. It must control production management and adjustment work.
4. It must combine the systems and standards of factories.
5. It must fit in with the enterprise production system and, in accordance with the order forms, guarantee the completion of plans.

A. Basic Documents of the Operational Plans

1. Operational Standard of Production Techniques -- includes the standard of products, quality of material, working time, etc.
2. Detail Standard of Products -- the standard of products is affected by the operations.
3. Work Process Card -- gives the steps and time of operation.
4. Equipment Technique Management Standard -- shows the use of equipment.

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5. Technique Cards -- show shop work.
6. Technique Safety Regulations -- no operational method can violate the technique safety regulations; and at the same time, the operational plan must be administered during regular production.
7. Technique Organization Administration Laws.

CHAPTER III. ANALYSIS AND INSPECTION OF PLAN ADMINISTRATION

A. Inspection Plan

The statistical chart, shows production, labor, and cost plans.

To indicate inspection, the technique must be analyzed. From this type of analysis, the utilization of equipment, labor power, and raw material should be applied. The technique report must reveal the following:

1. Amount and utilization of equipment
2. Production power of each piece of equipment per hour, per shift, working day and night, calendar day and night
3. Equipment working time
4. Time for stopping work and reasons for stopping work
5. Type and amount of raw material used
6. Additional material used during the planning period
7. Amount and cost of products
8. The balance of commodities during the manufacturing process
9. Consumption of fuel and power
10. The effective use of equipment

Work process of inspection:

1. First step
 - a. Finding the present situation as to aims and plans
 - b. Completion of working steps
 - c. Completion of amounts, quality, type, standard, and cost of products
2. Second step
 - a. Reasons as to the completion of a product or completion of individual shop work
 - b. Finding the reason why shop work is not completed

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- c. Balance of weekly, 10-day, monthly, and seasonal production
 - d. Production power is not sufficient in newly constructed enterprises
 - e. Utility of equipment is not completed
 - f. Standard of material supply is not up to par, changes in techniques, difficulty in transportation, increase of rejected goods, etc.
 - g. Insufficient labor force, lowering of efficiency rate, difficulty in workers' living conditions, sickness and illness, resignation of workers, etc.
 - h. Economic index technique and system unbalanced
 - i. Planning is not uniform

Section 5. BASIC CONSTRUCTION PLAN OF INDUSTRIAL ENTERPRISES

A. Ideas of Basic Construction

The actual effect of basic construction is as follows:

- 1. Increase the number of products
- 2. Raise the quality of products
- 3. Raise production power
- 4. Lower production costs
- 5. Increase capital circulation
- 6. Improve the welfare of the laborers
- 7. Eliminate the import of foreign loans and conserve foreign exchange

B. Steps in Mapping the Basic Construction Plan

The important plans of basic construction include:

- 1. Types of construction and types of products
- 2. The planning of production power
- 3. Construction area
- 4. Use of the newly constructed departments

According to plans, the following shows process planning:

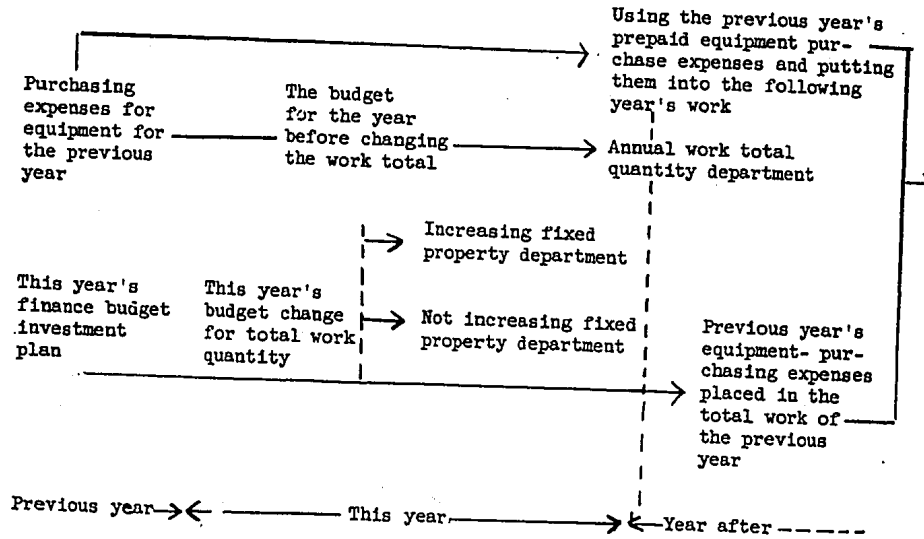
- 1. Preliminary estimate
- 2. Technique estimate and budget
- 3. Work blueprints

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C. Calculating the Basic Construction Plan

1. Construction engineering -- including temporary construction and work, reconstruction and enlargement of engineering operations, reconstruction work on telegraph and telephone lines which include electric operations, health engineering equipment and putting up electric light lines, construction of basic machinery, mapping construction area, preparing construction work
2. Installing construction -- temporary or permanent enterprises and industries, power, weight-lifting, and transport equipment
3. Machinery equipment, instruments, and purchasing of products
4. Estimate survey, geological survey, and scientific study
5. Production organization
6. Increase of fixed expenses
7. Expenses which cannot be refunded
8. Temporary management expenses for construction

The Entire Plan is as follows:



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