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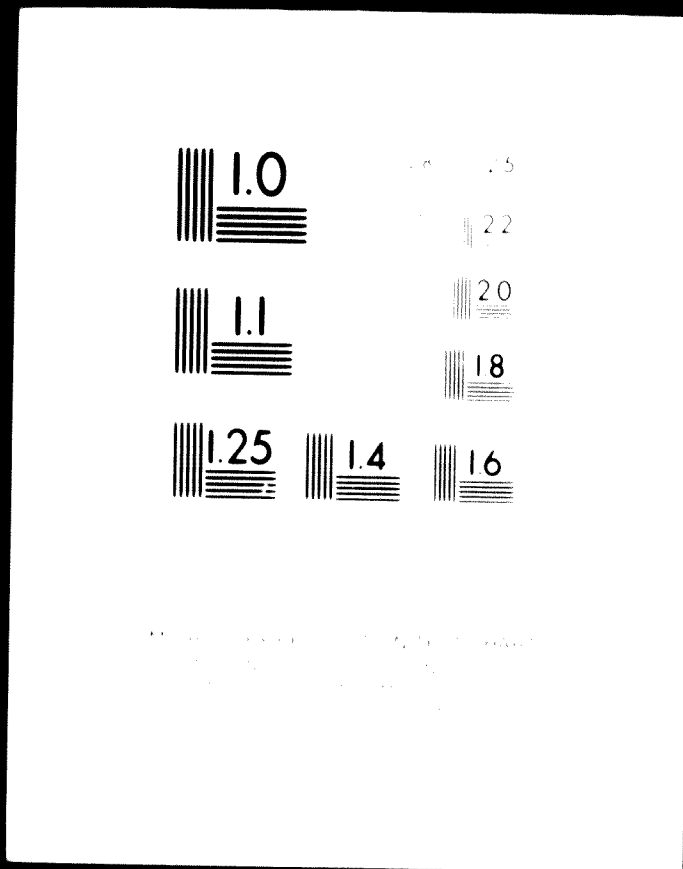
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01054

FINAL REPORT

COST ACCOUNTANCY FOR
IRON AND STEEL INDUSTRY
Chimbote, Peru

BERENSCHOT BOSBOOM B.V.

516 1 130

DECEMBER 1972

ES

COST ACCOUNTANCY FOR
"INDUSTRIA DE HIERRO Y ACERO "SIDERPERU""

Chimbote, PERU

516/1/130

December 1972

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APPENDIX: THE IMPORTANCE OF COST CONTROL

CONCLUSIONS

The Cost Accountancy system as applied by "SIDERPERU", complies with the generally accepted accountancy standards in respect to cost calculation in steel manufacturing concerns. The system adopted is the direct cost system. The accountancy data and information obtained enable to gather a reasonably accurate opinion on the financial position in compliance with auditing and control principles.

The information is supplied within a normal time delay: two weeks after the end of the month. Statistical data are fairly abundant but they do not result in a good information processing.

Cost control is still obtained in an incomplete and too static form, so that a quick and conclusive appraisal of the operation of the concern is not possible. Such as it is, it is not a "tool of management". An analysis is required to take immediate action. The historical analysis, which is presented, as compared with budget data, lacks dynamic appraisal. The information reaching the responsible parties of the production is not an incentive for really acting with "cost consciousness".

In order to obtain a higher productivity, it is essential to promote plain control systems but with direct impact and to stimulate a "cost philosophy" based on promotion, while the goal always remains the optimal utilization of the resources made available to the Concern.

In order to achieve this goal, a narrow collaboration between the accountancy staff of the Cost Department and the engineers of the Production Departments is imperative. For this purpose, the exact interpretation to be given to the information supplied to the interested parties will be indicated.

The information and the analysis of the production results should not be interpreted in any confused or negative way. Moreover, useless administrative work will be avoided.

The Management will receive daily, weekly and monthly charts, many of which in graphic form and indicating: Production levels, Production standards, Standard costs and their relative variations. The cost control will essentially be performed as an exception from standards.

It will be indispensable at short notice to give a specialized training to the persons and technicians in charge of cost control. Due to the fact that such persons will have to perform most of their work in the plant, it is imperative for them to have a perfect knowledge of the production process.

We insist that these costs controllers will do their work in the actual costing division of the plant itself and not in a separate accounting division of the production department. This means that the costing control should be carried out at the lowest level of operations if it is to be efficient.

During our stay in the Concern, we have had the opportunity of giving lectures to the senior staff and medium level staff. The latter referred more particularly to cost control and financial analysis (see appendix).

No cost system, however good, will reduce costs or improve the economical results of the Concern unless it is actually used for measuring and controlling the efficiency.

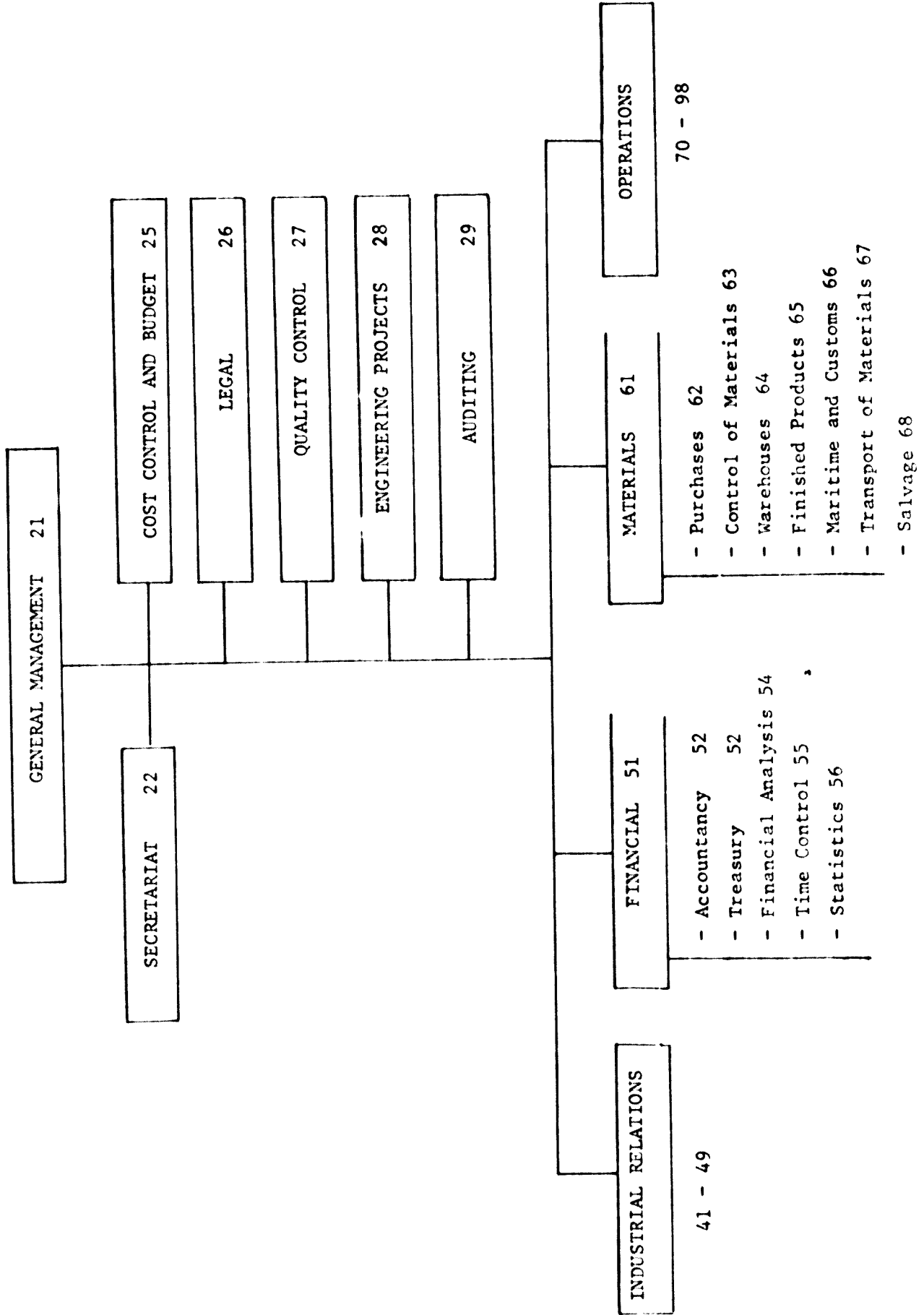
1. INTRODUCTION

- 1.1 The cost system now in use was introduced gradually since 1960 and is inspired for the major part by the cost system applied in similar North-American and Chilean plants.
- 1.2 It consists in calculating a separate cost for every manufacturing process, while making a clear distinction between the cost of the raw materials used and the manufacturing cost. Both for raw materials and manufacturing costs, a cost per produced ton is calculated. By adding both, the total cost per ton of the finished or half-finished product is obtained.
- 1.3 Only the direct costs incurred during the process, increased by the direct assigned services, are considered as manufacturing cost. The total cost does not include the following items: Depreciations, Financial Costs and General Administration Costs. Therefore the adopted system can be termed as "direct costing".
- 1.4 Finished and half-finished products are inventorized at direct cost. Half-finished products are transferred to the following processes on the basis of direct average cost, as shown by the monthly valorized inventories.
For balance purposes the inventories of finished and half-finished products are also appraised at direct average cost. In future a clear distinction should be made between finished and half-finished products for cost evaluation purposes.
- 1.5 Before tackling the accounting processes, some comments should be made regarding the Organization Chart and the Plan of Accounts of the Concern's Cost Accounting.

2. ORGANIZATION CHART

- 2.1 We are reproducing in a summarized and partial form the Concern's Organization Chart, as approved by the Top Management and which is still in force. We are merely reproducing the part referring to the operational centre of Chimbote. The codes pertaining to the Production Accounting Plan appear next to the Cost Centres.
- 2.2 There is a job description which is revised from time to time for the purpose of establishing job appraisals.
- 2.3 The Organization Chart clearly shows the importance which the Top Managers have given to the Cost and Budget Control Department, which they consider as a staff function directly under the General Management.

OPERATION CENTER - Chimbote



3. PRODUCTION ACCOUNTING PLAN

- 3.1 A new Accounting Plan was worked out and introduced on the first of June 1972. The restructuration of the old plan was justified by two imperative motives: A more adequate adaptation for data processing by the computer and the startup of new manufacturing processes.
- 3.2 The products Accounting Plan is entirely separated from the Accounting Plan of the General Accountancy (Balance sheet and Loss and Profit Statement).
- 3.3 The production Accounting Plan makes a clear distinction between the "cost centres" or responsibility centres and the various "cost headings" viz. expenditure by nature.
- The "cost centres" answer two criteria:
 - . Where did the cost occur?
 - . Who accepted the responsibility?
 - The "cost headings" indicate the class of the incurred costs.
- 3.4 The Cost Accounts Centres have five digits. The first digit indicates the operation centre, in this instance the Chimbote operation centre = 0, and the Lima office = 1. The following digits indicate a production centre, a manufacturing process, an auxiliary department of manufacturing or administrative services. The last digits indicate the sub-division within a main centre, whose responsibilities however can be determined and delimited.

3.5 In the form of a summary, we are showing below the Plan of Accounts with its four last digits without itemizing the two last ones.

<u>Account Number</u>	<u>Responsibility Centre</u>
	<u>Lima Office</u>
1100	Board of Directors
1200	General Management
1300	General Secretariat
1400	Administration
1500	Planning and Development
1600	Materials
1700	Finance
1800	Sales
1900	General Expenses
	<u>Chimbote Operational Centre</u>
2100	Management
2200	Executive Secretariat
2400	Overhead Expenses
2500	Cost and Budget Control
2600	Legal
2700	Quality Control
2800	Engineering Projects
4100	Industrial Relations

<u>Account Number</u>	<u>Responsibility Centre</u>
	<u>Chimbote Operational Centre</u>
4200	Personnel
4300	Training
4400	Safety and Industrial Health
4500	Pay-roll Administration
4600	Communications
4700	Labour Relations
4800	Assistance and Social Welfare
4900	Various Industrial Relations
5100	Finance
5200	Accountancy
5300	Treasury
5400	Financial Analysis
5500	Time Control
5600	Statistics
6100	Materials
6200	Purchases
6300	Control of Materials
6400	Warehouses
6500	Finished Products Warehouses
6600	Maritime and Customs
6700	Transport of Materials
6800	Salvage

<u>Account Number</u>	<u>Responsibility Centre</u>
	<u>Chimbote Operational Centre</u>
7000	Operations
7100	Foundry
7200	Iron Plant
7300	Steel Plant
7400	Rolling of Commercial Products
7500	Rolling of Flat Products
7600	Hot Rolling
7700	Cold Rolling
7800	Galvanized Products and sheets
7900	Finished Products Depot
9100	Technical Services Department
9200	General Workshops
9300	Refractories
9400	Automation and Instrumentation
9500	Transports
9600	Auxiliary Services
9700	Electro-Mechanical Maintenance
9800	Civil Works Maintenance

3.6 Sub-accounts or "cost headings" are indicated with three digits. The first digit indicates the nature of the expenditure; the two last digits specify the item or classification more in detail.

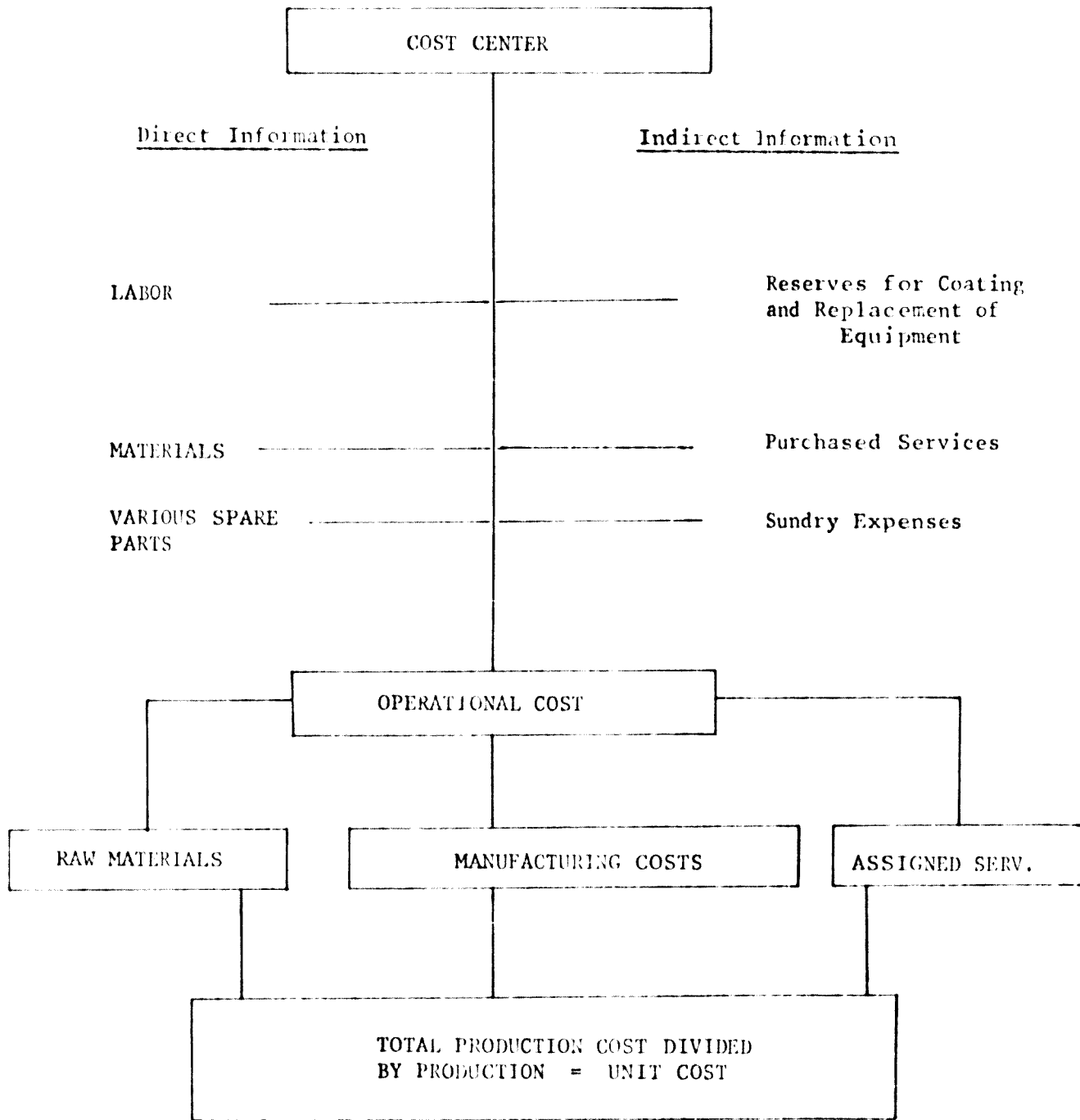
3.7 The cost headings in summarized form are:

<u>Sub-account Number</u>	<u>Cost Heading</u>
100	Normal salaries and wages
200	Salaries and Wages - Overtime
300	Various materials
400	Various spare parts
500	Reserves for Coating and Replacement of Operational Equipment
600	Purchased Services
700	Sundry expenses
800	Assigned Services
900	Raw materials

4. COST ACCOUNTANCY

4.1 Accountancy Information Flow

The information flow received from the various plant sections can be drawn up as follows:



4.2 Cost Diagram

The cost diagram shows the various processing stages of the accounting information.

