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02713

P. A. INTERNATIONAL MANAGEMENT CONSULTANTS LIMITED

CLIENT United Nations Industrial Development Organisation (UNIDO)

DATE 26th August 1971

FROM P.A. Project Team

REPORT NO. Supplement to Final Report

SUPPLEMENT

TO

FINAL REPORT

Contract No. 71/25

Project YUG-SF-11

"Assistance in Organisation and Management

of the Company

Djuro Djaković, Slavonski Brod"

A Joint Project with

Yugoslav Centre for Industrial Organisation and Development,

Belgrade, Yugoslavia

SUPPLEMENT

TO

FINAL REPORT

Contract: No. 71/25

Project: YUG-SF-11

"Assistance in Organisation and Management

of the Company Djuro Djaković, Slavonski Brod"

Introduction

The [redacted] final report has been prepared in two parts:

(a) a main document covering the terms of reference for the present consulting project and fulfilling the contract between the Yugoslav Centre for Industrial Organisation and Development and the Company Djuro Djaković;

(b) this supplement which covers questions of interest only to UNIDO, YCIOD and P.A. International Management Consultants Ltd. concerning the proposed further consulting work at Djuro Djaković.

The contents of the main document are such that it can be submitted by YCIOD to Djuro Djaković in its entirety whereas the supplement is being submitted by P.A. only to UNIDO and the Centre.

Future Consulting Programme for Djuro Djaković

The main report describes the total consulting programme required for the implementation phase of the Djuro Djaković project. This total programme will be a joint enterprise of YCIOD (assisted by the UNIDO YUG-11 Experts) and P.A. International Management Consultants Ltd. We have considered very carefully and discussed at length with the Director of the Centre and the UNIDO Project Manager the question of the most effective degree of involvement of foreign consultants in the project.

A balance must be achieved between the following factors:

(a) ensuring that the consulting project is successful from Djuro Djaković's viewpoint, thus enhancing the reputation of the Yugoslav Centre;

(b) using the project as a major vehicle for P.A. training of consultants of the Centre and its member Institutes;

(c) conserving the UNIDO funds allocated for the use of foreign consultants over the whole YUG-11 Project.

The effect of the first two factors is to increase the involvement of P.A. in the project and of the third to decrease it; and in the proposals which follow for the use of our services we have possibly over-weighted the third factor.

It is therefore necessary to say that an essential condition for the success of the project will be that the Centre and Institute can assign it very able and industrious English-speaking consultants who can be equipped by training to carry out the project very effectively at the end of the period of full-time operating of P.A. consultants.

Training of Yugoslav Consultants

It is of the utmost importance that the Djuro Djaković project be used as a training vehicle for consultants of the Centre and its member Institutes. In each of the areas of Production, Management Accounting and Marketing, the P A consultant assigned to the project will take his Yugoslavian consultant counterparts through the full training course given to P.A. consultants in the area concerned. This training will be given during the project, and formal training sessions will occupy one half-day and two evenings each week for a period of from 12 to 15 weeks for each trainee. The Yugoslav consultants will be equipped with P.A.'s training manuals covering the area concerned and will prepare in their "free" time training reports and answers to exercises for each "part" of the course. Each P.A. consultant will link practical work on the project itself to the training material; and will prepare formal appraisals of his counterparts progress.

In addition it is recommended that groups of about 4 or 5 Yugoslav consultants who will participate in the project and the above training should undertake in the United Kingdom a Consultants Training Course which would follow closely the programme which is given to all new P.A. consultants. From the outline of this course which is appended it will be seen that the objective is to impart an understanding of the practice of management consultancy as such and to set each specialist area of consulting work into the perspective of all other areas and of the enterprise as a whole.

Four weeks of formal training sessions and interviews and discussions in London would be followed by a week of visits to client enterprises to inspect actual consulting projects and review the approaches used and the benefits obtained.

We would assign an experienced consultant full-time to organise the course, including the inputs of the various P.A. lecturers and divisional heads, conduct many of the formal sessions and guide and assist the group generally.

Our fees for each of these courses would be $US 6,000, exclusive of accommodation, subsistence, travel and other expenses incurred by the Yugoslav consultants. Assuming that two courses would be needed during the Djuro Djaković project, our total fees for training would be $US 12,000.

P.A.'s Consulting Input at Djuro Djaković

As indicated earlier, it has been considered desirable to limit P.A.'s participation in the project to a practical, safe minimum. It is therefore foreseen that the P.A. consultants would draw up the programme of consulting work for each major element in the project programme, coordinate the design of the main systems and guide the first stages of installation of these systems; they would also be mainly responsible for drawing up and initiating management appreciation courses concerning the new systems and concepts. The project team from Djuro Djaković and the YCIOD (and Institute) consultants would continue work on design of sub-systems and systems modifications after the period of full-time operating of the P.A. consultants and would undertake the major part of the installation work. During this latter period, P.A. consultants would make periodic visits to review progress and give additional guidance.

It is proposed to assign the following types of P.A. consultants to the project as Djuro Djaković, Slavonski Brod:

Project Supervisor, as team leader and also to cover the consulting areas of:

Organisational Structure, and
Management Development.

The project supervisor would also coordinate any support services required of P.A. in the United Kingdom. An initial period of three weeks would be spent full-time on the project. Then the project supervisor would make visits of one week about every three weeks for the first few months and afterwards visits of one week at decreasing frequency. We have allocated in total 18 consultant-weeks for the project supervisor post over the duration of the project.

Consultant in Management Accounting, to cover the areas of:

Accounting and Cost Accounting, and
Management Information and Control System.

This consultant would work full-time on the project for a period of 25 consultant-weeks and would thereafter make 6 visits each of one week to review progress and give guidance to the Yugoslav consultants and the Djuro Djaković specialists in the Management Accounting/Information Systems area. A total of 31 consultant-weeks has therefore been allocated for this.

Consultant in Production, to cover the areas of:

Production Planning and Control,
Labour and Material Standards,
Plant Layout,
Materials Management.

This consultant would work full-time on the project for 35 consultant-weeks and would thereafter make 6 visits of one week each to guide the work of the Yugoslavian consultants and Company specialists. A total of 41 weeks has therefore been allocated for this area.

Consultant in Marketing

This consultant would work closely with the UNIDO Expert for a continuous period of 16 consultant-weeks. Thereafter it is considered that the UNIDO Expert would give the necessary continuing guidance to the Yugoslav consultants and Company specialists in the marketing area.

The proposed P.A. input is, in summary:

	Consultant-Weeks
Project Supervisor/Organisation Consultant	18
Consultant in Management Accounting	31
Consultant in Production	41
Consultant in Marketing	16
	106

Cost of P.A. Input

Our charges corresponding to the above programme would be as follows:

	$US
Fees: 106 consultant-weeks at $US 1,000 per week	106,000
Subsistence Expenses:	
700 days at $US 18 per day	12,600
International Travel:	8,600
Total	$127,200

The average total charges per consultant-week would thus be $1,200 and it is proposed that billing should be based on that rate. Consultant time would be accounted for in half-days, normal working weeks being 5 days each of eight hours. Consultant time would include travelling time and statutory holidays but would not include sick leave, annual leave and consultants' voluntary abscences. Monthly billing is proposed.

The P.A. Consultant Team

The project would be under the control and responsibility of the International Development Division of P.A. International Management Consultants Ltd. The director of that Division, Mr. W.T. Utting who has participated in the current phase would continue to be involved personally in overall direction of the work and would make four inspection visits to Slavonski Brod and Belgrade during the course of the project.

It is expected that Mr. G.A.E. Hogg, the Team Leader during the current phase, can be made available for three weeks at the start of the implementation phase to negotiate final agreement to the main organisational structure for the Company and to brief and introduce the incoming Project Supervisor.

Nominations of consultants for the other project posts will be submitted when we have an approximate indication of the timing required for the start of the project. Dependent upon his commitments at that time, it is hoped that Mr. D. Nicholson, a member of the present project team, would be the Production Consultant for the next phase.

A practical point which should be mentioned in connection with the assignment of our consultants is that two of them would be located with their families in Slavonski Brod for periods of about 6 and 8 months; it would therefore be necessary for the Company Djuro Djaković to make available two good standard furnished apartments at reasonable rentals.

Project Relationships

Special mention should be made of the happy and effective relationships which have been built up during the current project and which have established a pattern for the cooperation needed on the next phase at Djuro Djaković and, indeed, for similar projects elsewhere in Yugoslavia.

This has been an unusual management consultancy assignment in that instead of the normal two-party (client-consultant) relationship, four parties have been involved:

- UNIDO, represented by the YUG-SF-11 project team;
- the Yugoslav Centre for Industrial Organisation and Development;
- the Company, Djuro Djaković;
- P.A. International Management Consultants Ltd.

Each of these groups has had particular commitments and responsibilities vis-a-vis one or more of the others and it was therefore very important to achieve an overall unity of purpose and approach. We believe that this common ground was found in full measure and that the project has been very successful as a result. This has been a function not of mechanisms and procedures but of personal attitudes and goodwill on the part of all four groups.

Here we would particularly like to acknowledge the abilities, guidance, support and friendliness of Mr. Everett Kimball and Mr. Alan Eames of the UNIDO team and Dr. Slobodan Ristić and Mr. Branko Černovšek of the YCIOD.