4.2.1 The various components of manufacturing cost:

Labour

Spare parts and Materials

Deferred Costs

Operation Reserves

Transfer of Materials

Sundry expenses

go to:

Manufacturing Costs (direct cost element)

Inventories (transport and handling)

Overhead Costs (indirect costs)

Plant extension and work-orders (fixed assets)

Assigned Services (for appropriation to those mentioned above)

4.2.2. Raw Materials:

Raw Materials

Half-finished products (raw materials of following process)

go to:

Production Costs

4.2.3 Manufacturing costs

go to:

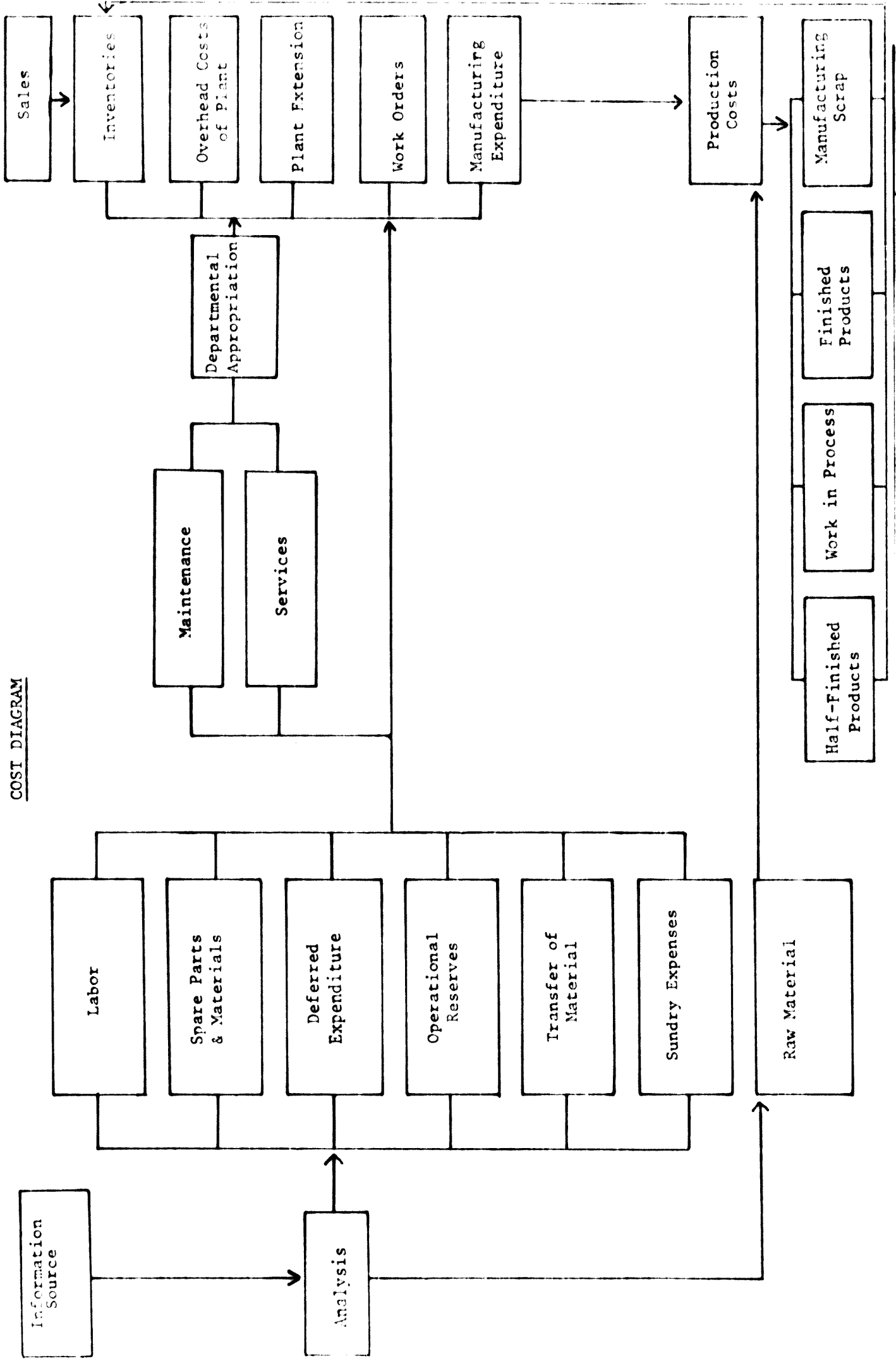
Production Costs

4.2.4 The Production Costs

go to:

Finished Products)	
Half-finished Products)	
Work in progress)	(inventories)
Manufacturing scrap)	

COST DIAGRAM



4.3 Sequence of works carried out by the Cost Department

- 4.3.1 The information (basic documents, production records, service distribution, etc.) coming from the cost centre, after having been analyzed by the responsible people of this centre, is sent to the Cost Department either directly or through the intermediary of other departments, as in the case of the Job Cards (Time Office).
- 4.3.2 In the Cost Department the basic documents are classified into cost headings and control is carried out in respect of the exact appropriation of the cost centre.
- 4.3.3 As soon as the basic documents have been analyzed and checked, they are passed on to the computer for processing (see data processing).
- 4.3.4 The Cost Department checks the appropriation of the maintenance and of the assigned services. The appropriation is calculated on the basis of production units (hours/men, Kwh, cubic meters, etc.) or in predetermined percentage. The computer calculates the amount of the various appropriations of the assigned services.
- 4.3.5 The computer supplies listings classifying the costs per "cost centre" and per "cost heading".
- 4.3.6 The Cost Department draws up the accounting entries which register the transfer of the manufacturing costs and of the raw materials to production costs, which in turn pass on to finished products, half-finished products, work in progress and manufacturing scrap.

- 4.3.7 Inventories of raw materials, finished products, half-finished products and manufacturing scrap are drawn up at the average price.
- 4.3.8 Inventories are calculated on the basis of the production records or warehouse incoming and outgoing vouchers whenever finished products are referred to.
- 4.3.9 The sales of every month are listed by the computer. The Cost Department checks the sales with the shipping documents and the outgoing warehouse vouchers.

4.4 Basic Documents drawn up by the Cost Department

As shown in the Cost Diagram and by the Sequence of performed work (see 4.2 and 4.3), the Cost Department draws up the following basic Documents:

4.4.1 Operation Cost Charts

are drawn up for every cost centre:

Production
Services
Maintenance
Administration

Production Cost Charts

are drawn up for every manufacturing process and include: raw materials, manufacturing cost and assigned services. These charts show separately the costs and expenses, the tons produced and the cost per ton. In both charts the budget data and budget variations are included.

The production cost charts are drawn up for the following processes:

Iron Plant	Elkem Furnaces Blast Furnace Ingot-mould machine
Steel Plant	Electric Furnaces L.D. Converters Ingot casting Continuous Casting
Bar Rolling	Blooming Mill Bar Rolling Wire Rolling
Foundry	Ingot mould and plates
Rolling Flat products	Duo-quarto Rolling Mill (as duo) Duo-quarto Rolling Mill (as quarto) Steckel Mill Oxipropane Cutting Line Pickling Hot Cutting Line Cold Reversing Quarto Rolling Mill Tempering Cold Cutting Line Continuous Calvanizing Line

We include an example of the used charts (in reduced form).

COMPARATIVO DE COSTOS DE SERVICIOS ASIGNADOS

	ELEMENTOS DEL COSTO	COSTO REAL		COSTO PRESUPUESTADO		VARIACIONES	
		MONTO EN SALD.	CUANT.	MONTO EN SALD.	CUANT.	MONTO	CUANT.
100	MANO DE OBRA - EMPLEADOS:						
101	Salarios básicos						
102	Bonificaciones						
103.04	Primas y otras						
105	Reservas y Leyes Sociales						
	TOTAL MANO DE OBRA - EMPLEADOS						
110	MANO DE OBRA - OBREROS						
111	Jornales básicos						
112	Bonificaciones						
113.14	Primas y otras						
115	Reservas y Leyes Sociales						
	TOTAL MANO DE OBRA - OBREROS						
200	MATERIALES Y SERVICIOS:						
201	Empleados						
202	Obreros						
	TOTAL SOBRETUENDOS						
300	MATERIALES VARIOS:						
301.9	Gases Industriales						
310	Combustibles						
311	Petróleos						
312	Lubricantes						
326	Materiales y reactivos de Laboratorio						
327	Materiales para tratamiento de agua						
356	Hierro y acero para usos especiales						
327	Soldaduras						
330	Tubos de ho negro						
340	Materiales Diversos de ferratería						
345	Materiales Eléctricos						
360	Materiales de Carpintería						
360	Materiales de Construcción						
361	Herramientas						
363	Suministros de seguridad						
365	Refractarios y afines						
370	Impresos y útiles de escritorio						
371	Materiales de Limpieza						
390	Otros Materiales						
	TOTAL MATERIALES VARIOS						
400	SERVICIOS VARIOS:						
	TOTAL SERVICIOS						
600	SERVICIOS CONTRATADOS:						
601	Alquiler de Vehículos						
602	Alquiler equipo pesado						
605	Energía C. P. S.						
690	Otros servicios varios						
	TOTAL SERVICIOS CONTRATADOS						
700	SERVICIOS POR CONTABILIDAD:						
790	Varios						
	TOTAL CARGOS POR CONTABILIDAD						
800	MATERIALES Y SERVICIOS:						
	TOTAL SERVICIOS ASIGNADOS						
	TOTAL GENERAL						

4.4.2 Control Accounts for Valorized Inventories

The functioning of these inventory accounts is described under 4.5.4.

4.4.3 Statistics and comparative cost information for Top Management, Management and Staff

These statistics essentially reflect the variations between actual cost and budgeted cost. They were submitted to the Top Management in July 1972 but unfortunately they merely covered the first four months of the year (January - April 1972).

4.4.4 Accounting Registers: In order to link up with the general accountancy, the Cost Department draws up the accounting registers (called "polizas") in order to enable the general accountancy to balance its inventory accounts and "costs" (account 5900)

The registers are:

Wages and Salaries

Reserves and Social Laws

Operational Reserves = Refractories and rolls

Spare Parts and Materials = outgoings from warehouse

Deferred expenditure

Ingot moulds and base plate movements

Distribution of operational costs: to products, to work in process, to reserves, to local sales costs, to general operation costs.

Transfer of production costs

Example :

Operational Cost Distribution:

OTHER CURRENT ACCOUNTS

FINISHED PRODUCTS

HALF-FINISHED PRODUCTS

RAW MATERIALS

REFRATORIES

IMPORTED FINISHED PRODUCTS

GOODS IN TRANSIT

JOB ORDERS IN PROCESS

Investments - Fixed Assets

Miscellaneous

OPERATION RESERVES

Heating furnaces

LOCAL SALE COSTS

Commercial products

Flat products

Half-finished Products

PLANT OVERHEAD EXPENSES

General Plant Administration
Trade Union Expenses
Extraordinary Cost Adjustments

PRODUCTION COSTS

Operation Costs

To:

COSTS TO BE ALLOCATED

Wages and Salaries
Social Security
Warehouses
Operation Reserves
C.P.S. Invoices
Miscellaneous

COMMISSION STATE

PROCESSES =

COMMISSION STATE	1951-1952		1952-1953		1953-1954		PERCENTAGE
	Amount in Sales	Cost/Ton	Amount in Sales	Cost/Ton	Amount in Sales	Cost/Ton	
1000							
2000							
3000							
4000							
5000							
6000							
7000							
8000							
9000							
10000							

10000

COMPARATIVO DE COSTOS DE PRODUCCION

PLANTA DE
 PROCESO

		COSTOS DE PRODUCCION		
		1950	1951	1952
MATERIAL DE CARGA				
901	Cable			
902	Pastilla			
903	Marcado de Margaritas			
910	Ferronagantes			
911	Espato Fino			
912	Caliza			
913	Caliza Medida			
914	Bolaxito			
915	Caliza gruesa			
916	Asbesto			
917	Ferros			
920	Ferros de Cuchara			
921	Ferros de Cuchara			
922	Caliza			
	Acabado Ingotes			
	Acabado Ingotes			
TOTAL MATERIAL DE CARGA				
COSTOS DE FABRICA				
	Chatarra			
	Ferros			
	Ferros y piezas			
TOTAL FABRICA				
COSTOS DE TRANSFORMACION				
100	Mano de obra Empleados			
101	Mano de obra Obreros			
102	Subcontratos			
103	Materiales Varios			
104	Repuestos			
105	Reservas de Aparatos			
106	Servicios Contratados			
107	Cargas por Contabilidad			
108	Servicios Asignados			
TOTAL COSTOS DE TRANSFORMACION				
TOTAL COSTOS DE PRODUCCION				
ESTADO DE INVENTARIOS				
	Acabado Ingotes			
	Acabado en Ingotes			
	Acabado Ingotes			
	Acabado en Ingotes			
TOTAL PRODUCCION				

SECTION 1

4.5 Special features of Cost System

- 4.5.1 The cost accountancy and the general accountancy are linked up through the "Costs to be allocated" account (account 5900 in general accountancy which works as transfer account for the manufacturing costs).
- 4.5.2 All costs pertaining to transport or handling of raw materials or products are charged to the relevant raw materials or product account, and intervene in the calculation of the average price at every month's end.
- 4.5.3 Labour is controlled by the Time Office. On the basis of the clock card, the job card is drawn up; the latter indicates, apart from the name, the worker's registration number, the working hours per day and the cost centre as per Plan of Accounts.
- 4.5.4 The raw material and product inventories are calculated monthly in the Cost Department and a new account is drawn up every month. In the account reproduced in the Appendix are mentioned separately:

The Initial Inventory: Balance of Previous Month

Incomings, Adjustments and Production. Also the expenditure referring to assignment of transport and handling.

The Consumption: Outgoings of the month

The Final Inventory

4.5.5 Every month reserves for coating and repair of operation equipments are charged to the manufacturing costs account, viz.:

Rolls for the Blooming Mill
Rolls for the Commercial Rolling Mill
Rolls for Rolling Flat Products
Ingot Moulds and Base Plates
Copper Ingot Moulds
Guides for Steckel Furnaces
Tempering Bells
Bearing for flat rolling rolls
Bearing-supports for flat rolling rolls
Refractories
Shears
Copper clamps for electrodes

4.5.6 We have already mentioned that the costing system is a direct costing system. To obtain a complete integrated costing system we should need the depreciation figures. These figures are not available and at this moment it is impossible to specify the depreciation figures for fixed assets per production process as there exists no detailed inventory of the fixed assets. The Accounting Department is working on the establishment of this inventory, according to the norms recommended by the consultants. This indispensable work will take some considerable time.

RESUMEN DEL MOVIMIENTO DE INVENTARIO

Cuenta No.

Producto

Mes de

Cuenta	DESCRIPCION	Toneladas	PRECIO	MONTO
	Inventario Inicial			
	TOTAL INVENTARIO INICIAL			
	Ingresos, Ajustes y Producción:			
	TOTAL PARA DAR CUENTA			
	Consumo:			
	CONSUMO TOTAL			
	Inventario al Final			
	TOTAL FINAL DEL INVENTARIO			

Preparado por:

Comprobado por:

4.6 Data Processing

4.6.1 For data processing, the equipment in use is an IBM 360-20 model 5 computer.

4.6.2 The works performed by the computer in respect of costs are the following:

Direct Charges

- Pay roll = Cost Headings 100 and 200
"Salaries, wages, overtime, allowance, social laws and various provisions".
The payroll is calculated and listing of the distribution of labour are produced.
- Cash and Banks = Cost heading 600 "Purchased Services" and 700 "Sundry expenses" for the purpose of allocation to the various cost centres - the same data are used by the General Accounting Department.
- Warehouses = Cost heading 300 "Materials" and 400 "Spare Parts". The movements of materials and spare parts inventories are registered and the average prices of all warehouse ingoings are calculated. The allocation to the various cost centres are also performed. A new codification for all materials in warehouses is being prepared at present.

Operation = Cost Heading 500 "Operation Reserves".
The monthly charges as well as their allocation to the cost centres are calculated.

Indirect Charges

Assigned Services = Cost Heading 800 which includes:
Oxygen, Gas, Air, Steam, Water, Petrol, Electricity, Heavy Equipment, Laboratory, Repair Shop, Workshops, Foundry, General, Administration Services, Vehicles, Automation, Electric Maintenance, Mechanical Maintenance. The amount allocated to each centre is calculated on the basis of the supplied units.

A statement is drawn up, showing the original account, the relevant account, the consecutive distribution number and the amount.

4.6.3 On the basis of this information, monthly listings are drawn up, which record all operations of the month in detail per account and sub-account.
Statements are also drawn up which summerize for each account and sub-account the direct charges or the direct and indirect charges.

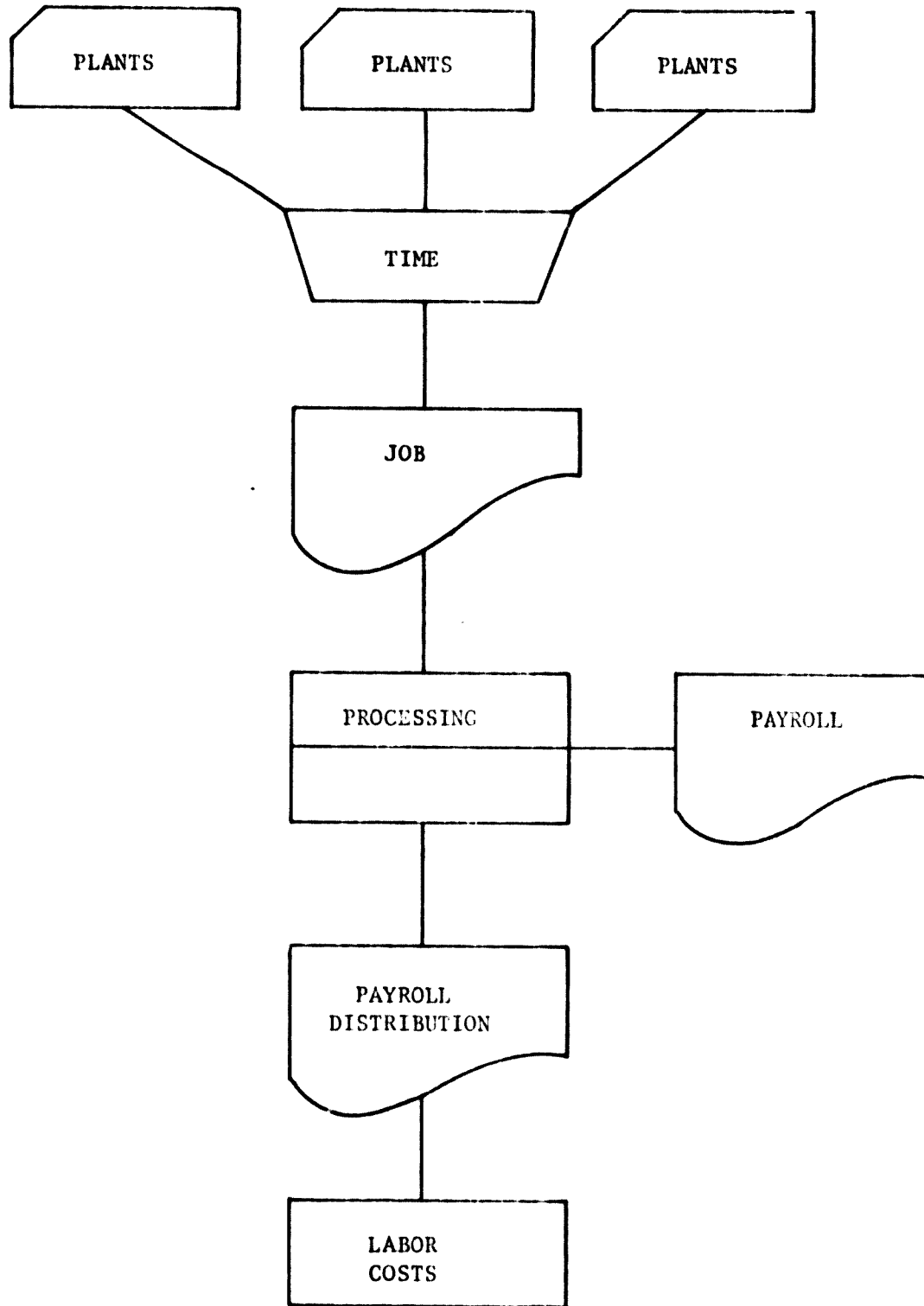
The statements appear in the following form:

<u>ACCOUNT</u>	<u>SUB-ACCOUNT</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
----------------	--------------------	--------------------	---------------

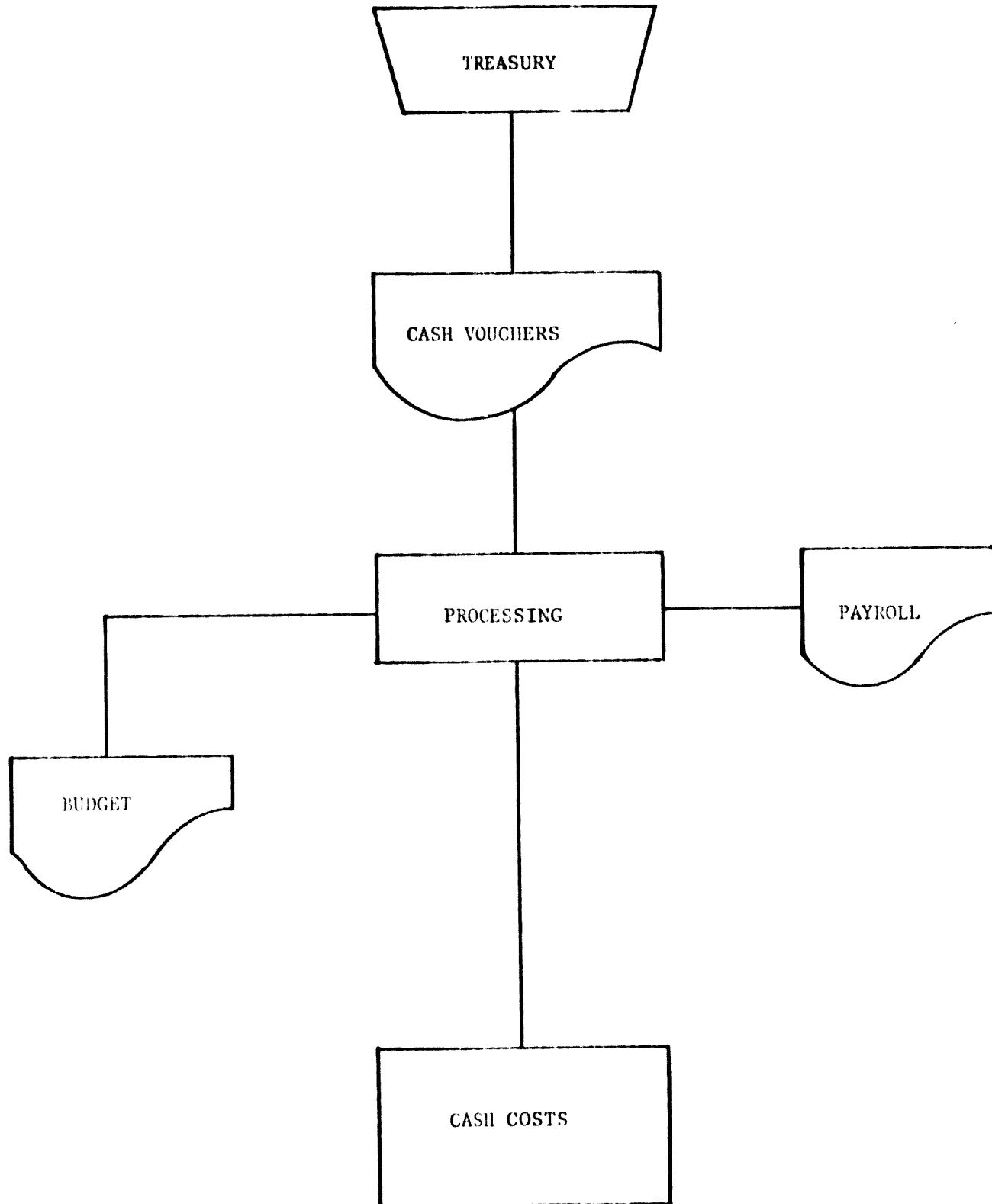
The various statements are used by the Cost Department for establishing the operation cost sheets.

4.6.4 In the following point, we are presenting the Flow Charts and the job specifications.

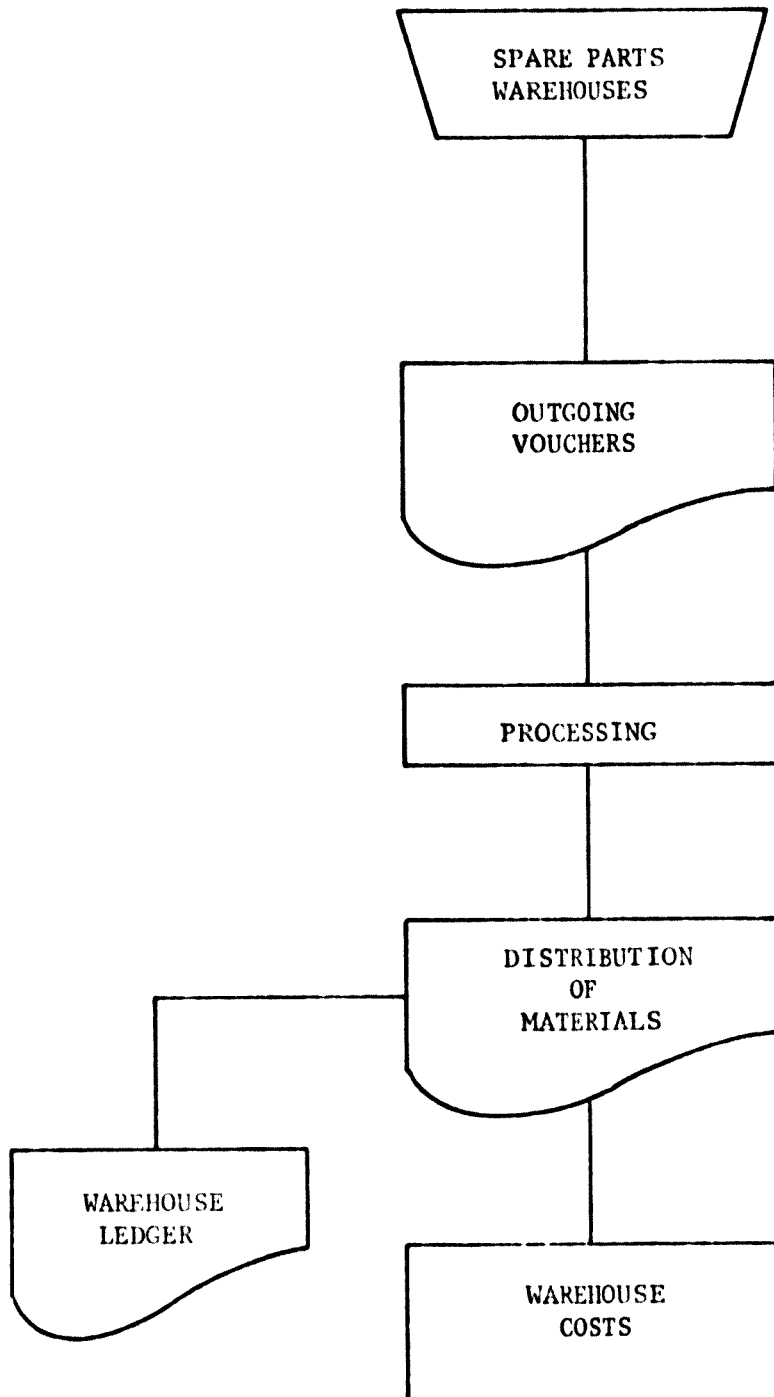
LABOR RECORDS



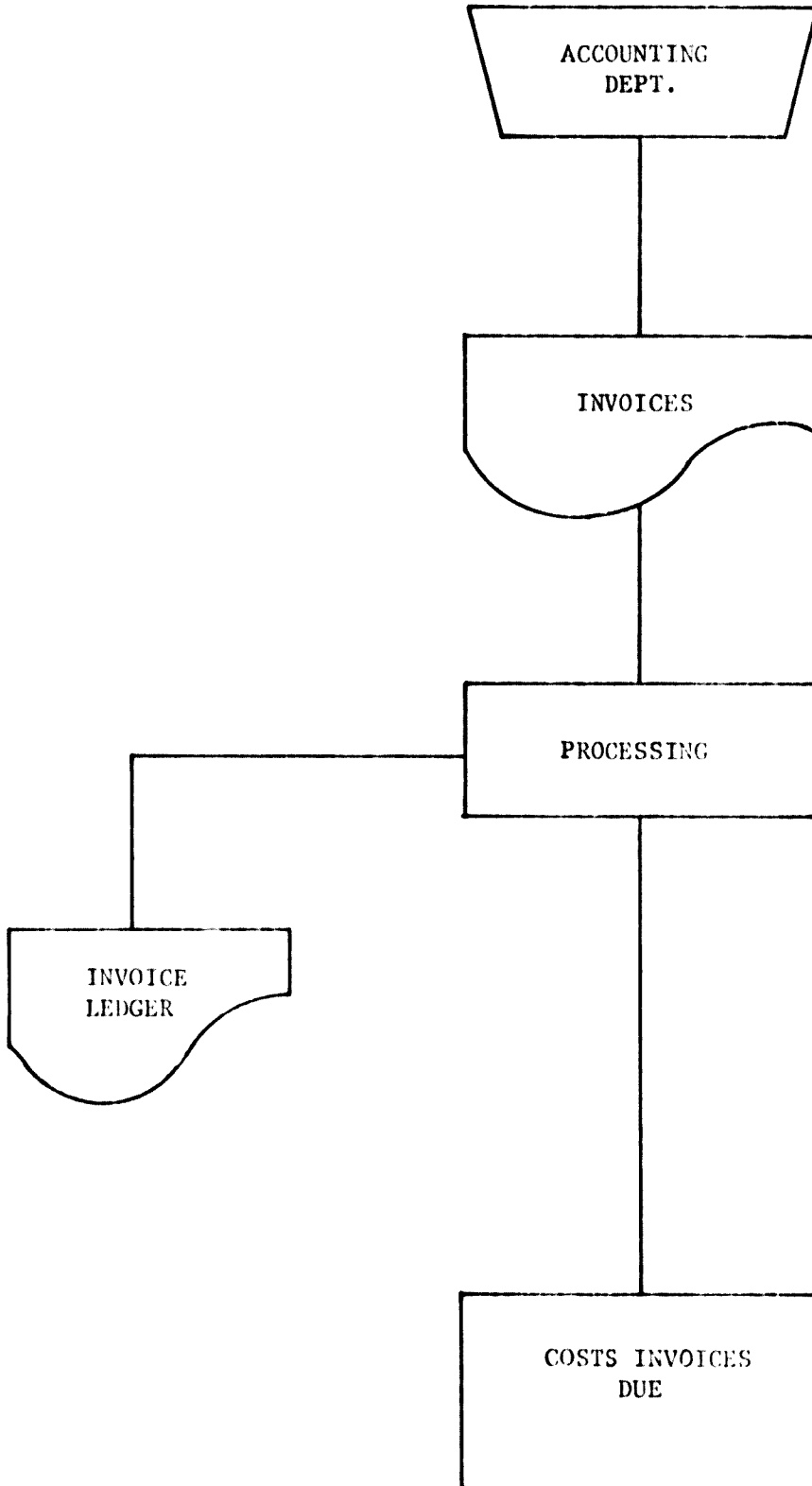
CASH AND BANKS



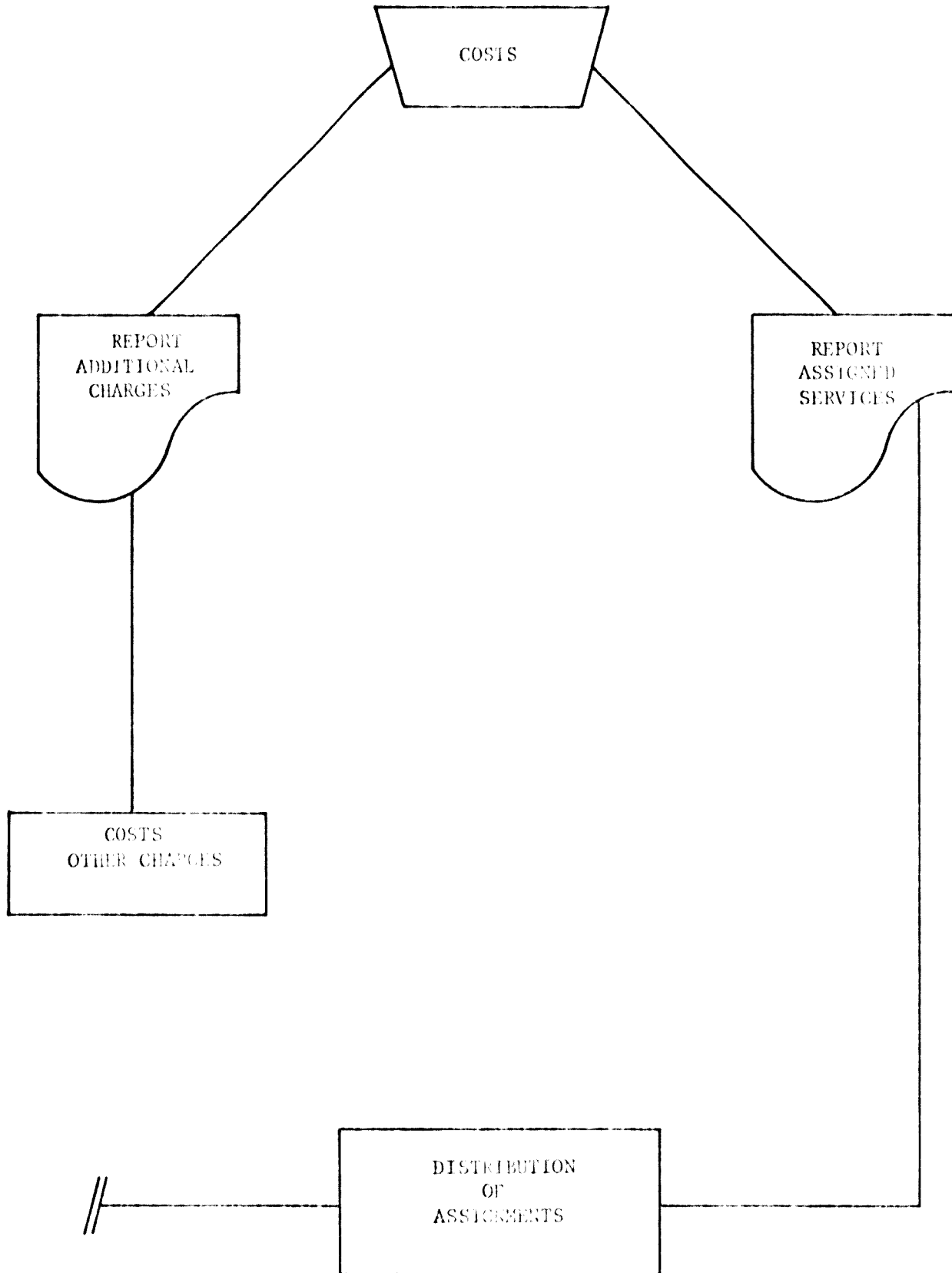
WAREHOUSES (MATERIALS AND SPARE PARTS)