CONSULTANTS TRAINING COURSE

OUTLINE OF TOPICS

Week 1

1. Reception and Outline of Course
2. General Orientation to the Operations of a Consulting Firm
3. The Nature of a Consultancy Project
4. The Consultants Approach
5. Corporate Planning - Interview and Discussion with Senior Consultant in this Field
6. Business Administration Exercise
7. Finance and Administration - Interview and Discussion with Senior Consultant in this Field
8. Report Writing
9. (a) Making a Presentation to Management
   (b) Film "Anatomy of a Presentation"
   (c) Practice in Making a Presentation
10. Dealing with People (Human Relations Generally)
11. Marketing - Interview and Discussion with Senior Consultant in this Field
12. Computer Sciences - Interview and Discussion with Senior Consultant in this Field
13. Creative Thinking and Brainstorming
14. Writing Memoranda and Telephone Technique
15. "In Tray" Exercise

Week 2

1. The Analytical Approach of Consultancy, including Case Exercise and Presentation
2. Dealing with People (Developing Individuals)
3. The Anatomy of Management
4. Mathematical Approaches
5. Management Development
6. System Analysis: Organisation and Methods, with Case Exercise
7. Report Writing
8. Network Analysis: Introduction
9. Management Information: Control Statements

Week 3

1. Marketing Principles
2. Introduction to Computers, with Film, and Orientation to Computer Terminals
3. Use of Control Statements for Managers and "Action Meetings"
4. Marketing Case Exercise
5. Training Clients' Staff
6. Dealing with People (Persuasion), including Exercise with Video-tape
7. Practical Visual Aids, with Film
8. Use of Visual Aids
9. Management Accounting
10. Film "Managing Time"
11. Leadership and Management Style

Week 4

1. Computer Sciences
2. Management Fundamentals
3. Management Accounting with Exercises
4. Training Clients Staff: Exercise
5. Marketing Case Study
6. Business Exercise
7. Management Consultancy: Recapitulation
8. The Client's View of the Consultant
9. International Consultancy

Week 5

The Consultant at Work;Visits to Client Enterprises for Discussions with Operating Consultants and Client Executives

P. A. INTERNATIONAL MANAGEMENT CONSULTANTS LIMITED

CLIENT United Nations Industrial Development Organisation (UNIDO)

DATE 26th August 1971

FROM P.A. Project Team

REPORT NO. Final

02713

FINAL REPORT

Contract No. 71/25

Project YUG-St-11

"Assistance in Organisation and Management

of the Company

Djuro Djaković, Slavonski Brod"

A Joint Project with

Yugoslav Centre for Industrial Organisation and Development,

Belgrade, Yugoslavia

CONTENTS

A - INTRODUCTION

Aims and Objectives

This report sets out the results of an initial survey of the Company of Djuro Djaković, Slavonski Brod, in which the Company's operations, organisation and management practices were examined in some detail.

The objectives of this project were:

a. to examine the possibility of improving management practices and operating conditions of the Company
b. to design and outline new organisation structure for the Company
c. to develop further the skills and techniques of the members of staff concerned from the Centre for Industrial Organisation and Development and from Djuro Djaković.

Survey Method

The survey was carried out by a group made up as follows:

a. Four members of staff of the Centre for Industrial Organisation and Development, Belgrade, with Branko Černovšek, the Deputy Director of the Centre as leader
b. Six members of staff of the Company of Djuro Djaković with Mirko Čavar, seconded from his appointment of Assistant General Manager, as leader
c. Three members of P.A. International Management Consultants Ltd., with Ewart Hogg, a Senior Consultant, as leader.

Three combined operating teams were established each comprising members from CIOD, Djuro Djakovic and P.A. In general terms the Djuro Djaković operations were divided into Financial aspects, Production aspects and Organisational and Marketing aspects and each was tackled by a combined team.

A detailed programme of work was drawn up for each combined team in gantt chart form cover the following three main stages into which the complete survey was divided:

a. Fact Gathering
b. Analysis of facts and diagnosis of problems
c. Recommendations for improvement.

Acknowledgements

We would like to say at the outset how much the members of P.A. International Management Consultants Ltd. appreciated the willing co-operation and hard work of all concerned. In particular we would like to thank Mr. Branko Černovšek and Mr. Mirko Čavar for their help in organising the various stages of the project and for providing a vital contribution to the survey. Especially we would like to thank Mr. Alan Eames of the UNIDO YUG-11 Project staff for his considerable support and good counsel.

B - REPORT SUMMARY

Fact Gathering

In order to ensure that all the relevant facts and data were gathered systematically ten Checklists were prepared in both English and Serbo-Croat. These lists which were based on P.A.'s experience of similar situations elsewhere covered the following management areas:

a. Overall Policy and Control
b. Financial Appraisal
c. Control Systems
d. Organisation Structure
e. Management Appraisal
f. Personnel
g. Marketing and Selling
h. Product Development
i. Production
k. Purchasing

The three combined teams then carried out investigations in each of the following management areas:

Team A
(using Checklists a, d, e, f, g and h)

- Organisation Structure
- Corporate Planning
- Management Training and Development
- Salary and Wage Structures
- Marketing and Selling
- Product Development
- Transport and Warehousing

Team B
(using Checklists b, c and k)

- Financial Accounts
- Management Accounting
- Costing and Estimating
- Management Information Systems
- Purchasing

Team C (using Checklist i)

- Engineering
- Production Planning and Control
- Production Methods
- Stock Control
- Quality Control
- Maintenance

Team A included the leaders from three organisations involved and worked with the general guidance of Ewart Hogg of P.A. This team also co-ordinated the work carried out by Teams B and C.

Team B worked with the general guidance of Klas Gardberg of P.A. who specialises in Management Accounting and Controls, and Team C with David Nicholson of P.A. who is an expert in production and allied functions.

Analysis and Diagnosis

When information on a checklist was completed it was discussed initially by a committee consisting of Branko Černovšek, Mirko Čavar and the consultants from P.A. Strengths and weaknesses of the current situation at Djuro Djaković were established and recommendations for action necessary for improvement or f.. further study in greater depth agreed as appropriate.

During this stage the P.A. consultants also gave informal instruction and information, both verbal and written, on the relevant management techniques and practices used in the UK. The principles of organisation and administration of the main management functions as well as of the structure of the Company as a whole were also discussed in some detail and the advantages and disadvantages of various courses of action debated. It was felt that using the project itself as a case study in this manner was the most effective means of improving the techniques and skills of the CIOD and Djuro Djaković staffs concerned and this method was employed throughout all stages of the survey.

After agreed recommendations had been drafted for the main management functions they were then discussed with the group as a whole and thereafter put forward as firm recommendations to the senior Company staff concerned.

The findings and recommendations are dealt with in detail in the main body of this report in six main sections as follows:

C. The Financial Situation

D. The Organisation Structure

E. The Sales and Marketing Situation

F. The Production Situation

G. Personnel, Development and Training

H. Programme of Implementation

A summary of the findings and recommendations is set out below:

General Findings

In many ways the Company's rate of growth has been remarkably rapid and successful over the 20 years or so up to 1968. Management has been vigorous, modifying its objectives and philosophies to suit changing requirements and reviewing the organisation structure at intervals to suit changing marketing and production situations.

It is nevertheless considered that Djuro Djaković is now at a critical stage of its development. Although the profit record was in the main satisfactory up to 1968 a loss was sustained for the first time in 1969. The situation improved slightly in 1970, but the profit achieved was still only nominal. Disturbing as this trend is, even more disturbing is the decline in orders received during the last two years.

Due to the long overall planning and production cycle this decline will be reflected in the results of 1971 and 1972 and in our view a comprehensive programme of re-organisation and re-orientation must be undertaken relatively urgently.

The objectives of such a programme would be:

- to maximise the volume of orders and sales
- to maximise profit margins
- to reduce manufacturing and administrative costs

Recommendations

These objectives would best be achieved in the quickest and most effective way if the Company had the assistance of outside consultants and it is therefore recommended that a joint project should be undertaken by Djuro Djaković and the Yugoslav Centre for Industrial Organisation and Development working with the general guidance of P.A. International Management Consultants Ltd.

The main body of this report includes detailed recommendations covering programmes for improvement in all the major management functions. The priority areas which should be covered by the project are as follows:

Company Organisation

- Organisation Structure
- Management Development and Training
- Income Distribution (Wage Structure)

Marketing

- Organisation, Policy and Planning
- Estimating, Pricing and Tendering
- Market Research and Information
- Statistics and Control Procedures
- Advertising and Promotion
- Product Development

Finance

- Financial Accounting
- Cost Accounting
- Management Accounting and Control
- Administrative Cost Reduction

Production

- Production Control
- Prodcution Standards
- Plant Layout and Methods
- Material Management

A tentative timetable in Gantt chart form covering the above sub-projects is included as Appendix H-A.

It will be seen from the timetable that the programme of work has been divided into four sub-projects which will be tackled simultaneously. Four teams will therefore be required and it is recommended that the same basic approach be used for this programme as was used during the initial survey stage when the team was composed of members from Djuro Djakovic, from YCIOD and from P.A.

In this case however it is anticipated that the Djuro Djaković team should consist of a Team Leader and 8 or 9 members. These must be high calibre executives willing to subordinate all other interests to that of completing the project successfully. The team should include if possible members with educational backgrounds and experience in engineering, accounting and/or economics and marketing.

C - FINANCIAL AND ADMINISTRATIVE ASPECTS

Approach and Background Factors

To establish a reliable picture of the present financial situation as well as of the main factors which have influenced the changes in company profitability, the Balance Sheets, Trading Statements and Cash-Flow Reports for the years 1968, 1969 and 1970 have been worked out on a consistent and comparable basis.