INVOICES DUE

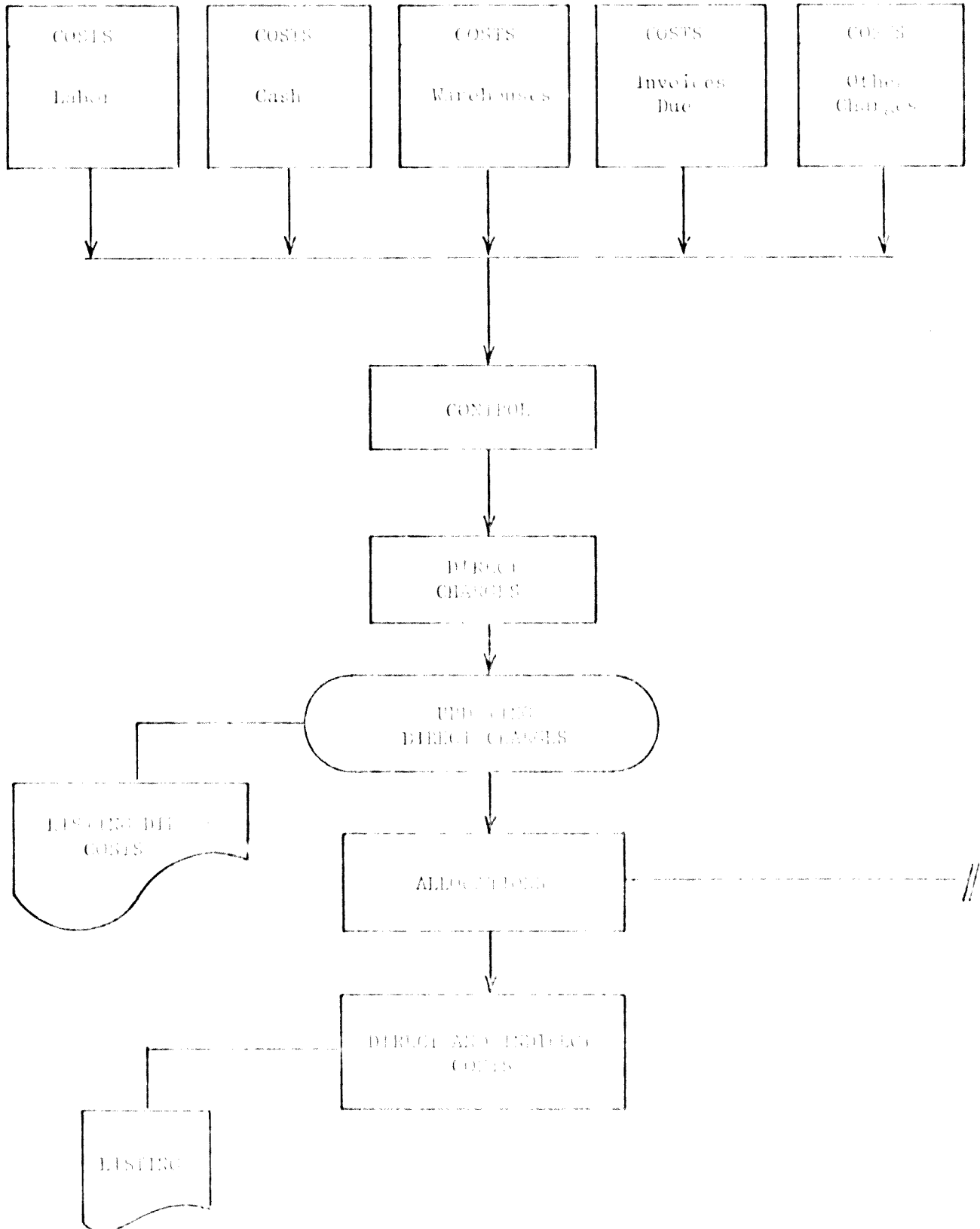


ADDITIONAL AND ASSIGNED COSTS



COST LISTING

(Summary)



4.2. Evolution of A. A.

We have had the opportunity to establish in a simplified form, by means of tables, the evolution of the production cost in the mill during the period from 1961 to September 1971. We present the tables hereafter to give a picture of the progress which has been achieved in a relatively short time, and which is for the greater part due to increased efficiency in the production process.

Compañía de Seguros de Vida y Retiro de Colombia S.A. (C.S.R.)

1950 - 1951

1950

Descripción	Cuentas de Débito	Cuentas de Crédito	Cuentas de Débito	Cuentas de Crédito	Cuentas de Débito	Cuentas de Crédito
	21150	2404	3020	3020	550	3050
	2120	2720	3070	3070	600	3100
	2704	4550	3053	3053	376	3429
	2707	21000	3000	3000	400	3000
	2708	2000	3001	3001	300	3000
	2709	1000	1965	1965	300	2200
	2710	2000	3000	3000	300	3000
	2711	2000	1000	1000	270	2100
	2712	20100	1985	1985	300	2170
	2713	1000				
	2714	2000				
	2715	2000				
	2716	2000				
	2717	2000				
	2718	2000				
	2719	2000				
	2720	2000				
	2721	2000				
	2722	2000				
	2723	2000				
	2724	2000				
	2725	2000				
	2726	2000				
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Compañía de Seguros de Vida y Retiro de Colombia S.A. (C.S.R.)
 1950 - 1951
 1950

S. O. S. T. O. S. P. R. O. D. V. C. S. I. O. N.

MOLINA SUCCESORAS

Año : 1972

	MATERIA DE CARGA				COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/Ton.	Carga en TONS.	Producción en TONS.	Rendi- miento %		
Enero	1058	2957	2794	96.49	97	3988
Febrero	1058	3482	3291	94.51	142	3776
Marzo	1000	4343	4343	100.00	122	3551
Abril	1000	4381	4381	100.00	129	3011
Mayo	1000	2707	2707	100.00	194	2646
Junio	1000	1303	1303	100.00	491	2775
Julio	1000	1982	1982	100.00	242	2540
Agosto	1000	3856	3856	100.00	128	2256
Septiembre	1000	3718	3718	100.00	143	2321
	1012	28729	28375	99.00	159	3007

Ch.6.11.72

RM/tes.

C O S T O S C E P R O D U C C I O N

MATERIALES ELECTRICOS

Año : 1972

	MATERIAL DE CARGA						COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilow/Ton.	Carga en Tons.	Producción en Tons.	Rendi- miento %	Carga Cost/Ton.	Cost/Ton. soles		
Enero	1160	3937	3395	86.23	1627	1627	1358	2985
Febrero	1186	3716	3133	84.31	1513	1513	1079	2592
Marzo	1185	3426	2892	84.41	1506	1506	1182	2688
Abril	1198	3508	2927	83.44	1473	1473	1137	2610
Mayo	1209	3466	2867	82.72	1751	1751	1135	2886
Junio	1199	4305	3590	83.39	1815	1815	1022	2944
Julio	1205	4678	3863	83.01	1678	1678	1081	2759
Agosto	1202	3689	3069	82.99	1719	1719	1214	2933
Setiembre	1189	4843	4072	84.08	1507	1507	1018	2525
	1194	35562	29828	83.86	1607	1607	1132	2739

Ch.6.11.72

R/Ton.

C O S T O S D E P R O D U C C I O N

CONVERTIDORES L-D

AÑO : 1972

	MATERIAL DE CARGA						COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/Ton.	Carga en TONS.	Producción en TONS.	Rendí- miento %	CAJER Cost/Ton.	Cost/Ton. soles		
Enero	1196	5303	4432	83.58	3970	3970	576	4546
Febrero	1216	10730	8824	82.24	3653	3653	447	4100
Marzo	1189	12976	10912	84.09	3647	3647	461	4108
Abril	1232	8623	7001	81.19	3239	3239	602	3841
Mayo	1248	16421	13156	80.12	2925	2915	415	3340
Junio	1217	18440	15148	82.15	2820	2820	404	3224
Julio	1225	20540	16768	81.64	2783	2782	370	3152
Agosto	1207	23452	19424	82.82	2547	2547	356	2903
Setiembre	1246	19423	15590	80.27	2558	2558	428	2986
	1222	135908	111255	81.86	2962	2962	423	3385

Ch.6.11.72

RM/MS.

C O S T O S D E P R O D U C C I O N

PATIO DE COLADA

Año : 1972

	MATERIAL DE CARGA						COSTO DE		COST-TOTAL TON. soles
	Kilos/Ton.	Carga en Tons.	Produccion en Tons.	Rendi- miento	Carga Cost/Ton.	Cost/Ton. soles	OPERACION soles		
Enero	1075	6525	6073	93.07	4036	75	3961	578	4539
Febrero	1080	8549	7913	92.56	3832	80	3752	563	4315
Marzo	1097	9421	8591	91.19	4027	97	3930	602	4532
Abril	1072	8005	7468	93.29	3635	72	3563	719	4282
Mayo	1062	12599	11862	94.15	3438	62	3376	522	3897
Junio	1082	13051	12059	92.40	3376	82	3294	381	3675
Julio	1068	15215	14247	93.64	3259	68	3191	630	3821
Agosto	1062	14660	13804	94.16	3090	62	3028	430	3458
Setiembre	1083	15428	14249	92.36	3101	83	3018	429	3447
	1075	103453	96266	93.05	3442	75	3367	523	3890

Ch.6.11.72
 RM/hcr.

C O S T O S D E P R O D U C C I O N

COLADA CONTINUA

AÑO : 1972

	MATERIAL DE CARGA							COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/ton.	Carga en Tons.	Produccion en Tons.	Rendi- miento	Carga Cost/Ton.	Créditos soles	Cost/Ton. soles		
Enero	1073	1083	1010	93.26	4875	73	4802	1217	6019
Febrero	1062	3408	3209	94.16	4354	62	4292	650	4942
Marzo	1056	4383	4150	94.68	4337	56	4281	557	4838
Abril	1083	1923	1776	92.36	4158	83	4075	1201	5276
Mayo	1074	3424	3189	93.14	3586	74	3512	740	4252
Junio	1064	5687	5343	93.95	3432	64	3368	442	3810
Julio	1071	5436	5076	93.30	3375	71	3304	498	3802
Agosto	1061	7833	7383	94.26	3080	61	3019	412	3431
Setiembre	1062	4234	3986	94.14	3572	62	3110	754	3864
	1065	37411	35122	93.88	3604	65	3539	600	4139

Ch.6.11.72

Ry/hcr.

C U S T O S D E P R O D U C C I O N

LAMINADOR DESBASTADOR

AÑO : 1972

	MATERIAL DE CARGA						COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilcs/Ton.	Carga en Tons.	Producción Tons.	Rendi- miento	Carga Cost/Ton.	Creditos Cost/Ton.		
Enero	1126	4237	3762	88.79	5322	93	602	5931
Febrero	1095	5051	4613	91.33	5284	62	549	5771
Marzo	1091	6469	5930	91.67	5057	58	456	5455
Abril	1139	2592	2276	87.81	5065	105	799	5760
Mayo	1114	5720	5133	89.74	4701	81	461	5081
Junio	1157	4715	4074	86.41	4523	123	616	5016
Julio	1133	5161	4555	88.26	4557	99	562	5020
Agosto	1119	6742	6026	89.38	4299	85	506	4720
Setiembre	1125	5514	4901	88.88	4005	93	556	4478
	1120	46201	41270	89.33	4719	86	547	5180

Ch.6.11.72

RM/hcr.

C O S T O S D E P R O D U C C I O N

LAMINADOR MERCANTIL

Año : 1972

	MATERIAL DE CARGA										COSTO DE OPERACION soles	CCST-TOTAL TCN. soles
	Kilos/Ton.	Carga en Tons.	Producción en Tons.	Rendimiento %	Carga Cost/Ton.	Créditos soles	Cost/Ton. soles					
Enero	1105	5416	4900	90.47	6295	89	6206	886	7092			
Febrero	1116	8025	7189	89.58	6136	100	6036	652	6698			
Marzo	1107	7418	6701	90.33	5420	91	5329	778	6107			
Abril	1097	12187	11106	91.13	4888	91	4807	432	5239			
Mayo	1100	9674	8797	90.93	5124	93	5041	584	5625			
Junio	1074	12584	11713	93.08	4769	58	4711	473	5184			
Julio	1108	8952	8091	90.27	4803	91	4712	552	5264			
Agosto	1123	6384	5696	89.07	4643	106	4537	807	5344			
Setiembre	1119	3049	2724	89.34	4412	102	4310	899	5209			
	1102	73689	66897	90.78	5138	85	5053	616	5669			

Ch.7.11.72

R*/MCC.

C O S T O S D E P R O D U C C I O N

F U N D I C I O N

Año : 1972

	MATERIAL DE CARGA						CCSTO DE OPERACION soles	CCST-TOTAL TON. soles
	Kilos/Ton. TONS.	Carga en Producción en TONS.	Rendi- miento %	Carga Cost/Ton.	Créditos soles	Cost/Ton. soles		
Enero	1174	399	85.21	4448	109	4339	2813	7152
Febrero	1034	458	97.16	3534		3534	2986	6520
Marzo	1010	561	98.93	3464	10	3454	2049	5503
Abril	1090	410	91.71	3140	90	3050	2104	5154
Mayo	1136	618	88.03	2786	136	2650	2014	4664
Junio	1134	625	88.16	2594	134	2460	2314	4774
Julio	1114	653	89.59	2569	115	2454	2841	5295
Agosto	1069	752	93.48	2275	69	2206	2273	4479
Setiembre	1079	657	92.69	2351	79	2272	2614	4886
	1090	5133	91.72	2903	82	2821	2430	5251

Ch.7.11.72

RM/mcg.

CS**T**O**S** P**R**O**D**U**C**I**O**N**

LAMINADOR DUC CUARTO (COMO-DUC)

Año : 1972

	MATERIAL DE CARGA							COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/Ton.	Carga en Tons.	Producción en Tons.	Rendi- miento %	Carga Cost/Ton.	Créditos soles	Cost/Ton. soles		
Enero	1240	650	524	80.62	5868	203	5665	1485	7150
Febrero	1173	4978	4246	85.30	5182	138	5044	397	5441
Marzo	1161	4192	3611	86.14	5261	126	5135	446	5581
Abril	1171	2036	1738	85.36	5014	136	4878	559	5437
Mayo	1148	9233	8041	87.09	4691	114	4577	227	4804
Junio	1350	3250	2408	74.09	5099	310	4799	674	5463
Julio	1177	8567	7277	84.94	4419	145	4274	249	4523
Agosto	1102	7683	6969	90.71	4036	69	3967	231	4198
Setiembre	1157	9463	8182	86.46	4057	122	3935	411	4346
	1164	50052	42996	85.90	4565	130	4435	355	4790

Ch.7.11.72

RM/mcg.

C O S T O S P E P R O D U C C I O N

LAMINADOR DUO CUARTO (COMO-CUARTO)

AÑO : 1972

	Kilos/Ton.	Carga en TONS.	Producción en TONS.	Rendimiento %	Carga Cost/Ton.	Créditos soles	Cost/Ton. soles	COSTO DE		COST-TOTAL TON. soles
								OPERACION	soles	
Enero	1144	1978	1729	87.41	5732	121	5611	1146	6757	
Febrero	1022	1984	1942	97.88	5513	-	-	682	6195	
Marzo	1027	1087	1059	97.42	6215	6	6209	1191	7400	
Abril	1025	3574	3488	97.59	5829	5	5824	474	6298	
Mayo	1024	3624	3540	97.68	4824	3	4821	417	5238	
Junio	1022	4953	4845	97.82	4953	2	4951	483	5434	
Julio	1023	4277	4181	97.76	4934	1	4933	433	5366	
Agosto	1030	5230	5075	97.04	4558	10	4548	435	4983	
Setiembre	1025	6972	6802	97.56	4484	5	4479	576	5056	
	1031	33679	32661	96.98	4986	10	4976	550	5526	

Ch. 7.11.72

Rx/mes.

C O S T O S D E P R O D U C C I O N

L I N E A D E C O R T E O X I P R O P A N O

AÑO : 1972

	MATERIA DE CARGA						COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/Ton.	Carga en Tons.	Producción en Tons.	Rendimiento %	Carga Cost/Ton.	Créditos Cost/Ton.		
Enero	1239	378	305	80.69	7486	239	1333	8580
Febrero	1140	207	181	87.44	7231	140	1762	8953
Marzo	1150	441	384	87.07	6960	150	720	7530
Abril	1237	810	655	80.86	7772	237	322	7857
Mayo	1132	714	631	88.38	6962	132	457	7227
Junio	1090	745	691	92.75	5914	80	449	6283
Julio	1211	344	284	82.56	6662	211	743	7194
Agosto	1211	449	371	82.63	6328	211	676	6793
Setiembre	1216	903	743	82.28	6391	216	434	6609
	1176	4991	4245	85.05	6788	176	612	7231

Ca. 7.11.72

EV/mcg.

C O S T O S D E P R O D U C C I O N

MINNER-STEEL

1972

	MATERIAL DE CARGA						COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/Ton.	Carga en Ton.	Producción en Ton.	Rendimiento %	Carga Cost/Ton.	Créditos soles		
Enero	1218	1173	963	82.10	8329	218	1008	9119
Febrero	1101	1492	1355	90.82	7082	101	679	7660
Marzo	1111	723	651	90.04	8639	112	1347	9874
Abril	1121	2803	2501	89.23	7051	120	450	7391
Mayo	1199	2724	2373	88.44	6403	199	563	6767
Junio	1160	4522	3899	86.22	6296	160	410	6546
Julio	1187	4282	3607	84.24	6286	187	253	6452
Agosto	1160	4260	3670	86.15	5302	161	362	6003
Setiembre	1114	6134	5506	89.76	5642	114	303	5831
	1151	28113	24025	86.88	6347	151	432	6648

Co. 7.11.72

1972

 C O S T O S P O R P R O D U C C I O N

 E L E C T R I C I D A D

1970

MATERIAL DE CARGA

	Costo de Producción Total		Costo de Producción por Unidad		COSTO DE PRODUCCIÓN	COSTO TOTAL
	Costo	Unidad	Costo	Unidad		
Enero	1077	895	831	92.85	823	7695
Febrero	1076	1469	1371	77.05	425	8975
Marzo	1079	2456	2628	92.67	255	6370
Abril	1078	3519	3079	93.13	203	6030
Mayo	1058	4077	3816	94.53	218	5387
Junio	1071	3194	2953	93.39	379	6396
Julio	1078	2235	2046	92.70	308	6012
Agosto	1080	2693	2678	92.77	292	6935
Septiembre	1091	4095	3670	91.64	250	6792
	1075	25072	23314	93.60	303	6661

1971

1972

C O S T O S D E P R O D U C C I O N

SENA DE COSTO EN COMERCIO S.A.S

Año : 1972

	MONTES DE CARGA				COSTO DE OPERACION TOTAL			
	Costo en Dólar/ton.	Costo en Peso/ton.	Costo Cm/ton.	Costo/Ton. soles				
Enero	1977	509	92.83	7643	77	7564	706	8270
Febrero	1062	364	92.39	8200	82	8118	899	9017
Marzo	1105	829	90.47	7375	106	7269	580	7849
Abril	1070	1891	95.37	6590	48	6642	301	6943
Mayo	1106	1666	90.40	6533	107	8426	304	8730
Junio	1086	2057	92.08	7261	86	7175	244	7419
Julio	1066	1424	93.75	7198	66	7132	212	7344
Agosto	1088	1329	91.86	7317	98	7219	230	7459
Septiembre	1114	2326	99.77	7197	114	7083	153	7236
Total	1087	12506	92.02	7380	86	7294	303	7597

03.7.11.72

1972-88.

C O S T O S D E P R O D U C C I O N

LAMINADOR CUARTO REVERSIBLE EN FRIO (REDUCTOR)

1972 :

	MATERIAL DE CARGA						COSTO DE OPERACION soles	COSTO-TOTAL TON. soles
	Kilos/Ton.	Carga en Tons.	Producción en Tons.	Rendimiento %	Carga Cost/Ton.	Créditos Cost/Ton.		
Enero	1029	1180	1146	97.12	8680	29	538	9193
Febrero	1063	1445	1360	94.12	8776	63	537	9250
Marzo	1025	2032	1982	97.54	6533	26	418	6925
Abril	1015	2781	2740	98.53	7105	15	360	7449
Mayo	1011	3605	3567	98.95	5398	11	249	5626
Junio	1018	2411	2368	93.22	6513	19	305	6729
Julio	1019	2123	2083	98.12	6920	20	248	7148
Agosto	1021	1980	1939	97.93	7044	21	355	7378
Setiembre	1017	3304	3248	98.31	6944	17	259	7185
	1021	20861	20433	97.95	6832	21	333	7144

Ch.7.11.72

RW/mcg.

C O S T O S D E P R O D U C C I O N

 R E C O C I D O

Año : 1972

	MATERIAL DE CARGA						COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/Ton.	Carga en Tons.	Producción en Tons.	Rendi- miento	Carga Cost/Ton.	Cost/Ton. soles		
Enero	1000	334	334	100.00	9189	9189	1397	10586
Febrero	1000	909	909	100.00	9202	9202	544	9745
Marzo	1000	1485	1485	100.00	7389	7389	368	7757
Abril	1000	2290	2290	100.00	7720	7720	216	7926
Mayo	1000	2774	2774	100.00	6281	6281	234	6515
Junio	1000	3210	3210	100.00	6177	6177	129	6306
Julio	1000	2248	2248	100.00	7063	7063	195	7258
Agosto	1000	1595	1595	100.00	7331	7331	274	7605
Septiembre	1000	3216	3216	100.00	7209	7209	173	7382
	1000	18062	18062	100.00	7092	7092	260	7352

Ch. 6.11.72
 RM/hcr.

C O S T O S D E P R O D U C C I O N

LAMINADOR CUARTO REVERSIBLE (TEMPLADO)

AÑO : 1972

	MATERIAL DE CARGA						COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/Ton.	Carga en Tons.	Producción en Tons.	Rendi- miento %	Carga Cost/Ton.	Créditos Cost/Ton.		
Enero	1000	509	509	100.00	9891	-	538	10429
Febrero	1000	638	638	100.00	9745	-	537	10282
Marzo	1041	1126	1082	96.09	8085	41	418	8462
Abril	1060	2045	1929	94.33	8503	60	360	8803
Mayo	1021	2638	2583	97.92	6863	21	249	7091
Junio	1021	2583	2530	97.95	7076	21	305	7360
Julio	1015	3167	3119	98.48	6974	15	248	7207
Agosto	1025	2040	1990	97.55	7542	25	355	7872
Setiembre	1017	3228	3174	98.33	7505	17	259	7747
	1024	17974	17554	97.66	7555	24	312	7843

Ch.7.11.72

RM/mcg.

C O S T O S D E P R O D U C C I O N

LINEA DE CORTE EN FRIO (LAF)

Año : 1972

	MATERIAL DE CARGA						COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/Ton.	Carga en Tons.	Producción en Tons.	Rendimiento %	Carga Cost/Ton.	Créditos Cost/Ton.		
Enero	1084	1561	1439	92.18	9216	84	253	9385
Febrero	1068	1894	1773	93.61	10334	68	226	10492
Marzo	1055	1159	1098	94.74	9462	55	346	9753
Abril	1034	2833	2740	96.72	8356	34	199	8521
Mayo	1046	3074	2938	95.58	7574	46	224	7752
Junio	1027	3498	3405	97.34	8098	27	270	8341
Julio	1045	2243	2147	95.72	7446	45	423	7824
Agosto	1032	2924	2832	96.85	7656	32	240	7874
Setiembre	1035	3226	3117	96.62	7983	35	333	8281
	1043	22412	21489	95.88	8249	43	274	8480

Ch.7.11.72

REV. MCG.

C O S T O S D E P R O D U C C I O N

G A L V A N I Z A D O

Año : 1972

	MATERIAL DE CARGA						COSTO DE OPERACION soles	COST-TOTAL TON. soles
	Kilos/Ton.	Carga en Tons.	Producción en Tons.	Rendimiento %	Carga Cost/Ton.	Créditos Cost/Ton.		
Enero								
Febrero	1077	443	412	93.00	10283	77	10206	1918
Marzo	1046	969	846	87.31	9770	146	9624	1090
Abril	1083	1038	959	92.39	9011	83	8928	1005
Mayo								
Junio	1141	870	762	87.59	9688	141	9547	1926
Julio	1140	468	411	87.82	9645	140	9505	3436
Agosto								
Setiembre	1018	80	79	98.75	12144	18	12126	933
	1115	3868	3469	89.68	9640	115	9525	1622

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RV/mcg.

5. POSSIBLE IMPROVEMENTS TO PRESENT SYSTEM

In spite of the fact that the system now in use corresponds with acceptable and exact accounting standards, Management of the Concern wishes to have the accounting information presented in a more dynamic form, so that at any time the actual productivity and the efficiency of the production can be measured.

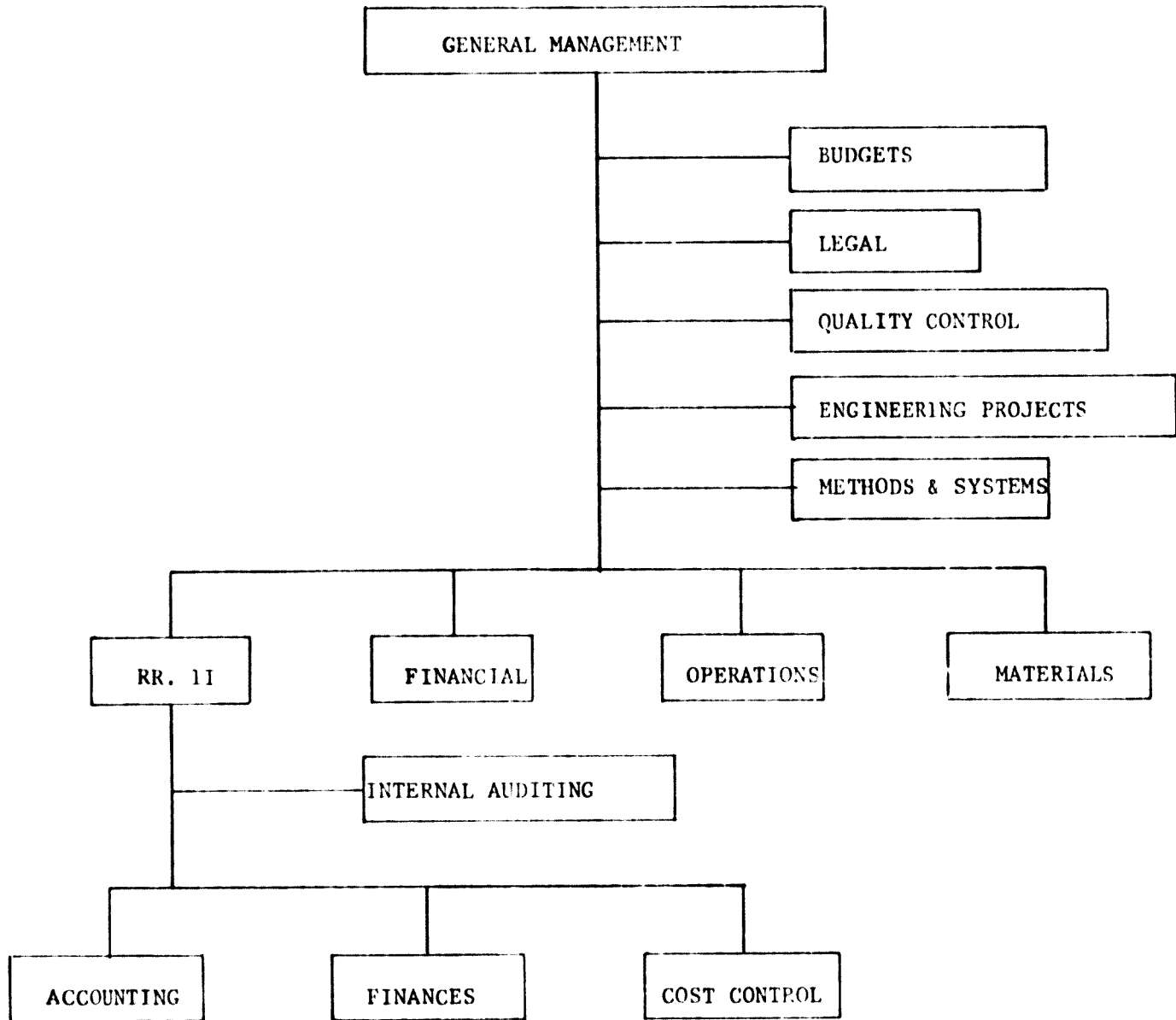
To achieve this aim, a better collaboration between the various departments in charge of the control and the appraisal of the economic activities is imperative. The departments concerned are mainly but not exclusively the Accounting Department, the cost control department, the internal audit department, the production programming department, the quality control and the stores department. It would be necessary to draw up as soon as possible a description of the activities and responsibilities of said departments, to discuss the same and acquaint the interested parties with them.

Although recently a great effort has been made in this sense this team work does not lead to an optimal utilization of the manpower. This can only be obtained through a training program for the medium staff personnel. It is essential that this program should comprise the accounting and the production departments in the largest sense. No industrial enterprise can expand at such a rapid pace, as is the case with SIDERPERU, if it has not at its base a well organized administration which is understood by all.

It would also be very profitable to have a department of METHODS & SYSTEMS, which should have an advisory function and be composed of technicians, industrial engineers and accountants or economists. The department should have no other task than to study the problems of industrial and economic aspects in the enterprise itself, and should not go into daily routine matters or interfere with the executive work.

5.1 Organization Chart

The Organization Chart could be amended by integrating the Cost Department as Management function at the executive level and no more as staff function. The Budget Department would work as a body independent from cost control and one of its main tasks would be to secure the collaboration of the various departments of the Concern for drawing up the budget and to keep in touch with the Ministry of Industry and Commerce (OSP). The Cost Control Department's competence would include a daily and effectual contact with the production departments. The organization chart would be amended as follows :



The Cost Control Department's main activities would include the following sectors:

COST CONTROL

- Production Reports
- Cost Distribution
- Inventory Control
- Calculation and Control of Manufacturing Costs
- Calculation and Control of Services and Maintenance
- Calculation and Control of Production Costs
- Control of Accounting Procedures
- Cost Statistics

It is however indispensable that this work is for the main part done in the production areas.

5.2 New Plan of Accounts

5.2.1 The new plan of cost accounts, which has been introduced on June 1st. 1972, gives a delimitation of the responsibilities of the various activity sectors of the Concern.

It is possible that in the codification too much emphasis has been given to departments which are not directly productive. A modification for the moment might entail difficulties in the application, more particularly in the data processing department. However, it should also be borne in mind that a Plan of Accounts requires flexibility and must adapt itself at any time to the economic requirements of the Concern.

5.2.2 The Plan of Accounts of the general accounting should be urgently revised in order to adapt itself to the data processing. A few months ago the Internal Audit Department made a study in this connection and submitted a preliminary project of the "Accounts Manual" in compliance with the plan of accounts drawn up by CENIP (National Productivity Centre).

In broad outlines the new plan looks as follows:

1st. Class - Balance Sheet Accounts from 1 to 5 as follows:

Assets -

1. Current Assets
2. Inventories
3. Fixed Assets

Liabilities -

4. Current Liabilities
5. Long term debt and Capital Accounts

- 2nd. Class = Income Statement Accounts
- 6. Receipts
 - 7. Expenses
- 3rd. Class = Profits and Losses
- 8. Results
- 4th. Class = Cost accounts
- 9. For use by Cost Department
- 5th. Class = Sundry Accounts
- 0. For Control purposes

Codification

The first digit indicates the group to which the account belongs. The two following ones identify the name of the account. The subsequent pairs of digits indicated divisions of 1^o and 2^o degree of importance of the account.

It has been deemed adequate to adopt sets of two digits, due to the fact that the account and the sub-account divisions include more than nine items in most cases.

Example:

101 02 02

- 1 Current Assets
- 01 Accounts Receivable
- 02 Notes receivable
- 02 Foreign Clients

The new Manual gives a very complete description of how the accounts work, and describes the accounting procedures.

In case it would prove necessary to simplify the codification for processing purposes, a new account grouping might be considered without however altering the basic classification. In order to have a completely integrated plan of Accounts, all cost-accounts might have an additional digit as first one. It would be the "nine" indicating that it concerns cost-accounts. At any rate an urgent decision is required in respect of the start-up of the new Accounting Plan.

5.3 Charts and Forms

The charts and forms used are often difficult to handle, due to their large size. More compact charts should be devised, in which it would perhaps serve the purpose to concentrate the information, without going into details which in any case are found in other documents, more particularly the listings issued by the data Processing Department.

Such is the case as regards the manufacturing cost records. It is understood that in such a case the records should be submitted in a separate sequence, however without it being necessary to alter their appearance. The Cost Control Department could then limit its intervention by summing up the information in simplified charts and use the time saved for making a detailed analysis of the produced data. Each issued chart should obligatorily bear the date of issue and the signature of the issuer or the person responsible for its contents.

5.4 Data Processing

Data processing extend to all jobs performed by the Cost Department.

This does not only refer to purely accounting jobs, such as calculation and appraisal of inventories, including raw materials, finished and half-finished products, but also to the registering, calculation and listing of production data and production movements in quantities and values. As a principle, the only calculations to be made in the Cost Department would be those pertaining to the analysis.