The layout of the Accounting System applied at Djuro Djakovic as well as the structure of the Balance Sheets are carried out strictly according to rules set by the Government to cover all enterprises. This is naturally a very helpful tool for inspection and control, and also facilitates exteranl inter-firm comparisons; the extensive reports to the Government are fully available.

The official Accounting System is, however, rather unwieldy, requiring a large number of transfers between the following groups of accounts:

0 - Fixed Assests
1 - Current Assets
2 - Current Liabilities
3 - Stocks
4 - Expenditures
5 - Production Costs
6 - Finished Goods
7 - Incomes from and Costs for External Sales
8 - Gain or loss from External Sales
9 - Financial Liabilities

Detailed instructions regarding the use of the system are given in a book of 370 pages, which, however, is not available in English.

While the system should be fairly well adaptable for enterprises with series production, the long contracts of Djuro Djakovic lead to complications in the transfers between the account groups. As consequent discrepancies between figures shown in different accounting reports are frequent, there seems to be a common feeling that the reports are not fully reliable.

There has also been a number of changes in application of the accounting system. A major change was carried out in 1968/69 when Balance Sheet items were completely revised and the basis for sales revenue and profit calculation was changed from invoices paid to invoices issued. This change in system hampered considerably the team's work on the comparative financial results given in this report. The findings as reported below, under the heading "Financial Situation", have been discussed with the Director of Finance and other persons concerned.

Financial Situation of the Company

It should be noted that in the financial analyses given in this section the results of the Company's activities in Western Germany have been excluded to give a true picture of the results of the Slavonski Brod operations. Further Personal Income (contrary to the prevailing system in Yugoslavia) is here considered as a cost in order to facilitate the evaluation of the results from the view of the Company as an economic unit.

The overall picture which has been established is that 1968 was the last of a series of three very good years. In the year 1969 there was a sharp turn for the worse, and an actual Net Loss occurred. 1970 gave a somewhat better but still unsatisfactory result, as shown in the table below:

Condensed Trading Statements

	1968	1969	1970
	(thousands of Dinars)		
Production Value (DD - Slavonski Brod)	285,532	291,782	414,466
Less: Materials and Services	144,875	177,551	255,485
" Production Personal Income	63,277	66,269	92,134
= Operating Margin	77,380	47,962	66,847
% of Prod. Value	27.0	15.0	16.15
Less: Other Costs	37,847	41,256	46,284
= Profit Before Depreciation and Tax	39,533	6,706	20,363
% of Prod. Value	13.85	2.3	5.4
Less: Deprecaition	7,977	12,117	13,116
" Tax	7,563	9,066	6,794
= Net Profit	23,993	-14,477	403
% of Prod. Value	8.4	-3.5	0.1

The very marked fall in Net Profit from 1968 to 1969 appears to be a reflection of a combination of the following main factors:

- the small increase in Production Value, only 2.2%;
- increased competition - lower price margins;
- increases in Material Costs, not recovered in selling prices;
- some initial difficulties in the activities of the Engineering Department, which started up on 1st January 1968.

In 1970 there was a very appreciable increase in volume of production, some 42%, but material and personal income (PI) costs continued to be much higher (proportional to production value) than in 1968. However, compared with 1969 there was a small increase in the Operating Margin as a percentage of the Production Value.

The Company has, however, also encountered fluctuating profits in previous years probably due to the effects of inflation, devaluation and financial restrictions. In the years 1962-66 the Net Profit as a percentage of Value of Production was as follows:

1962	5.5%	1965	4.2%
1963	1.1%	1966	9.1%
1964	1.3%		

The Trading Situation

The full Trading Statements (Appendix C - A) confirm the overall picture given above. The Operating Gross Margin as a percentage of Production Value fell from 27.0% in 1968 to 15.0% in 1969 and recovered to 16.15% in 1970. The corresponding Operating Net Profit for each of these years was:

1968	14.6%
1969	-0.2%
1970	2.15%

To establish a more realistic and comparable picture of the fluctuations in profitability during these years, some corrections have been made to the Company's official trading statements. These corrections are described in Appendix C - B.

One particular cost item deserves to be mentioned here. This is the item "Losses due to Earlier Activities" which is analysed in Appendix C - C. These losses, due in the main to cancelled invoices, penalties for delivery delays and interest on delayed payments for materials, are very high, 12,482,671 N.D. in 1970, or over 3% of the External Sales. Considering that the Company's Net Profit for 1970 was 403,000 N.D. these losses constitute the difference between a poor and a reasonably good year. They also indicate that considerable attention should be given to improving Estimating and Planning as well as Production and Quality Control.

Net Worth of the Company

According to the Balance Sheets (see Appendix C - D) the Net Worth of the Company has developed as follows:

	Official	M.Dinars	Corrected
1967	174,841		180,304
1968	196,963		204,297
1969	200,124		189,820
1970	211,587		190,223

Thus, the Net Worth has remained in a static situation for the last three years, and when inflation is taken into account the real Net Worth of the Company has actually been steadily declining. This is a reflection of the relatively low profit levels achieved together with the policy of maximising distribution of personal income. As long as extensive bank credit is available to finance expansion of operations, there may seem to be little need for additional self-generated capital from retained (undistributed) profits. However, it would seem prudent to restrict the distribution of future higher levels of profits and thus to achieve an increase in Net Worth.

Brief comments on various Balance Sheet items are as follows:

- The increase in Value of Production from 1969 to 1970 (42%) was accompanied by an increase in Debtors of 72%;
- Foreign currency holdings increased considerably due to the good results of the operations in West Germany;
- There has been a very large increase in Creditors (1970 = 273% 1968) which has helped greatly to finance the expansion of business;
- The contract under which Ferrimport now holds major steel stocks for the Company has resulted in a marked reduction in Raw Materials inventory;
- Marketing conditions in the industry are reflected in the increase in Long Term Credit given to customers and banks (from 71.2 M Dinars in 1968 to 241.9 M Dinars in 1970);
- Long Term Loans to the Company have increased very rapidly from 68.6 M Dinars in 1968 to 234.0 M Dinars in 1970.

Individual Factory Results

The factory results below are based on the Trading Statements of the separate units with some adjustments, for example, distribution back to the factories of "profits" of central service and administrative units.

The following table gives the resultant broad picture of the contributions to total profit of the various factory units. It should be noted that the apparent heavy loss of the Assembly unit is probably largely due to the accounting conventions adopted by the Company to determine transfer costs between factory units.

Factory	1968		1969		1970	
	Net Profit (1000 N.D.)	% Total Revenue	Net Profit (1000 N.D.)	% Total Revenue	Net Profit (1000 N.D.)	% Total Revenue
TOPI	14,480	12.6	3,664	3.5	-	-
TŠV	3,621	-99.0	-3,898	-3.5	3,106	1.4
Assembly	6,962	17.4	-5,662	-14.2	-5,454	-12.3
TČK	2,065	8.4	1,969	9.0	1,099	3.4
TDS	751	14.7	971	6.4	728	3.2
Foundry	441	5.8	432	5.5	696	6.3
Maintenance	644	7.2	342	3.5	1,022	6.4
	22,122	6.6	-2,143	-0.6	403	0.1

This table indicates clearly the need and scope for cost reduction and profit improvement in <u>all</u> the main factories.

External Comparisons

It is of interest to see to what extent other Yugoslavian enterprises in this general field of industry have performed in the years 1968, 1969 and 1970. The comparison presented in Appendix I - 1 is primarily based on a study made by Mr. Savkic. The conclusion is that there has been a stagnation in business rather than a nation-wide recession. For the nine enterprises taken into the comparison the year 1969 compared reasonably well with 1968, with an overall 2% rise in volume and a stable profit. In 1970 the enterprises showed a 3.5% decrease in volume but nevertheless a 20% increase in profit.

It seems, therefore, that the sharp fall in Djuro Djakovic profitability in 1969, as well as the increased volume in 1970 does not fit into the general national pattern.

Organisation of the Finance Function

At present, responsibility for the financial function is fragmented.

The Economic Department is responsible for preparing the annual Plan and produces regular (monthly) statistical reports.

The Finance Department is responsible for financial and cost accounting and calculation and payment of personal income.

The Engineering Department has a section which is responsible for arranging credit for customers.

The Purchasing Department arranges credit from suppliers.

In section D of this report, it is recommended that a reconstituted Finance Department should be responsible for all financial matters, with emphasis on Management Accounting and the Management Information System.

Management Information and Control Systems

The overall picture of the present Management Information System may be summarised as follows:

- a large amount of basic information is collected and disseminated;
- the delivery times for existing reports are reasonably short and the punctuality good;
- much potentially useful information is available, especially on the distribution of Personal Income, but considerable improvements could be introduced in the presentation and distribution of the data;
- the reports are not selective, according to the needs of the users;
- the analysis of facts in the reports can be improved greatly as well as the frequency of presentation, so that they can be used as a guide and spur to managerial action to improve results;
- through inter-linking of information from different functional areas, more useful instruments for decision could be produced;
- the present reports give little useful analytical information concerning marketing and quality control aspects;
- vital information regarding the true profitability of products and contracts is missing;
- there are 50 recipients of the whole of the present monthly report which is a document of some 40 to 50 pages.