5.5 Internal Audit

5.5.1 The Internal Audit Department has drawn up a program for 1972.

This program covers the following points:

1. Production

1.1 Sequential control of administrative routine

1.2 On the basis of the cost information, to control the performance of the production programs.

1.3 To check per plant the control sheets for the performance of the processes pertaining to:

- Consumptions
- Procurement
- Inventories
- Production scrap

1.4 Selective scrap quality tests on site and comparison with technical specifications upon inspection.

2. Maintenance

- 2.1 Study of system for job orders
- 2.2 Checking of controls in respect of:
 - Execution of job orders
 - Pending and finished jobs
- 2.3 Checking of controls in respect of:
 - Labour
 - Inventories
 - Custody of materials
 - Processes applied for waste
- 2.4 Internal Control

3. Financing

- 3.1 - Analysis of financial statements
 - Charts regarding changes in financial position
 - Balance sheet analysis with application of ratios
 - Comparison with results of previous years
- 3.2 - Cash
 - Periodical checks of cash on hand

4. Control on Current Assets

- 4.1 - Accounts receivable
 - Credit levels
 - Collection of accounts
 - Account Analysis
- 4.2 - Bank reconciliation
 - Reconciliation
 - Checking of vouchers

5. Plan of Accounts

Preliminary project of Account Manual, in compliance with Plan of Accounts prepared by CENIP.

6. Account analysis

7. Contracts

Control on performance and compliance with conditions.

5.5.2 In spite of the fact that this program covers the control of a fair part of the Concern's activities, we are of the opinion that in many cases it duplicates the activities of other control sectors and does not sufficiently emphasize the basic function which the Audit represents. For next year the auditing program should be laid down in agreement with the General Accounting and Cost Department and possibly with the External Auditors.

Also should be respected the "normas tecnicas de control" as prescribed by the Contraloría General de la República Resolución N^o 402 - OI - 72 - CGR/DSP - ONC of 20 June 1972 which approves the "Reglamento de las Normas Técnicas de Control" consisting of three chapters and 31 articles and covering Internal Control and Auditing.

The primary task of the internal audit is the certification of the Concern's internal and external documents and of its accounting books and registers. In respect of these jobs two aspects are primary: arithmetic accuracy and compliance with accounting and administrative standards (for instance: authorized signatures, regulations and decisions of Top Management).

It may take the form of observation of the procedures, examination of documents in search of initials, control marks and other evidence of a previous check. Checking of items in diaries and other original entry books with the listings drawn up by the Data Processing Department also belong to such jobs.

Another aspect of the Internal Audit deals with the entire property protection procedure. In the first place the existence of the various classes of property, as evidenced by the accounts and listings, will be checked periodically by means of physical examination and calculation. The most obvious application is the control of raw materials, materials and spare inventories. As regards the inventories of finished and half-finished products, a close collaboration with the Quality Control Department and the Cost Department is necessary, in order to really control the basis of appraisal in respect of such inventories.

As a general rule, the program should be drawn up while considering the general ledger accounts instead of the economic structure of the Concern as a whole.

A thoroughly studied coordination with the external auditors is also essential. The internal auditing function should complete that of the external audit so as to enable the latter to work more rapidly and to cover a larger field of accounting investigation.

5.6 Graphic Presentation

It is often opportune to submit the accounting information worked out by the Cost Department in graphic form. A graphic presentation is better understood, in particular by persons not used to interpret accounting documents.

However, care should be taken to select more representative scales or presentations, so as to set off the important data more vividly, thereby facilitating immediate reading. In certain cases the use of logarithmic scales is advisable, for instance whenever data of very divergent magnitude have to be compared. Any graphic form in which information is submitted shall be previously discussed with the persons for whom the information is intended (General Management, Job Managers, supervisors, etc.). After all, the information is used by those who receive it and not by those who issue it.

5.7 Budget Control

- 5.7.1 At the present moment planning and budget control are the responsibilities of the Cost and Budget Department. In our opinion both functions should be distinct, as set forth under 5.1.
- 5.7.2 The Ministry of Industry and Commerce has published various documents in which the necessity of having recourse to pre-budget control is set forth. It is not useless to insist on the specific advantages mentioned below:
- It compels to draw up the financial planning of the Concern, which is the most important goal.
 - It systematizes the activities to be performed in order to reach this goal.
 - It regularly checks the progress towards implementation of the goals.
 - It is an incentive for the staff to reach the goals which have been set with their participation.

- It imposes a periodical self-analysis for checking the efficiency or lack of efficiency on the part of those constituting the Concern.
- It inculcates at all authority levels the habit of giving careful consideration to all factors before making a decision.

5.7.3 For correct working of the system the following requirements must be fulfilled:

- Definition of the Concern's organization structure, in which the functions, authority and responsibility are clearly defined.
- Cooperation of all interested departments and services, not only in an advisory, but in the actual working out of the respective budgets.
- Adaptation of the accountancy in such manner that comparative data comply with the concepts.
- To keep the various Departments and Services regularly acquainted with the results achieved, to analyze the differences and adopt the adequate measures required, in order to reach the goals set by the budget.

5.7.4 The Ministry of Industry and Commerce has described the stages of the budget planning and control system as well as the system structure and the various basic budgets, including the formular to be used. These are:

- Sales Budget
- Production and Inventory Budget
- Purchase Budget

- Staff Budget
- Production Cost Budget
- Sales Costs Budget
- Administration Cost Budget
- Profit and Loss Budget
- Capitalizable Investment Budget
- Projected Balance Sheet
- Cash Flow

It is useless to insist on the improvements which can be achieved by correct application of budget Planning and Control.

6. DYNAMIC COST CONTROL

6.1 Standard Costs

The budget technique allows to set general goals and to coordinate the Concern's activities. However, in order to succeed in controlling the various production processes in detail, it is necessary to set production standards which are more than overall forecasts.

Standards will be calculated for quantities, times, prices and costs. The purpose is to dispose of a scientific basis of comparison instead of a mere reference to the past or a wish as to how the production should evolve. In the case of "Siderperu", standards should be calculated while assuming a maximum production capacity. Consequently they will not necessarily correspond with the standards laid down in the budgets. They will rather indicate the goals which could be reached provided optimal working conditions are applied. The standards expressed in quantities and times will be laid down by the technicians responsible for the various production processes or "Costs centre". Calculation of the price and relative cost will be incumbent on the Cost Control Department.

The whole practice of standard costs rests upon a philosophy and not upon a purely accounting technique. Furthermore it is essential that there be a close collaboration between all interested parties. The heads of the production divisions should be grateful of the cost control and therefore collaborate and be willing to help to increase the efficiency in the production process. In fact the principal aim of SIDERPERU is to step up the production and to use to the maximum the resources available.

In the Concern it is necessary to lay down as early as possible an itemized pre-calculated cost, on the basis of standard costs, failing which it is impossible to duly justify the monthly cost variations.

Every month considerable variations occur; these are due to:

- the produced quantities
- the produced qualities
- the returns
- the costs of raw materials
- the actual working hours

We are presenting the charts which should be established permanently for the purpose of effectually checking the productivity of the Concern. The charts are simple and their interpretation is within the scope of all persons who have to use them.

6.1.1 The industrial Programming Department will hand over every week to the Cost Control Department a comparative production time-table showing:

- Raw Material used in the process
- Production
- Transfer to other processes
- Sales
- To inventories

Not only the budgeted production but also the programmed production have been provided for in certain cases the program established at shorter notice must diverge from the budget, for reasons which cannot be foreseen when drawing up the budget, such as force majeure or commercial motives.

The form which we are producing is self-explanatory (see form).

6.1.2 On the basis of this figure the Cost Control Department will be able to establish a pre-calculated cost by means of the standards, both for raw materials and manufacturing costs. In this way it will be possible to have available every week pre-calculated partial results, which will be very useful for subsequent control, as soon as the exact results are available.

Thus the analysis can be drafted almost continuously and the results achieved will contribute immediately for improving the efficiency.

The weekly production cost chart in standards will clearly indicate that standard costs are concerned and will essentially constitute a working document. The purpose is namely to be acquainted promptly with the results, based on actual quantities at standard costs (see form).

6.1.3 For the control of raw material costs the present form will be used also in the future.

For the control of manufacturing costs, we suggest a simplified and more condensed, but more comprehensible form for the Production Departments.

The form shows:

1. - The total manufacturing costs per account and per sub-account.
2. - The actual production and the cost per ton for each sub-account.
3. - The programmed production and its relative cost per ton for each sub-account.
4. - The standard cost per ton for each sub-account.
5. - The variation due to the production = difference between (2) and (3).
6. - The total variation in respect of the "standard" = difference between (2) and (4).

A monthly chart and a cumulative chart will be submitted.

6.1.4 For the purpose of informing the Top Management and the General Management, the Production Budget Control chart, which is a summary of the above mentioned chart, will be presented every month.

For the first time, this chart was presented to the Top Management in July 1972, but it only covered the months of January to April 1972. At present the charts are up to date.

6.1.5 Henceforth the calculation of an hourly cost per production process will also be contemplated.

By means of this procedure it will be possible to know the negative influence which the idle time exert on the total manufacturing cost. Moreover, it will enable to calculate in a more rational way the allocation of the manufacturing costs to the finished product in case specific material is used for producing several finished products.

A typical case occurs for the flat products. At present a distribution factor is applied which has the disadvantage of being comparatively arbitrary.

As a first step, it would be possible to use a very simplified time control chart, indicating:

1. - The relation of all production processes
2. - The total possible production hours
3. - The actual working hours
4. - The idle hours
5. - The total amount of the actual manufacturing costs as shown in the other charts
6. - $\frac{\text{Manufacturing cost}}{\text{Possible hours}} = \frac{(5)}{(2)}$
7. - $\frac{\text{Manufacturing cost}}{\text{Actual hours}} = \frac{(5)}{(3)}$
8. - Loss per hour = (7) - (6)

A similar chart could be drawn up, with a calculation of the hourly cost with standard manufacturing costs. In the column provided for indicating the loss (8) the variations from standard would be shown.

STANDARD PRODUCTION COST

WEEK -

PLANT -

PROCESS -

I T E M	KILOS/TN		TONS ACTUAL	PRICE STANDARD	AMOUNT
	standard	actual			
RAW MATERIAL					
CREDITS					
TOTAL RAW MATERIAL					
MANUFACTURING COSTS					
TOTAL MANUFACTURING COSTS					
TOTAL PRODUCTION COSTS					
PRODUCTION					
TOTAL PRODUCTS					

(MONTHLY TABLE)

MANUFACTURING COST PER HOUR

PROCESS	Possible Hours	Actual Hours	Idle Hours	Manufacturing Cost	Possible Hourly Cost	Actual Hourly Cost	Loss
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

6.1.6. In November 1972 a first design was made for the establishment of standard costs. In the coming year these charts will have to be revised taking into account the better techniques which will have been obtained by the various production units.

We add as an example a few of these charts.

C O S T O S E S T A N D A R

.....

A L T O H O R N O

Producción Diaria : 900 Tons. Arrabio Líquido.

<u>MATERIA DE CARGA:</u>	<u>KILOS/TON.</u>	<u>PRECIO</u>	<u>COSTO/TON.</u>
Pellets	1,500	430	645
Coke	580	1,910	1,108
Caliza Molida	200	190	38
Mineral de Manganeso	32	1,250	40
Cuarcita	18	390	7
Balastro	5	58	3
	2,335		1,841

<u>COSTOS DE OPERACION (POR DIA)</u>	<u>SOLES</u>	<u>COSTO/TON.</u>
Hano de Obra	40,500	45
Materiales Varios	70,200	78
Repuestos	1,400	2
Reservas de Operación	35,100	39
Servicios Comprados	5,400	6
Créditos por Gas	(10,800)	(12)
Servicios Asignados	97,200	108
	239,000	266

COSTO TOTAL POR TONELADA:

2,107

El No Incluye Depreciación.

MM/mcg.

C O S T O S E S T A N D A R

CONVERTIDORES L-D

Producción Diaria: 1200 Tons. Acero Líquido en cuchara.

Base : 32 coladas diarias - 20 días útiles.

<u>MATERIAL DE CARGA</u>	<u>KILOS/TON.</u>	<u>PRECIO</u>	<u>COST/TON.</u>
Arrabio Líquido	886	2,107	1,867
Chatarra	225	2,030 *	457
Cal Viva	70	1,100	77
Otros	23		100
	1,204		2,501

<u>COSTO DE OPERACION (Por Día)</u>	<u>SOLES</u>	<u>COSTO/TON.</u>
Mano de Obra	21,600	18
Materiales-Varios	13,200	11
Repuestos	2,400	2
Reservas de Operación	108,000	90
Servicios Comprados	3,600	3
Cargos por Contabilidad	1,200	1
Servicios Asignados	96,000	80
	246,000	205

Costo Total :

2,706

NOTA: La producción contemplada para establecer este costo estándar es factible (438,000 Tons/año) pero no se podrá alcanzar por dos motivos:

- 1.- Falta de Oxígeno
- 2.- Falta de arrabio líquido (Producción del Alto Horno es limitado máximo de 300,000 Ton/año.)

* El precio de la chatarra de fábrica es igual al 90 % del precio del arrabio (según norma CEPAL E/CN 12/766 de 1967 pág. 85)

RH/mcg.

C O S T O S . . . S T A N D A R D

HORNOS ELECTRICOS

Producción Diaria : Alto Carbón Bajo Carbón
 450 T. 390 T. Acero líquido en
 cuchara.

Base : 15 coladas 13 coladas

<u>MATERIAL DE CARGA ALTO CARBON</u>	<u>KILOS/TON.</u>	<u>PRECIO</u>	<u>COST/TON.</u>
Chatarra	780	2,030	1,583
Arrabio Sólido	200	2,260	452
Moldes y Bases	100	1,000	100
Caliza Molida	63	190	12
Otros	17		82
	1,160		2,229

MATERIAL DE CARGA BAJO CARBON

Chatarra	914	2,030	1,855
Arrabio Sólido	166	2,260	375
Moldes y Bases	-	-	-
Caliza Molida	60	190	12
Otros	22		86
	1,162		2,328

<u>COSTO DE OPERACION (Por Día)</u>	<u>SOLES</u>	<u>ALTO CARBON</u>	<u>BAJO CARBON</u>
		<u>COSTO/TON.</u>	<u>COSTO/TON.</u>
Mano de Obra	15,630	35	40
Materiales-Varios	130,500	290	335
Repuestos	900	2	2
Reservas de Operación	1,200	3	3
Servicios Comprados	1,600	4	4
Cargos por Contabilidad	500	1	1
Servicios Asignados	118,000	262	302
	268,330	597	687
		2,229	2,328
COSTO TOTAL :		2,826	3,015

NOTA: ESTe costo standard es mayor que el histórico por haberse considerado la chatarra al precio fijado según norma CEPAL E/CN 12/766 de 1,967

PH/neg.

C O S T O S E S T A N D A R

PATIO DE COLADA

Producción Diaria : 1230 Ton.

Base : Producción Total Acería menos Producción Colada Continua.

<u>MATERIAL DE CARGA:</u>	<u>TOTAL</u>	<u>KILOS/TON.</u>	<u>PRECIO</u>	<u>COST/TON.</u>
Acero Líquido H.E	450 T.	365	2,826*	1,031
Acero Líquido L.D	860 T.	690	2,706	1,867
	<hr/>			
	1,310 T.	1,055		2,898
Crédito por Chatarra :		55	2,030	112
				<hr/>
				2,786
				<hr/>

<u>COSTOS DE OPERACION (Por Día)</u>	<u>SOLES</u>	<u>COSTO/TON.</u>
Mano de Obra	29,000	24
Materiales-Varios	103,400	84
Repuestos	1,300	1
Reservas de Operación (Lingot. y Placas de Base)	135,300	110
Servicios Comprados	11,000	9
Servicios Asignados	24,600	20
	<hr/>	
	305,200	248

COSTO TOTAL POR TONELADA :

3,034

* Alto Carbón

RM/mcg.

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C O S T O S E S T A N D A R

COLADA CONTINUA

Producción Diaria : 340 Tons.

Basé : 12 coladas diarias de 28.5 Ton/Colada

<u>MATERIAL DE CARGA :</u>	<u>Kg/Ton.</u>	<u>Precio</u>	<u>Cost/Ton.</u>
Acero Líquido L-D	1,055	2,706	2,855
	1,055		2,855
<u>Crédito</u>	55	2,030	110
			<u>2,745</u>

<u>COSTOS DE OPERACION (Por Día)</u>	<u>SOLES</u>	<u>COST/TON.</u>
Mano de Obra	25,800	76
Materiales-Varios	51,000	150
Repuestos	2,400	7
Reservas de Operación (Lingoteras de Cobre)	3,700	11
Servicios Comprados	2,600	8
Servicios Asignados	29,300	86
	<u>114,800</u>	<u>338</u>

COSTO TOTAL POR TONELADA :

3,083

RM/mcg.

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6.2 Break-even point

- 6.2.1 In order to have an overall control over the operations of the Concern, it is advisable to calculate every month, on the basis of the Profit and Loss Statement, the break-even point. The graph, which is easily drawn up, enables to control the result up to date and to indicate graphically at which production levels the Concern can make profits.

If we compare these graphs month per month, the conclusion will rapidly be arrived at as to whether there are improvements in the production efficiency and in the reduction of costs. A graph showing the standards or the targets laid down in the budget would even be more effective. A first try was made in June 1972 on the basis of the results obtained in the first three months of 1972 (January to March). At present the graph is drawn up every month and is discussed with the medium and senior staff.

It will be noted that both the raw materials and the transforming costs are considered as variable costs. The fixed costs only include overall administration costs, depreciations and financing costs.

- 6.2.2 Henceforth it will be necessary to separate more clearly the fixed costs from the variable costs on the basis of a more selective analysis of the manufacturing costs. In this respect the standard costs and manufacturing cost charts (new form) will be very useful. In these charts the fluctuations of unit costs are clearly shown per cost heading at various production levels.