There is great scope for improving the present Management Control System which is based on the yearly Plan. For the year 1971 this is a duplicated book of 169 pages giving much and detailed information regarding Organisation, Sales and Production Volumes and Values as well as the planned Material etc. Costs, Personal Incomes and Financing and Net Profits of the Production Units. The yearly totals are further split up into quarterly plans and 61 items of "Other Costs" are distributed to the various units and subdepartment

In monthly reports for individual units, actual and planned figures are compared for the current month and the year to date. Another monthly report shows actual sales against plan; and very detailed data on Personal Income are given in further reports.

Monthly trading statements are prepared for 35 different departments and sub-departments and, in these, distribution of costs to units is unnecessarily detailed. For instance, there are some 50 to 60 items of "general costs", some direct and some allocated, which include controllable and non-controllable items such as restaurant, water, stationery, power, civil defence and workers clothing.

A feature which seems to detract from the value of the present information comparing actual results against Plan is that the Plans are thought to be too optimistic. Since 1967 the average actual volumes of output achieved have been from 83.9 to 87.6% with some Units as low as 60%. The Plan for 1971 seems somewhat unrealistic, for example, expecting output of 217.8 M. Dinars for TŠV or 36.3% over the extraordinary good result for 1970. With a large part of capacity sold when the Plan is made there should not be great difficulties in establishing fairly reliable targets.

Another factor affecting actual achievement is the present confusion regarding delivery times for contracts: a realistic plan must be based on realistic delivery times.

Cost Accounting and Estimating

The present procedures for cost accounting are complex but produce little information of value for control of costs, for calculation of profitability of contracts of for improved estimating of costs and selling prices of contracts.

Some of the features of the present costing system are as follows:

- General Company Overheads for example, interest, security service and internal transportation, are allocated to Factories and Factory Subdepartments on a number of different bases;
- the various Administrative Departments and the Engineering Department negotiate yearly contracts with the Factories for their services to the Factories for the year;
- for each Factory Subdepartment (production section), only one Cost Rate per Working Hour is established although there may be different grades of labour with different rates of payment within the Subdepartment and different elements of indirect cost for the various operations. This Cost Rate which is fixed for the whole year is used to calculate actual costs incurred on each Works Order (a works order is a contract or part-contract or product or internal "job");
- General Factory Overheads as well as the amounts allocated for General Overheads and Administrative and Engineering contracts are allocated to Works Orders as a percentage of the direct manufacturing costs;
- the Technological Preparation Section of each Factory works out an Estimate of the costs for each Works Order and also allocates "allowed" or "target" hours for the Works Orders to each Subdepartment;

- costs of Materials from stores are allocated directly to the Works Orders for which they were issued;

- all costs allocated to Works Orders are accumulated into the value of Work in Progress and the costs of completed Works Orders are deducted;
- the Cost Accounting section of the Finance Department accumulates the costs applied to each Works Order and issues to the Factories the total costs for each completed job;
- occasionally, for Works Orders where large differences are found between estimated and actual total costs, detailed calculations are made of materials used and labour hours expended. This requires an immense amount of new clerical work;
- the Monthly Reports for the Factories do not show the difference between estimated and actual costs for the work actually done during the month. They only compare actual figures for each cost-item with the fixed annual Plan figures, regardless of volume fluctuation.

Because of the above features, only overall figures for the apparent profitability of Factories and Subdepartments can be obtained from the present system. Realistic and regular information on the profitability of products and contracts cannot be established.

There is probably inaccuracy in the allocation of even direct costs to Works Orders. For example, if material issued from the stores for one Works Order is in fact in excess of the actual usage for that Works Order, the surplus is seldom returned to store. The material can then be used on other Works Orders without appearing on them as a cost. Again, "allowed hours" for production operations are based largely on out-of-date standards; thus the hourly costs allocated to Works Orders may be inaccurate.

The lack of systematic, up-to-date standards for operating time and for material usage is a severe handicap in estimating costs and selling prices of products and projects. In addition, refinement of estimating expertise is hampered by lack of regular analytical information comparing actual and estimated fugures for each of the main elements of costs for each important Works Order.

Purchasing

The Purchasing Department has a logical internal organisation but works under a number of severe difficulties.

Certain of these difficulties are external, for example, the marked sellers' market in the main materials used by the Company, delivery times from suppliers being in many cases from 6 to 18 months; in many cases, payment is required well in advance of delivery of the material. Import licences are difficult to obtain.

Other difficulties are internal. Information and requests from the Engineering Department and the Factories are often late, resulting in rush ordering and, sometimes, excessive buying prices. The lack of standardisation of materials as between the various Factories has inevitably increased the number of stock items which must be purchased, stored and controlled. Materials purchased for specific contracts are sometimes used for other urgent jobs.

For all the above type of reasons, it is very difficult to formulate systematic purchasing programmes and to make savings through negotiation of lower buying prices.

The area of purchasing cannot be considered in isolation from the other areas of materials management and control, including standardisation of materials, control of material usage and scrap, coordination with production control and effective stock control. For this reason, a major recommendation in Section D of this report is to establish a Materials Management department, responsible to the new Production Director and working closely with the Production Controller.

Other Administrative Aspects

The number of persons employed in the various Administrative Departments has increased only by about 7% over the past 3½ years, which appears reasonable in relation to the increase in annual Value of Production of the Company as a whole. However, the numbers in some departments appear to us to be high in relation to the usefulness of the information which they produce.

For instance in the Accounting Department, there are about 140 employees and the routines used are mainly manual, with the exception of six Ascot 170 Accounting Machines.

In our view there should not be a need for any increase in numbers of administrative staff to operate the new, revised and improved systems which we recommend in this report. In fact a reduction in staff numbers can almost certainly be achieved by rationalisation of the clerical work.

After the new systems are installed and operating satisfactorily, there may be scope for reducing administrative staff through the use of electronic data processing, using either a computer service bureau or the Company's own or shared computer facility. A computer feasibility study should be undertaken after the new systems are installed; this study should examine the possibilities for improved design of the systems using E.D.P. and also the most economic basis for the Company's use of E.D.P.

Recommendations

It will be evident from the foregoing discussion and findings that the Company's financial results over the last two years have not been good. In our view, part of the reason for this lies in the fact that the present accounting, cost accounting and financial reporting systems provide managers with very little useful information upon which they can formulate decisions or control effectively their areas of responsibility. In fact the present systems and their underlying accounting concepts may well motivate some managers to take inappropriate actions and decisions.

We therefore recommend a major review and redesign of the Management Accounting concepts and systems and the Management Information and Control System. This work would proceed as one integrated programme and should draw upon and tie in with the other improvement programmes recommended in this report. For example, the structure of the Management Information system and its control reports must follow the allocation of responsibilities in the new Organisational Structure.

The provision of the necessary control information in the most effective form and its vigorous use must be the direct purpose of the Management Accounting procedures. By its very nature, traditional accounting fails to cover many important aspects of business operations such as information about the future, data expressed in non-financial terms e.g. programme achievement, material and plant utilisation, customer service, etc. and information on external conditions.

To manage Djuro Djaković successfully, Management must have available appropriate control information covering all vital aspects of the business, which, in either the long or the short term, will influence profits. For this reason, a "total system" approach should be adopted with a view to providing Management with all the data and intelligance - financial and non-financial - that are needed to plan, operate and control the Company. It should be noted that each individual manager should be provided only with the information which is appropriate to his own area of responsibility and not with information which is not of direct concern to him.

The information on current activities which is provided to each manager must compare actual results against "target" or "planned" results. Thus the overall Plan for the Company must be built up from the sub-Plans (budgets) for all the various areas of managerial responsibility.

It is an important principle that each manager's control report should show variances between actual and budgeted amounts only for those elements of profit which he can control. Thus each individual can be held fully responsible for the variances shown in his control report.

The type of data which would be included in the control reports for the different levels and functions of Management would be somewhat as follows:

Report for Top Management

Current Trading
- analysis by type of activity (rail-wagons, steel structures, etc.)
- analysis of profit margins, volume and expense variances; (emphasis on key factors and control by exception).

Order Book
- orders received and on hand
- profitability of orders
- forward factory load

Sales Forecast
- sales forecasts by type of activity
- profit contribution forecasts

Funds Position

Balance Sheet

Source and Application of Funds

Cash Forecast

Capital Expenditure and Commitments

Control Ratios - e.g. Liquid Assets/Current Liabilities
Material Stock/Issues
W.I.P./Value of Production
Debtors - months
Creditors - months
Return of Funds Employed

Non-financial

Production	- Delivery Achievement
Service	- Value of Orders Overdue
	- Incidence of customers complaints, rejections, repairs, etc.
Product Development	- Design schedule achievement

Reports for Marketing

Sales	- analysis by product groups for: sales, contribution to profit, profitability variance, volume variance
Orders	- value of orders received
	- tenders in hand
	- forward load summary
	- tender achievement
Delivery	- delivery achievement
	- orders overdue
	- customers complaints
	- analysis by responsibility
Selling Expenses	

Reports for Production Managers

Programme Achievement	- analysis of actual production
Forward Load	- by key centres
Manufacturing Stocks	- raw materials in progress
Quality	- returns, rejections, charges, etc.
Material Utilisation	- analysis by type of excess cost

Analysis for each Factory of Loss of Profit by causes, e.g.