If in any heading there is a strong fluctuation (more than ten percent) the cost will be considered as fixed. If, on the contrary, the cost per ton remains almost equal at different production levels, it will be considered as variable.

Raw materials are always variable costs. After a preliminary analysis, we arrived at the conclusion that salaries and wages are essentially a fixed cost.

At present the Cost Department is analyzing more in detail the evolution of the overtime which also seems to be of a fixed kind.

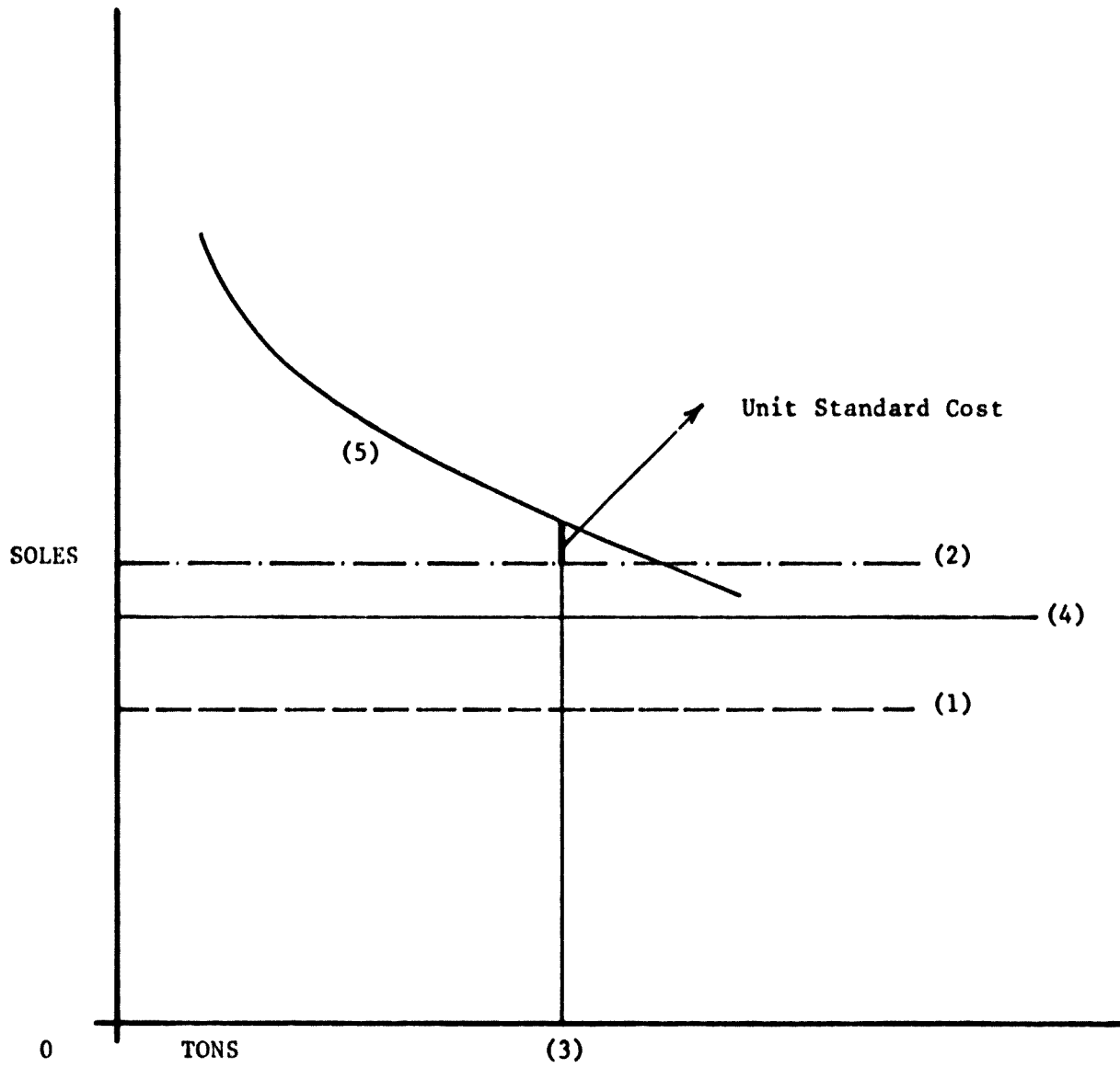
6.3 Graph of Fixed and Variable Costs on the basis of the unit standard cost

The variation between the actual unit cost and the standard unit cost will be shown in graphic form for all production processes. The purpose is to indicate the incidence of the fixed costs at various production levels but at the same time to set forth the variations between the actual and standard variable unit costs (including the raw materials cost).

The graph will indicate:

1. - The variable standard unit cost
2. - The total standard unit cost = for more easy reading it will be shown by a straight line (although logically it is a curved one)
3. - The standard production level
4. - The actual variable unit costs
5. - The actual total unit cost = curve

The variation at standard production level, but also at any other level, can readily be seen. The graph has the advantage of comprising all actual unit cost elements at all production levels and to compare them with the total unit standard cost at a standard production level.



7. PROPOSAL FOR IMPLEMENTATION OF RECOMMENDATIONS

7.1 Purposes of the Recommendations

On the basis of the conclusions of the study, 516/1/130, the Consultants propose to implement a program of action aiming at the use of administrative data for the continuous appraisal and where and necessary - adaptation of the production processes.

Stimulation of efficiency-consciousness presupposes the fulfillment of the following conditions:

1. A cost consciousness will have to be developed throughout the factory.
2. Accounting data will have to be further processed and integrated with other data (progress of production, storage of materials, personnel, etc.), in a number of fixed procedures so as to permit comparisons of the efficiency of one department at fixed intervals and of various departments at the same time.
3. Procedures will have to be elaborated so as to ensure
 - a) the availability of required data at the required time on the required spot in the required form,
 - b) where, when and by whom action of what kind will be taken if the efficiency of operation of a department or of the factory as a whole so requires.

7.2 Approach

It is the opinion of the Consultants that it is in the best interest of the counterpart to integrate the previously mentioned aspects in one program of action. Although some of these clearly exceed the field of accounting, the facts that

- a) integration of data of different kinds is essential for the appraisal procedures, and
- b) financial and economic data form the basis of the appraisal and action procedures, call for an approach in which the various aspects are treated from one, preferably the financial/economic, point of view.

The Consultants esteem that it is possible to achieve the goals previously mentioned by means of a training program if the word "training" is not to be taken too literally. Such a training program will have to consist of a number of different degrees of active participation on the part of the counterpart personnel. It will further have to be differentiated according to the organizational level and the specialization of the personnel.

7.3 Differentiations

The Consultants propose to differentiate the content and the execution of the training program according to three major levels in the counterpart's organization:

- top management, heads of large departments and central staff personnel insofar as directly involved in efficiency appraisal
- middle management
- supervisors and personnel directly in charge of labor.

The major parts of which the program would have to consist can be summarized as follows:

- introduction to the notion of cost and influence thereof on factory results
- technical notions concerning the translation of accounting and other data into efficiency comparisons

- the factory's information process: transmittance, treatment and storage of various kinds of data throughout the factory. Elaboration of modification in the information process required by its new use.
- the factory's decision making process: organizational level, moment, etc, of initiation of action, control procedures, kind of feedback information, etc,

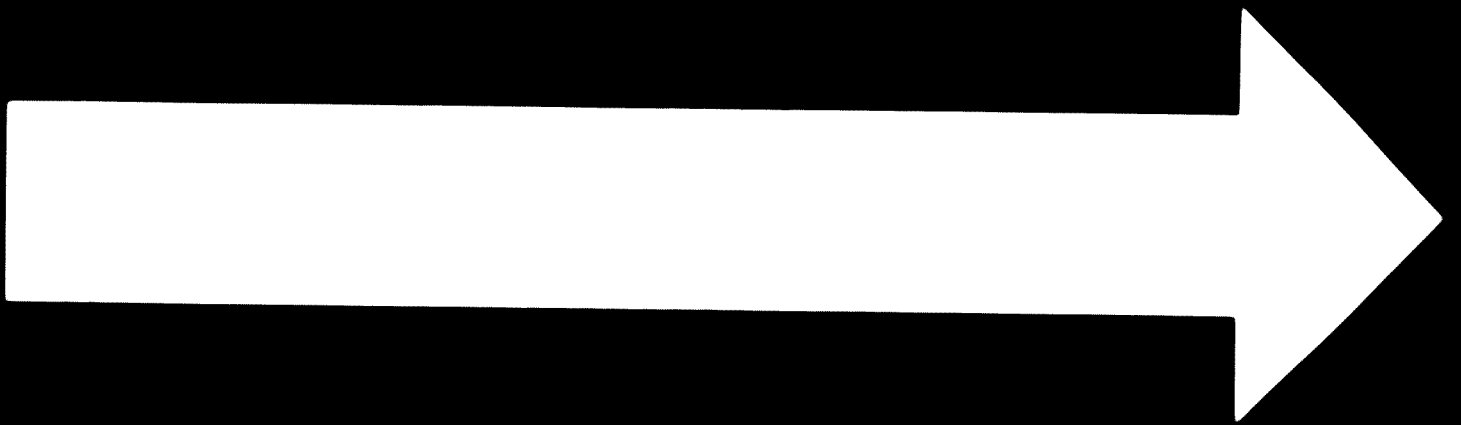
It is the opinion of the Consultants that the integration of these parts in one program has the following advantages:

1. Whereas integration of various kinds of information is one of the counterpart's major problems, this integration can be promoted by a concentration in one program.
2. Whereas the integration of various kinds of information should aim at an improvement of financial results, the program starts and focuses upon financial aspects.
3. Whereas it would be possible to study the information and decision making processes separately, an inclusion in the training program would, however, guaranteed that
 - a) these studies will be limited to the essential for the program, and
 - b) that these studies will not be executed in their own right, but will, like the rest of the program, focus upon an improvement of financial results.

7.4 Methods

The Consultants propose to execute the training programs according to the following methods:

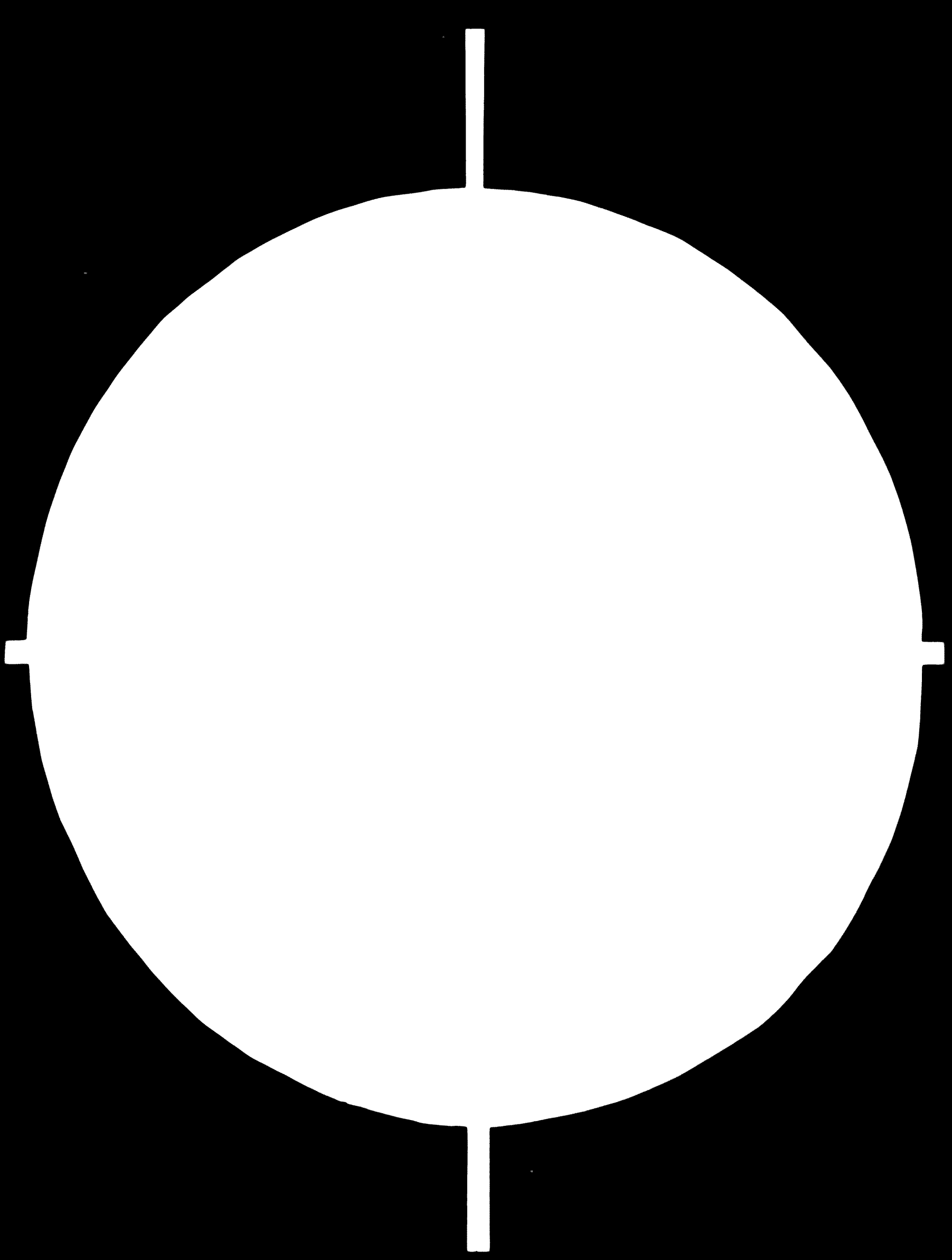
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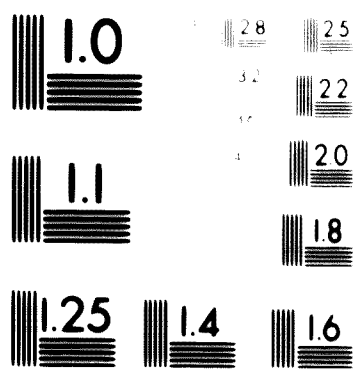
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2 OF 2



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-
1963-A REFERENCE MATERIAL, 1010
25-10810-1 TEST CHART NO. 1

24x F

1. For the Top Management level:

- integration of the introduction to the notion of cost and its importance with a general outline of the procedure of calculation of efficiency comparisons. These to be given in lectures with a small number of case examples.
- study of information and decision making processes by the trainees under guidance of the consultants' training personnel with the help of cases, business games and role games. This calls for a "social" rather than a "technical" approach, as the trainees own position is involved. The concreteness of this study of what actually happens in the factory (rather than the study of abstract principles of organization) warrants the expectation that recommendations for improvements will be formulated. The Consultants propose to start this phase with a seminar of no less than three days, to get the "social process" into motion, and then to follow-up at regular intervals with one day sessions. The study should begin with prepared "standard" cases and then proceed towards real life problems, which prepares the counterpart personnel for a problem-solving attitude which will probably continue to have its effects after the departure of the consultants.

2. For the Accounting and Data Processing Departments:

- introduction to the notion of cost and its influence on the factory's results (lectures).
- elaboration of procedures of calculation of efficiency (extensive lectures and case material).
- information process: less extensive, based on findings of first group. Small number of cases.
- decision making process: outlines.

3. For Middle Management: - Notion of Cost
Extensive cases

- calculation of efficiency: principles, some cases.
- information process: rather extensively, cases. Preferably one member of the first group should attend the meetings of this one, if only to ensure the comptability of the recommendations.
- decision making process: Idem.

4. For Supervisory Level:

- all aspects treated in principle focusing on own responsibility. If possible, let one member of the middle management group attend the meetings of this one.

The size of the group should be limited, especially in the cases of top and middle management.

7.5 Time Schedule

The principle of the time order of the program is represented in Diagram (1).

An outline of a Time Order for the execution of the training program is given in Diagram (2).