- Labour Productivity
- Lost Time
- Machine Breakdowns
- Rectification of Faulty Production
- Reject Production
- Material Wastage
- Volume of Work
- Manufacturing Overhead Expenses

Reports for Administrative Managers

Expenses	- analysis by items
Clerical staff	- numbers by departments: also rough standards, if possible
Debtors	- age analysis

An essential feature of the total management information and control system is that it would be a fully integrated system and not a series of unconnected reports. It would provide a chain or "pyramid" of control from sub-departments up to top management.

The frequency at which individual control reports should be issued will vary with the level and type of responsibility of the manager concerned. For example, managers of some Factory sub-departments might require information on some aspects, e.g. lost time, on a daily basis whereas the Marketing Director may need only monthly reporting on various sales trends.

As mentioned earlier, the financial accounting and cost accounting systems should be primarily designed to produce appropriate management information in the form of control reports. There will be a large programme of work involved in reorganising the cost accounting system in particular so that realistic cost standards can be established and used for control purposes, cost estimating and costing of products and contracts.

After the new Management Accounting and Control Reporting systems have been designed and installed, a programme should be undertaken to examine and rationalise all financial and administrative clerical work. As mentioned earlier, this would involve examination of the feasibility of using electronic data processing in the Company.

An essential part of the programme to design and instal effective Management Accounting and Control Reporting would be to guide and train all managers in the nature and operation of the systems and in the use which they should make of the control information which they will receive. Managerial control is not achieved merely by issuing reports but only when these reports are vigorously used to improve results and to take informed decisions concerning the future.

This aspect of managerial training is found in some detail in Section G of this report.

CORRECTED TRADING STATEMENTS 1968, 1969, 1970

Amounts in thousands of Dinars

	1968	1969	1970
External Ordinary Sales	342,060	391,222	452,948
Other Sales	-	7,960	14,498
Total External Sales	342,060	399,182	467,446
less Sales from Previous Year	59,602	84,474	-
Real External Sales	282,458	314,708	467,446
+ Closing WIP and FP	40,578	44,545	52,245
less Opening WIP and FP	37,504	40,578	44,545
Production Value	285,532	318,675	475,146
less West German Subsidiary Production Value, Slav.Brod	-	26,893	60,680
	285,532	291,782	414,466
less: Material & Services	144,606	164,433	238,957
: Non Production Services	269	13,118	16,528
	140,657	114,231	158,981
less Production Personal Income	63,277	66,269	92,134
OPERATING MARGIN	77,380	47,962	66,847
% of Production Value	27.0	15.0	16.15
Rent & Rates	454	705	435
Insurances	1,473	1,935	2,166
Heat & Power	5,002	6,898	7,550
OCCUPATION COSTS	6,929	9,538	10,151
Head Office, Personal Income	14,900	8,545	11,417
Engineering Dept. P.I.	-	9,488	13,590
Travel, etc.	5,501	8,016	9,092
Memberships & Other	356	976	517
ADMIN.& SALES COSTS	20,757	27,025	34,616
% of Production Value	7.3	9.25	8.4
Depreciation	7,977	12,117	13,166
OPERATING PROFIT	41,827	-718	8,914
% of Production Value, DD	14.6	-0.2	2.15
+ Interest received	-	5,876	10,570
less Interest paid	9,456	11,111	11,846
+ Other income	10,366	7,979	12,042
less Losses due to Earlier Activities	11,181	7,437	12,483
= PROFIT BEFORE TAX	31,556	-5,411	7,197
less Taxes paid	7,563	9,066	6,794
= TRUE NET PROFIT	23,993	-14,477	403
% of Production Value	8.4	-3.6	0.1
Profit Correction 1967/68	+6,463	-	-
Profit Correction 1968/69	-8,334	+8,334	=
Upgraded Value of Buildings	-	+4,000	=
= OFFICIAL NET PROFIT EXCLUDING WEST GERMANY	22,122	-2,143	403
Net Profit in West Germany	-	5,304	11,060
TOTAL OFFICIAL NET PROFIT	22,122	3,161	11,463

/ See following table

ANALYSIS OF ABOVE MATERIAL COSTS

	1968	1969	1970
	1000 ND	1000 ND	1000 ND
"Other" Material Costs	6,139	28,977	52,728
Western Germany Total Costs	-	21,590	49,619
	6,139	7,387	3,109
Total Materials and Services	146,540	251,589	351,030
	152,679	258,976	354,139
Less Internal Services	-	77,455	90,599
	152,679	181,521	263,540
% of Production Value	53.3	62.2	63.6
Value of Material Sold	7,406	3,341	42,422
Scrap & Material Sales	10,477	13,531	59,455
Transfer of Material for Heat and Power	5,002	6,898	7,550
Material Costs of Production	144,606	164,433	238,957
% of Production Value	50.7	56.1	57.8

Corrected Trading Statement

The Corrected Trading Statement for 1968, 1969 and 1970 as shown in Appendix C - A is based on the figures of the Official Statements but a number of corrections have been made to give a more realistic picture of results of the Slavonski Brod operations of Djuro Djaković.

Firstly, the change in 1968/69 of the system for accounting for value of sales has been corrected for. After transferring the appropriate amounts from 1969 to 1968 and from 1968 to 1967, the adjustments have been calulated as:

1968 - net reduction in Sales Value of 59,602,000 N.D.

1969 - net reduction in Sales Value of 84,474,000 N.D.

The corresponding adjustments to Net Profit reflected lower in the statement are:

1968 - reduction of 6,463,000 N.D.
addition of 8,334,000 "

1969 - reduction of 8,334,000 "

In order to establish Production Value, the Value of Work in Progress and Finished Product at the end and the beginning of the year are respectively added and subtracted.

Further, the value of Production of the Djuro Djaković subsidiary in Western Germany has been subtracted (as well as corresponding costs).

Our treatment of the cost of Materials and Services is shown in Appendix C - A. Here the material content of the Internal Sales has been subtracted, as they were from the Total Sales. In order to eliminate the effects of the large Material Sales in 1970, the Income from Material Sales has been subtracted and the Costs added. Further, Material Costs for Heat and Power have been transferred to Occupation Costs.

A revaluation of buildings in 1969 yielded an increase in their book value of 4 million N.D. This amount has also been deducted.

After these various corrections the "True Net Profit" is established, as shown in the statement.

Analysis of Account 730: "Losses Due to Earlier Activities"

Type of Loss	1968	1969	1970
	Thousands of New Dinars		
Bad Debts	-	12	97
Amounts Written off Invoices (due to faulty workmanship)	2,293	3,030	3,312
Allowance for Doubtful Debts	1,478	634	-
Unexpected Extra Manufacturing Costs	3,372	222	2,419
Unexpected Extra Material Costs	870	1,311	918
Lost Deposits, Penalities for Late Delivery and Interest on Late Payment for Materials Purchased	2,897	1,374	3,470
Other Items	71	28	67
Total	11,181	7,437	12,583
Factory Responsibility for above Losses*			
TOPI	4,353	3,803	6,499
TSV	4,300	910	3,100
Others	1,072	2,803	1,920
Total	10,103	6,716	11,520

* Differences in totals due to different times at which accounting schedules are made up.

BALANCE SHEETS 1968 - [illegible]

Amounts in thousands of [illegible]

	1968	[illegible]	[illegible]
[illegible]tors	67,[illegible]8	[illegible]	
Doubtful debts, less 10%	13,190	[illegible]	[illegible]
[illegible]	1[illegible]	[illegible]	[illegible]
[illegible], Bank	760	[illegible]	[illegible]
Foreign Currency	[illegible],236	[illegible]	[illegible]
[illegible]	[illegible],121	[illegible]	[illegible]
[illegible]	107,564	[illegible],218	[illegible],[illegible]77
[illegible]ors	[illegible]	[illegible]	[illegible]
Advanced payments received	[illegible]	[illegible]	[illegible]
Short term loans	6[illegible]	[illegible]	[illegible]
[illegible]	111,36[illegible]	[illegible]	[illegible]
[illegible]	- [illegible],735	- [illegible]	[illegible]
Raw Materials	70,276	[illegible]	[illegible]
Parts, etc.	[illegible],228	[illegible]	[illegible]
Work in progress	55,070	[illegible],[illegible]	6[illegible]
Finished goods	5,267	[illegible]	[illegible]
Correction for overvaluation of above	- 17,7[illegible]	- 14,[illegible]35	[illegible]
[illegible]	1,066	[illegible],36[illegible]	[illegible]
[illegible] INVENTORY	1[illegible],170	1[illegible],7[illegible]	[illegible]
Long Term Credit to Banks	22,634	3[illegible],[illegible]5	[illegible]
Other	48,401	9[illegible],[illegible]	1[illegible],[illegible]
Other Assets	5,061	[illegible],[illegible]9	[illegible]
[illegible] ASSETS	303,066	2[illegible],533	3[illegible]
[illegible] ASSETS	199,701	279,068	3[illegible]
Plant & Machinery	7[illegible],932	37,906	[illegible]
Unfinished investments	15,365	1[illegible]	[illegible]
Reserve for investments	[illegible],615	[illegible],634	[illegible]
[illegible] FIXED ASSETS	97,952	1[illegible],[illegible]05	[illegible],[illegible]37
TOTAL NET ASSETS	297,653	382,[illegible]73	[illegible],217
% of Value of Prod.	104.6	130.3	[illegible]
Secured loans	66,326	13[illegible],372	[illegible],[illegible]23
Unsecured Loans	2,078	7,667	10,[illegible]
Other long Term	42,096	43,080	5[illegible],[illegible]10
[illegible]	1[illegible],6[illegible]	182,3[illegible]	[illegible]
[illegible]	[illegible],[illegible]03	2[illegible],124	2[illegible],[illegible]27
[illegible]	-	-	-
[illegible]	[illegible],963	2[illegible],124	[illegible]

External (Inter-firm) Comparisons

The report prepared by Dr. Skočić compared statistics covering Djuro Djaković with those for the following nine other enterprises:

Tvornica parnih kotlova, Zagreb (TPK)
"Janko Gredelj", Zagreb ("JG")
"Jedinstvo", Zagreb ("Jed.")
"Metalna", Maribor ("Met.")
"Boris Kidrič", Maribor ("BK")
Mašinska industrija Niš (MIN)
"Goša", Smederevska Palanka (Goša")
"Vasa Miskin - Crni", Sarajevo ("VM")
"Bratstvo", Subotica ("Brat.")

We have adjusted the data for Djuro Djaković in a number of ways, for example:

- to exclude internal sales and sales of raw material from "Value of Production";
- to exclude the results of the subsidiary in West Germany from "Net Profit".

The resultant comparisons are summarised in the table below:

Item	Djuro Djaković			Average - 9 Others		
	1968	1969	1970	1968	1969	1970
Total Production Value (M. Dinars)	285	292	415	167	202	190
Index	100	102	145	100	121	114
Total Costs Excluding Personal Income (M. Dinars)	175	212	278	109	134	124
Index	100	121	159	100	122	114
Production Value per 100 Dinars Cost	164	137	140	153	153	154
Index	100	84	85	100	100	101
Net Profit (1000 Dinars)	22,122	-6,143	403	4,550	4,613	5,560
Index				100	102	122
Average Numbers of Employees	4,314	4,151	4,391	2,737	2,720	2,746
Index	100	96	106	100	99	100
Production Value per Employee (1000 Dinars)	66.2	70.3	90.3	61.1	74.1	69.4
Index	100	106	137	100	121	114
Average Monthly Personal Income (Dinars)	955	971	1,132	847	1,006	1,158
Index	100	102	119	100	119	137

D - ORGANISATION STRUCTURE

Introduction

In addition to obtaining information by the use of checklists covering a wide range of organisational aspects the basic management attitudes and philosophies which influence the present organisation and which have led to the present policies and managerial procedures were established by means of personal interviews.

Formal interviews of between two and three hours were carried out with the General Manager and 21 of the senior executives. In the case of the General Manager and some of the Directors more than one interview was required. In addition information and opinions were obtained from a number of members of Djuro Djaković staff at all levels of the structure by means of informal interview.

Background of Current Situation

The company of Djuro Djaković started operating in 1922 when its principal activity was the repair of railway wagons and locomotives.

The main dates and events in its development since that time are as follows:

1923 - Started production of steel structures

1926 - Started manufacture of wagons and steam boilers

1937 - Manufacture of first steam lococotive

1939/45 - Factory practically totally destroyed by bombing (1939 labour force 1,800)

1951 - Introduction of the principle of self-management in Yugoslavia

1955 - Manufacture of first Diesel locomotive in collaboration with Jenbach Werke, Austria (1955 labour force 2,900)

1962 - Manufacture of first DD 1650 HP Diesel locomotive

1963 - Establishment of separate factories for TOPI, TČK, TŠV, Foundry, Maintenance and Assembly

1965 - Introduction of market-oriented economic policies in Yugoslavia

1968 - Formation of TDS centralised Machine Shop and of the Engineering Department comprising Offer and Sale Sections, Design and Drawing Officesand a Sales Finance Section (1968 labour force 4,300)

Apart from the period of depression in the early 1930s and the war years the Company has continued to expand its activities and to grow steadily.

Typical comparative figures for the years 1954 and 1970 are:

		1959	1970	Percentage Increase
Boiler Sales	in N.D.	11.304	67.403	495%
Outside Erection Sales	"	3.697	103.272	2.680%
Process Equipment Sales	"	14.478	39.676	173%
Steel Structure Sales	"	14.015	28.975	106%
Rail Vehicle Sales	"	45.818	159.642	248%
Total Sales	"	100.064	471.875	372%
Total weight of output - tons		19.974	26.242	31%
Labour Force		3.169	5.575	76%
Actual Average Earnings	"	193	1,216	528%
Real Average Earnings Base Year 1968	"	541	1,010	86%

It is apparent that over the years Management has been able to react successfully to the changing conditions and has adapted itself to take advantage of opportunities as they arose.

This has been particularly the case since 1963 when major changes were made to the management organisation. At that time considerable authority was decentralised to the TOPI, TČK and TSV factories and the Foundry, Maintenance and Assembly Departments and for the first time the company structure changed significantly away from the traditional functional form.

In a different way the establishment of the Engineering Department in 1968 further strengthened the organisation from a sales and marketing point of view and enabled the Company to tackle the developing market for larger, more complex projects.

The management organisation is now in the form set out in Summary in Appendix D - A. The main features of this structure are:

- The General Manager is directly responsible for thirteen major factories or departments and one staff department.
- The office staff organised in eleven main departments, totals 1,163 of whom 408, 35% are under the age of 35.
- Of the total of 20 Directors and Managers of factories or major departments, 10 hold the diploma of engineering in the VSS Grade.
- Of the total of 130 directors, managers and senior executives 63 are in the VSS Grade and of these 42 hold the diploma of engineering.
- In the eight factories and service departments there are 1,390 indirect workers and 3,316 direct producers.
- The total cost in wages and salaries of these departments and factories is set out in Appendix D - B. This shows that the total net earnings of office staff are 2,949,000 New Dinars per month and of all factory direct and indirect workers are 5,120,000 New Dinars per month. Earnings represent about 20% of all company expense.

Analysis of Present Structure

There is no doubt that there are features of the organisation of Djuro Djakovic which compare favourably with similar companies in Great Britain and elsewhere, e.g.:

- Despite the relatively poor monetary inducement to accept the responsibilities of a senior executive position there has been a continuing vigorous management willing to adapt its objectives and philosophies to changing requirements as outlined earlier in the report.

- The management structure has been reviewed at frequent intervals and modified to suit changing market and production situations.

- The Company has continued to grow in physical terms over most of its life and, for example, the labour force has more than doubled in the last twenty years and sales turnover has increased by about five times in the last twelve years.

- The average earnings of the workpeople have continued to rise and despite inflation, after correction for the rise in the cost of living, the increase is about 150% over the last twenty years.

- There is a forward development plan every year for the next twelve months and every four years for the following four years.

Current Problems

Although there are other favourable features of the management organisation in addition to those listed above there are also a number of clear signs that a basic revision of management aims, objectives, philosophy and organisation are required relatively urgently. These signs include:

- The net worth of the business in financial terms has not increased during the last three years (as set out in Section C - Finance). There has therefore been no real growth of the company during that period.

- The total volume of work increases every year but the resultant profit gets less and less.

- There are indications that productivity is falling in the factories, e.g., as a rough guide, over the last twelve years the total weight of output in tons has increased by 31% but the labour force has increased by 76%.

- Total income has increased by 3 3/4 times in the last twelve years but average earnings have increased by over five times.

There are in addition signs of increasing frustration on the part of both direct workers in the factories and of management at all levels.

During the interviews with managers and others one question asked has always been "Have you any difficulties which result from the present management organisation?"

It was significant that everyone had more than one difficulty. The following is a selection of difficulties which were repeated more than once:

- "I cannot get experienced staff."

- "There is difficulty in getting managers and supervisors"
- "I have too many activities to co-ordinate effectively."
- "The factories are always late in giving me the necessary information."
- "There are problems in co-operating with other companies on large projects."
- "There is no co-ordination of product development or technology development."
- "I have not got sufficient control data."
- "Distribution of profit for personal income is no incentive to the work people to increased effort."
- "Distribution is unfair and does not relate earning to the amount of real work done."
- "I am not completely clear about my responsibilities."
- "Cooperation between different factories and some departments is not good."
- "There is not enough money self-generated and credit is difficult."

The above is by no means an exhaustive list.

Analysis of Current Problems

The main features of the present management organisation which give rise to those and other problems and difficulties and which result in less than optimum control of the Company as a whole are as follows:

- The span of control of the General Manager is too wide to allow him to coordinate all activities as he would wish.

- There is division of responsibility for making financial arrangements with customers, for quoting delivery dates, for some aspects of purchasing, for loading up factory capacity and for arranging credit.

- No one has ultimate authority for selling prices.

- The incentive to become a senior manager or director is not strong enough, with the result that the average length of service of the 20 senior executives is only 2¼ years in their present appointments. Top managerial experience in all positions is therefore less than normal as compared with similar situations in the U.K. and elsewhere.

- The average length of service with Djuro Djakovic of the top 190 senior executives is 17 years and only 20 of these have been with DD for less than ten years. There have therefore been few new ideas contributed to the Company from other areas and experience.

- The selection of executives is carried out solely by the Management Board. Senior executives therefore have little or no part in the appointment of their subordinates.

- Forward planning is on the basis of volume of sales revenue rather than profit.

In addition to the above points perhaps the most significant feature of the current management organisation is that decentralisation (i.e., the delegation of authority to factories and allied departments) has gone beyond the point where it is beneficial for the Company as a whole. This has resulted in the following undesirable features:

- Any factory can load up its total capacity without regard to whether or not this will benefit the Company as a whole.

- Factories can subcontract work outside Djuro Djaković whilst other factories within may be short of work.