DIAGRAM 1:

SCHEDULE OF TRAINING PROGRAM

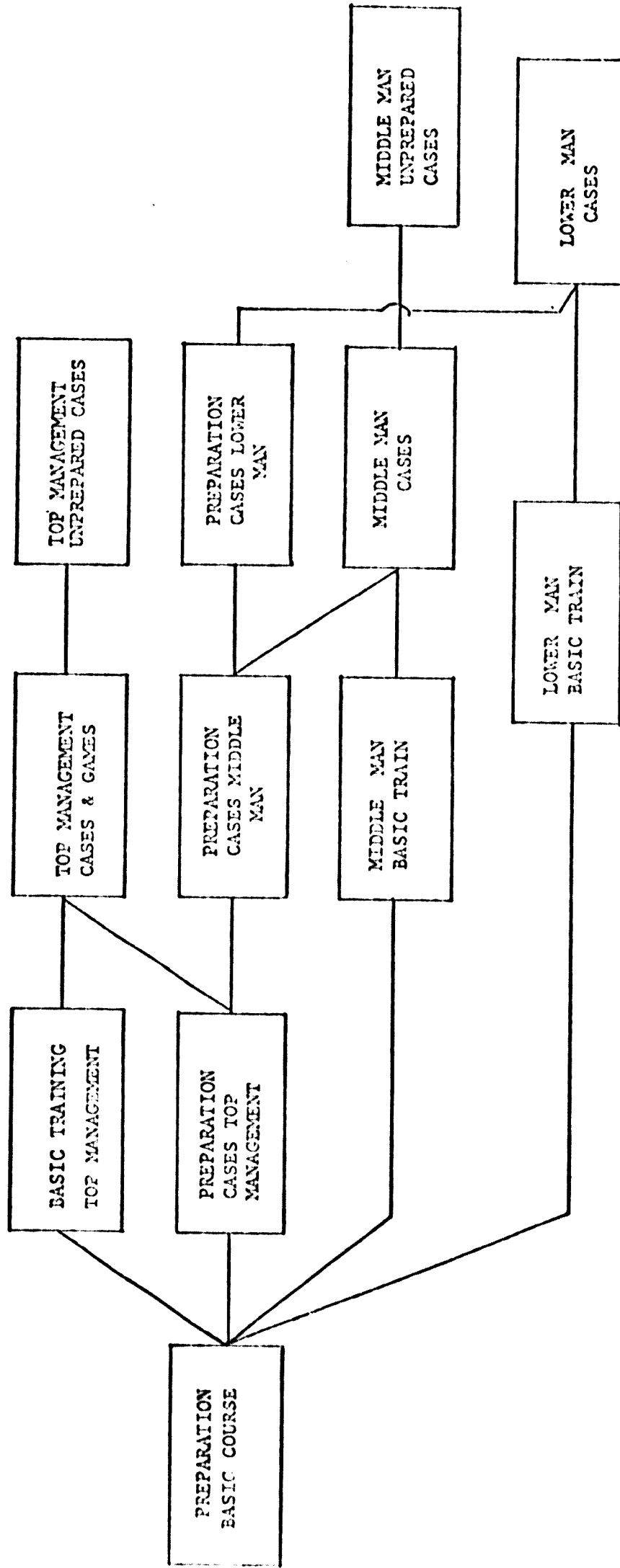
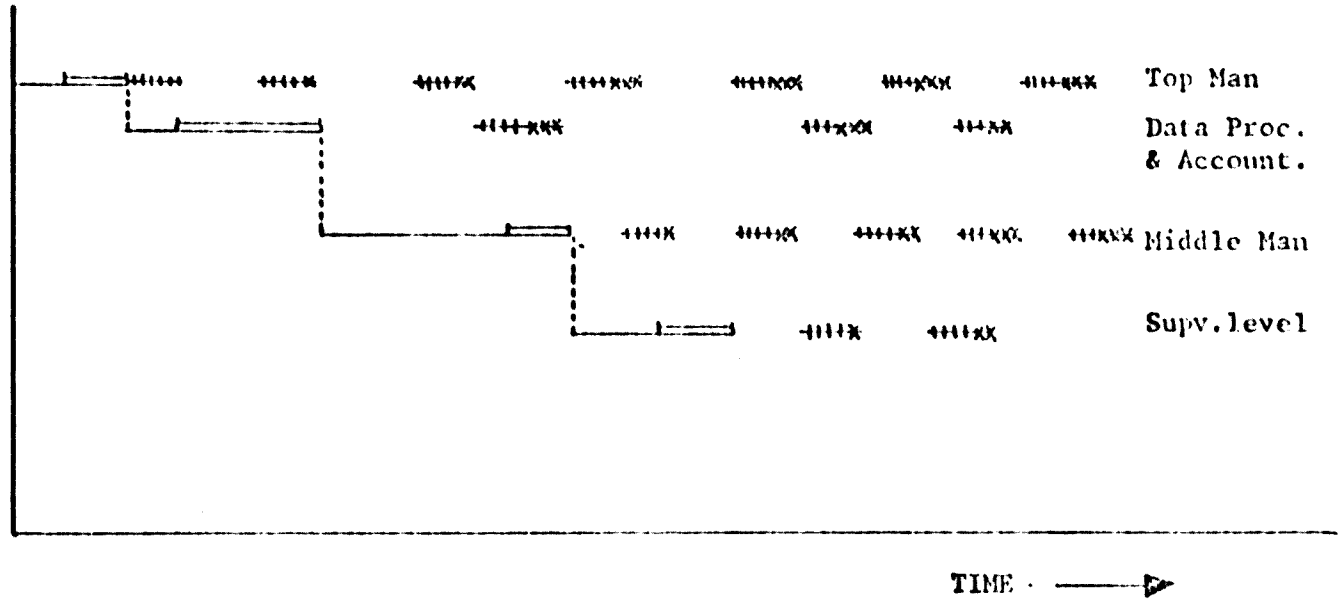


DIAGRAM 2

TIME ORDER OF TRAINING PROGRAM



- = Introduction Cost
- ==== = Efficiency Calculations
- |||| = Information Process
- *~*~*~ = Decision Making Process

The duration of the phases are not precisely indicated, because the final design of the program should be elaborated with UNIDO and the counterpart. It is estimated, however, that the execution of the program would require 6 man months approximately.

7.6 The Consultant's Training Personnel

The Consultants propose an execution of the program by at least two trainers. The first of these should be an expert in accounting procedures and economic appraisal. He should prepare and conduct the lectures on costs and efficiency calculations.

The second trainer should be an expert in group training, with extensive experience of case methods, business and role games, and should at the same time be an expert in the analysis of information and decision making processes.

The execution of the program would require about one man months of counterpart personnel (preferably of central staff level) for the preparation of case and game material.

APPENDIX

THE IMPORTANCE OF COST CONTROL

1. The purpose of the meeting is to explain to you the necessity for any modern concern to know, to analyze and to discuss its production, administration and service costs.
2. Cost calculation can be defined as the registration of the change in quantities and values occurring during an economic process, the transformation of a product or the supply of a service.
3. The object of any economic process is to achieve a favourable difference (profit) between the product or the final service at its selling price and the elements which have at the outset contributed to its process at their original value.
4. It is quite true that a budget or an estimate is an opinion, and that the selling price is a policy, on the other hand the cost is an actual fact. We insist on this point, for as soon as a product has been transformed the cost incurred is an irreversible fact, which is liable to have fatal repercussions on the financial level.
5. The basic cost elements in an industrial concern are: raw materials, auxiliary materials, labour, services, depreciations and financial expenses.
6. In order to draw up the balance sheet of a concern, it would be sufficient to totalize all the elements mentioned without any major need to make an analysis. For checking the financial position of a concern, the balance sheet and the Profit and Loss Account will enable to draw up a cash flow; but for determining the operational efficiency we have to make an economic analysis of every process.

7. Due to the fact that the Concern is divided into several manufacturing sectors and auxiliary services, maintenance and administration departments, it is necessary to determine the responsibility centres (Cost Centres).

8. When analyzing a cost, three questions arise:
 - Where has the cost occurred?
 - Who has taken the responsibility?
 - For what purpose has the cost been made?

9. In accordance with these principles, the Cost Department has prepared documents in accordance with plan of Accounts, where the responsibility centres and the expenses made are clearly shown. For more clearness and considering its importance, a separate document is used for the raw materials, in which the general operation cost and the outputs are also shown.

10. In order to avoid charging the various manufacturing departments with responsibilities which are not under their direct control, the depreciation charge of the fixed assets and the financing cost have not been included in the manufacturing costs; the same applies to the administration charges, for which allowance is made separately and which are directly allocated to the Profit and Loss Statement. Therefore the cost system applied in the Concern is the direct cost system.

11. The profit and loss account looks as follows:

SALES

Less:	<u>COST OF SALES</u> (Sold Production Cost)
	= GROSS RESULT (Loss or Profit)

Less: **DEPRECIATIONS**
 GENERAL OVERHEAD
 FINANCING COSTS
 = NET PROFIT OR LOSS

12. Depreciations, overhead expenses of the Concern and financing costs are fixed costs which will be covered only by the difference between the selling price and the direct cost of the product; to obtain this coverage one can:
 1. Increase the gross profit margin, by decreasing the production cost or increasing the production so as to obtain the same result in absolute figure.
 2. Decrease the fixed costs.

13. We are showing under graphic form the calculation of the break-even point in respect to the evolution of the results achieved by the Concern during the first quarter of this year. It is clearly shown that, in order to obtain more favourable results, the first step is a considerable production increase since, for the moment, the demand on the national market exceeds the production possibilities. The graph shows that, in case all administration costs could be eliminated, we would not succeed in reaching the break-even point.

14. The importance of the fixed costs which the concern has to bear is such that it is worth while mentioning them. The depreciations are in the order of 360.000.000 soles per annum, which represents (if we consider calendar hours) 41.400 soles per hour.
The permanent labour charges come to 38.000 soles per hour.
On the other hand, the production (January to March) only reaches 12.5 tons/hour.

CONTROL

15. The data obtained by the Cost and Budget Department would have no value whatever as a tool of management if they do not arrive in due time and if they do not tally with reality.
16. The Cost Department is able to maintain accurate control over the nature of the costs as a whole. However, for the time being, it must partially rely on the good faith of the service for determining in which responsibility centre the cost was made.
17. The Concern considers carrying out a more efficient control in the cost centres themselves. To reach this objective, the Concern has obtained through MIC the assistance of the United Nations and has enlisted professionals to periodically make a cost analysis.
18. The Cost Department considers cooperating with you both for establishing the budgets and for cost control.
19. The comparative budget and cost charts should not be used exclusively for accounting and financial purposes, but rather for increasing the technical efficiency of the plant.
20. Henceforth not only the costs will be analyzed in absolute results, but more importance will be given to the analysis of the variations having occurred in product quantities and qualities, and also in the operational costs. Emphasis will further be laid on any savings which can be made in the course of the manufacturing process.

21. It will be necessary to initiate a daily control system covering:
 1. The use of raw materials
 2. The actual production time
 3. The maintenance costs
 4. A correct distribution of labour
 5. The differentiation between fixed expenditure and variable expenditure.

22. Before long new charts will be submitted to you. They will enable you to obtain a higher efficiency while reducing red tape to a minimum.

Chimboto, June 16, 1972

ECONOMIC SITUATION OF SIDERPERU

JANUARI - MARCH - 1972

x 700

SOLES
(millions)

x 600

x 500

x 400

x 300

x 200

x 100

TOTAL COSTS

SALES

PL

LOSSES

variable costs

unit costs

20

20

30

40

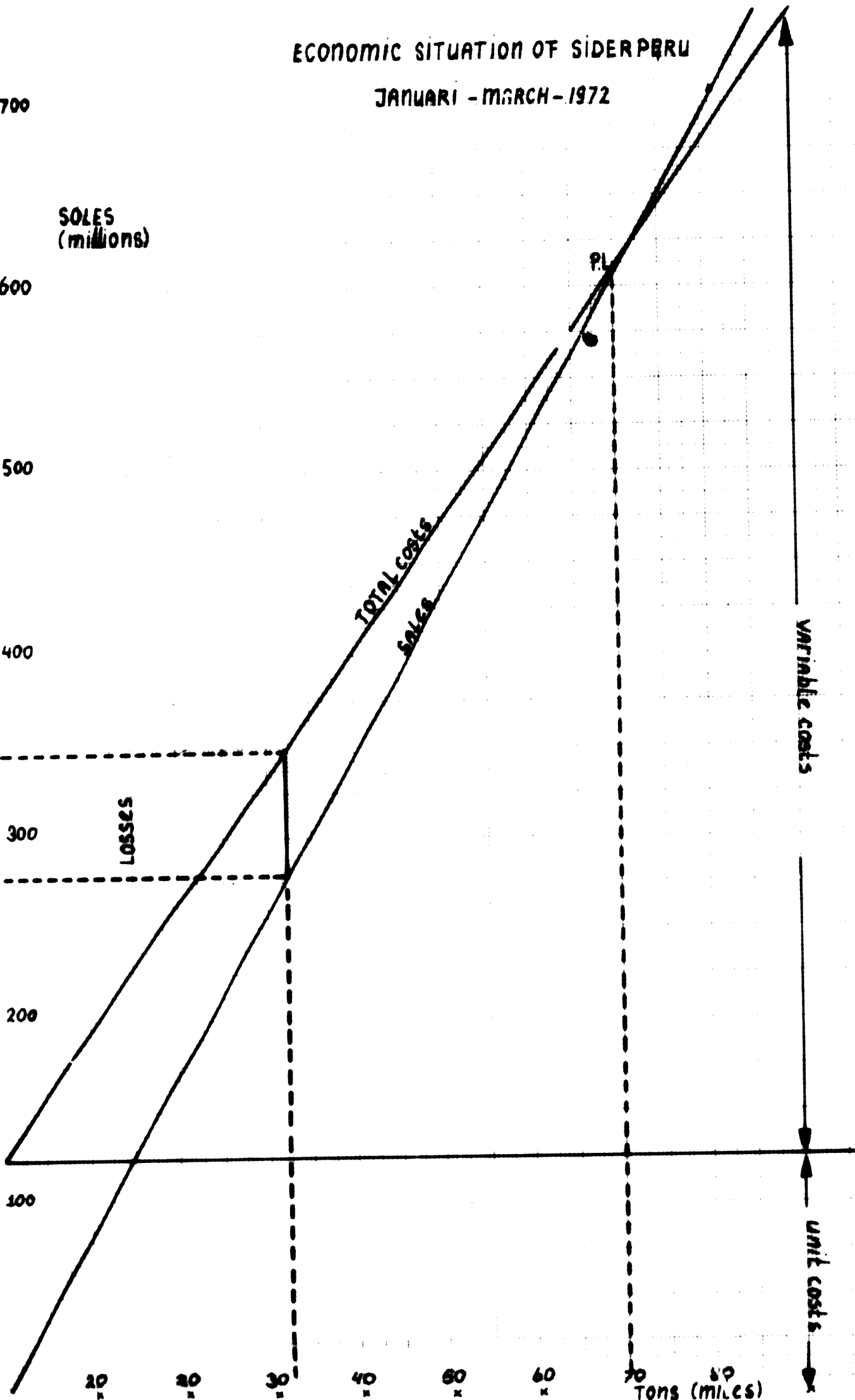
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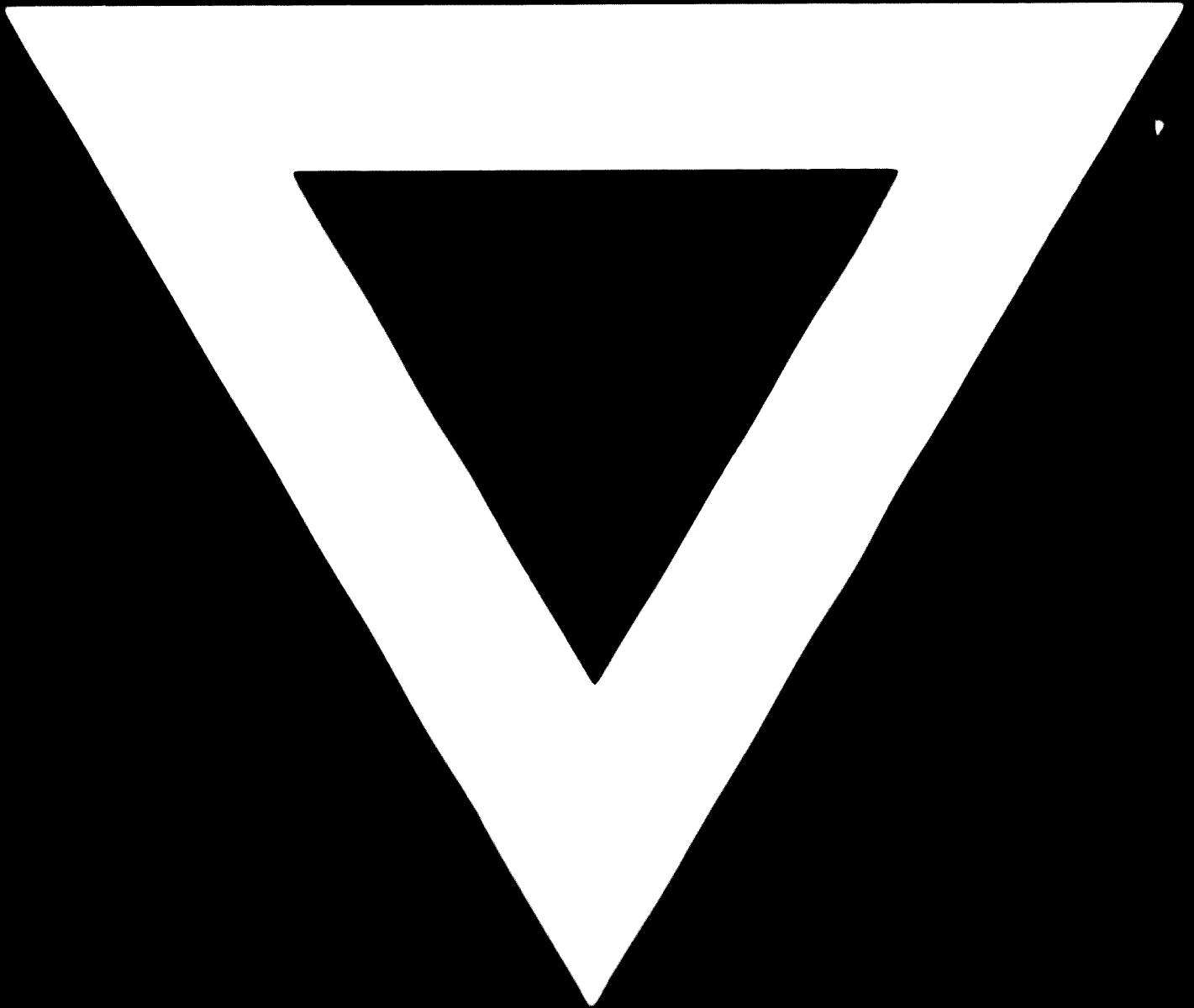
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Tons (miles)



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