- The economics of a large scale organisation are lost, e.g., there is no coordination of purchasing and standardisation of materials.

- Directors of Factories and Senior Managers are motivated to optimise results in their factories or divisions at the expense of the enterprise as a whole.

- There is a preoccupation with the allocation of overheads and inter-factory pricing which brings no advantage to the enterprise as a whole.

Recommendations for Improvement

In establishing the changes in the management organisation necessary to improve control of the Company and to lay the foundation for the next phase of development, the main factors which were taken into consideration were as follows:

- Decentralisation of authority to other factories should be modified to eliminate the disadvantages listed earlier and at the same time preserve the desirable features of such an organisation as far as possible.

- Spans of control of senior executives should be reviewed to improve management effectiveness.

- As many as possible of the activities and functions should be grouped together according to homogeniety of objective and purposes served.

- Considering the difficulties outlined in Section E of this Report dealing with the Sales situation and with increasing competition it is desirable that the position of Sales and Marketing should be strengthened.

- With the increasing size and complexity of customer requirements it is desirable to co-ordinate and strengthen product and technological development functions, and to strengthen the engineering function in general.

- With materials for production accounting for about two-thirds of all expense, control of all aspects of material procurement and use should be improved.

- The importance of satisfactory administration of the staff and workpeople should be recognised by a strengthening of the personnel function.

- Improvement in conditions of service of directors, managers and other executives is required in order to provide the environment for a more stable, well motivated management team.

- Modification of the method of distribution for salaries and wages in order to provide the conditions for successful coordination of the activities of all factories and to provide a more direct incentive for the workpeople.

It is understood that the following possible developments are also under discussion at present and they have accordingly been taken into consideration in revising the management organisation:

- The centralisation of plate cutting and allied operations.

- The development of TDS to include the fitting and assembly of certain mechanisms, e.g., gearboxes.

- The development of new production in Electro Pogon both in volume and diversity.

- An increase in the volume of business in "turnkey" projects.

The recommended main improvements in the management organisation for Djuro Djaković are therefore as follows:

- The appointment of a Production Director who would be responsible to the General Manager for overall production plans and their achievement for the company as a whole.

- The appointment of a Production Controller who would be responsible to the Production Director for maintaining control procedures for all production functions and for providing the link between the Sales and Production functions.

- The appointment of a Materials Manager who would be responsible to the Production Director for all aspects of material procurement and use.

- The appointment of a Management Services Director responsible to the General Manager for the provision of assistance and advice throughout the Company on the application of modern management techniques. In addition he would be responsible for all aspects of Quality Control.

- The strengthening of the Marketing function including appointing a Marketing Director responsible directly to the General Manager.

- The appointment of a Technical Director who would be responsible to the Production Director for engineering research and development and allied functions.

- The strengthening of the Personnel function including making the Personnel Director responsible directly to the General Manager.

- The grouping of all aspects of finance and costing under the Financial Director.

- The merging of TDS, the Foundry and "new" work from the Maintenance Department (with the exception for the time being of Electro Pogon) into one Division.

- A review of the salaries for all posts in the management.

- The delegation to senior executives of the authority to appoint the members of staff of their own departments (with confirmation in the normal way of the Management Board). This is a most important principle as it encourages a corporate spirit within a department which is essential for optimum operating. In the same way the more junior executives in a department should have a similar opportunity of selecting their own subordinates.

- A review of the method of distribution of salaries and wages.

An outline of the proposed new organisational structure is set out in Appendix D - C and outline terms of reference for key positions are included in Appendix D - D.

Benefits arising from Recommendations

The benefits arising from these recommendations are as follows:

- A move away from the divisional form to a functional structure is generally recognised as providing the most powerful form of managerial and technical team.

- The number of Directors and senior managers reporting to the General Manager has been reduced from 13 to 5. This will allow a much more effective co-ordination of the principal functions.

- Co-ordination of all factory and allied activities by the Production Director with the help of the Production Controller will facilitate optimum utilisation of all facilities and resources for the benefit of the Company as a whole.

- The new appointment of Technical Director will provide co-ordination of research and development of both technology and product and will lead to a more effective use of the facilities provided by the Institute.

- Co-ordination of all financial and costing activities under the Financial Director will provide a closer control of finance and of the arrangement of credit.

- Centralisation of all activities in which material is involved will enable substantial savings in material cost to be achieved. In this connection it should be noted that every one percent improvement in material utilisation would save 2.50 million N.D. every year.

- The appointment of Contract Managers responsible to the Production Controller will provide improved control for large complex projects.

- Corporate planning will be more effective as the General Manager will now be supported by the minimum number of Senior Directors each in control of his own function.

Implementation

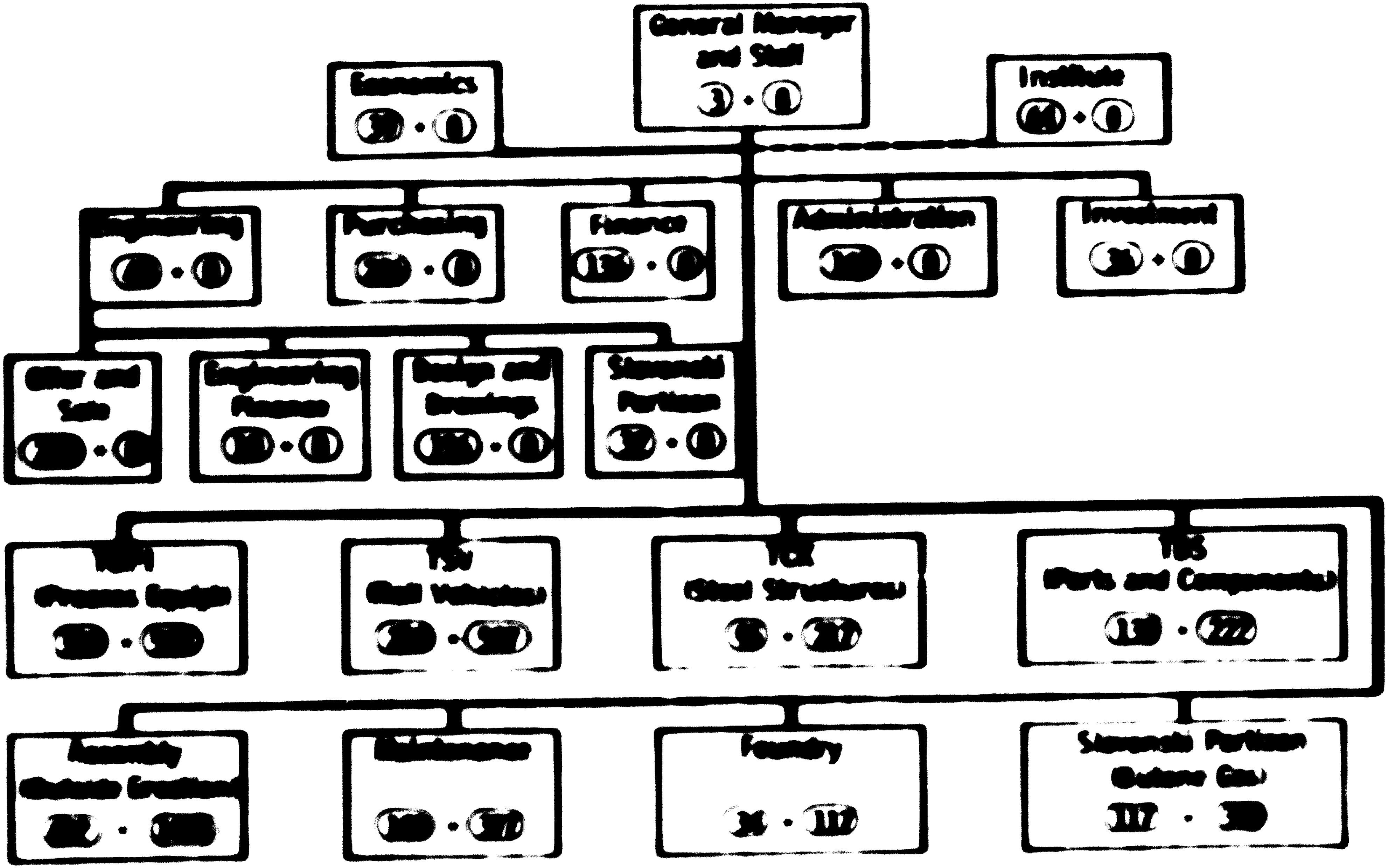
Although all the recommendations for improving the Company organisation are included in this report and terms of reference for the main appointments are set out in appendices there is necessarily still a considerable amount of detailed development work to be undertaken before the new structure can be successfully implemented. Not the least of the problems is the selection of executives for the various positions.

Detailed responsibilitess must be defined for all senior jobs within the structure, numbers of staff required established, utilisation of office space planned and outline procedures drafted to cover the main functions and activities

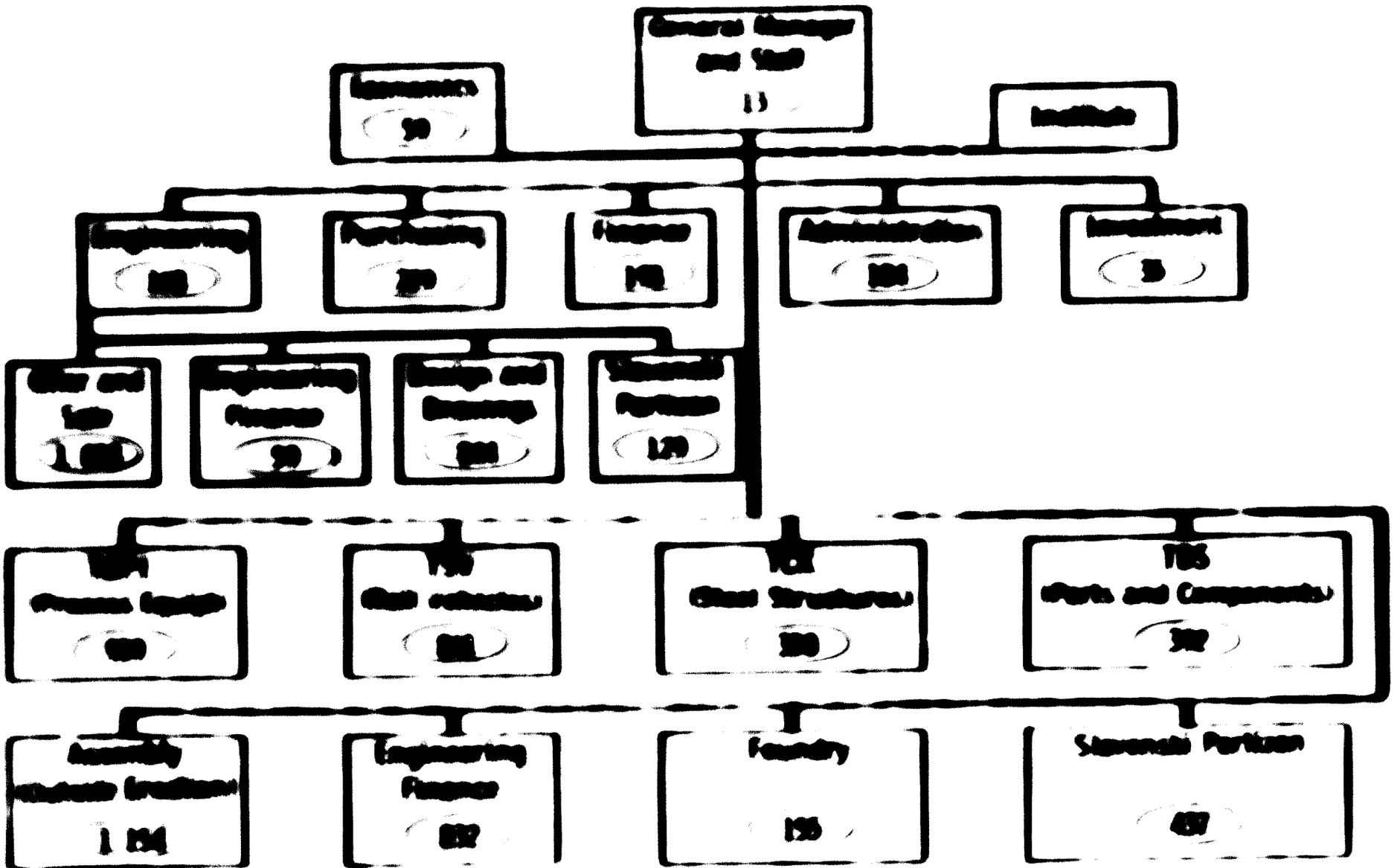
To a considerable extent these tasks link very closely with the implementation of the Management Development and Training recommendations set out in Part G of the report and the two projects should therefore be implemented as a whole.

For completely effective implementation the general experience is that outside consulting help is desirable and in this case would best be provided by a joint team from CIOD and P.A.

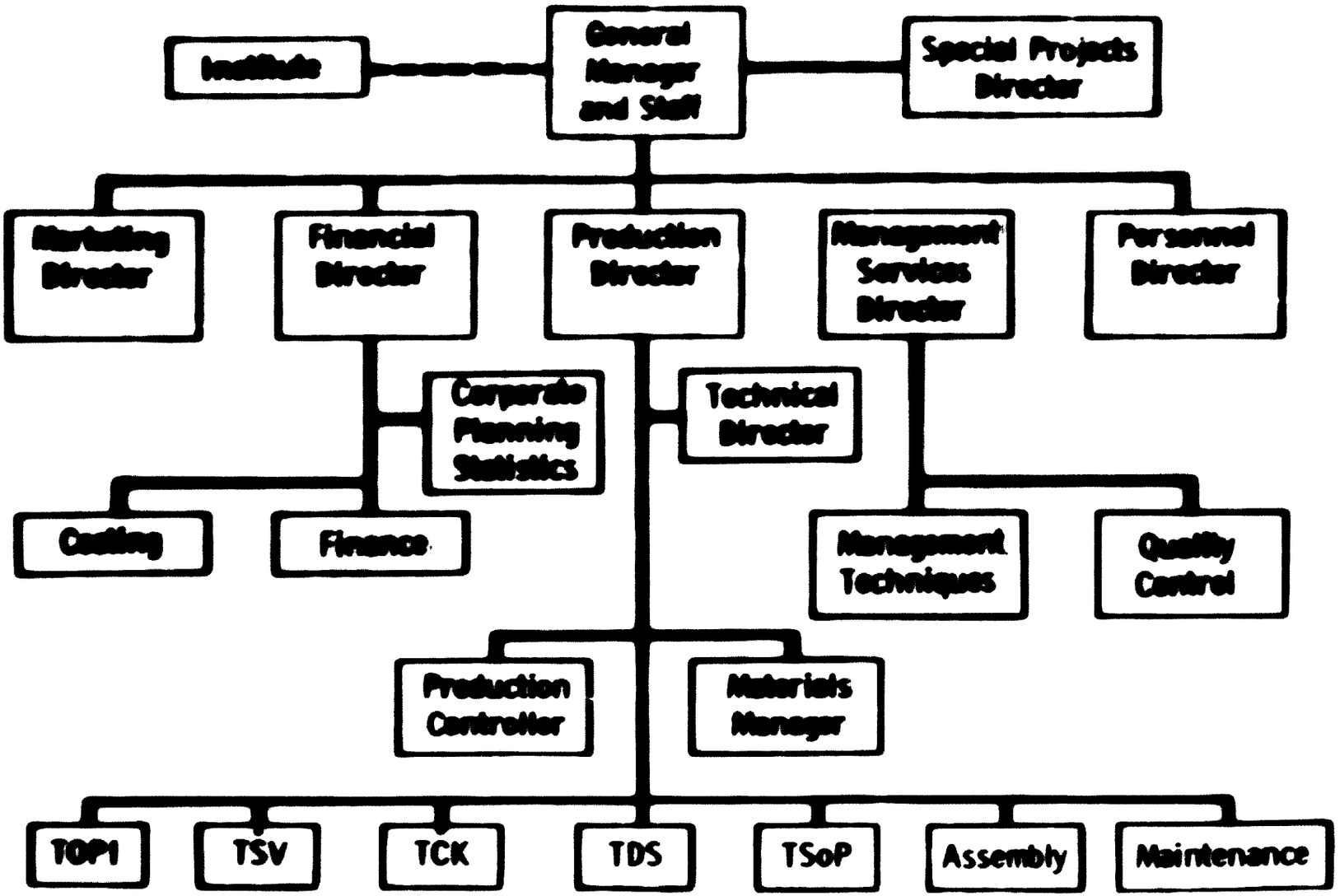
PRESENT STRUCTURE - NUMBERS EMPLOYED



Note: First figure is indirect staff (total - 2753)
Second figure is direct staff (total - 3306)



PROPOSED MANAGEMENT STRUCTURE



APPENDIX D-C

OUTLINE TERMS OF REFERENCE

This appendix lists outline terms of reference for the following key positions in the proposed management organisation:

a. General Manager
b. Marketing Director
c. Production Director
d. Financial Director
e. Management Services Director
f. Personnel Director
g. Technical Director
h. Factory Director
j. Production Controller
k. Materials Manager

a. General Manager

The General Manager's responsibilities can be grouped under two main headings - Planning Functions and Operating Functions.

Planning Function role

- To establish objectives for the Company and to ensure that these are communicated to the senior managers and executives.
- To ensure that the most profitable use is made of the Company's human, financial and material resources.
- To lay down overall financial policy with particular reference to return on capital and the overall trading policy.
- To determine and review long-term development plans and capital budgets.

Operating Function role

- To control the day to day operations of the Company within the policy agreed by the Kolegij.
- To ensure that general factory and departmental budgets are prepared.
- To consider the recommendations of the Sales Director and to decide after consultation which major enquiries should be pursued.
- To consider the recommendations of the functional directors and to decide on the final makeup of major tenders and quotations.

b. Marketing Director

- To plan, direct and control all activities concerned with the marketing and selling of the Company's products both in Yugoslavia and in other countries, within the framework of the Company's general policies in order to achieve the financial target.
- To define and recommend the most suitable markets in relation to the Company's physical, technical and financial resources and to keep this under continuous review.
- To plan and administer the necessary activities for maintaining continuous contact with and information about the purchasers and users in the Company's markets.
- To be aware of the latest and most economic technical ideas and developments in the Company s main product areas in order to be able to suggest new design and other features to potential customers.
- To recommend the overall marketing strategy to the Kolegij.

c. Production Director

- To ensure that an overall production plan is drawn up for the Company as a whole, that progress against the plan is regularly reviewed and that prompt action is taken to correct variances.
- To ensure that the activities of all factories are effectively co-ordinated and that all production resources are effectively utilised for the benefit of the company as a whole.
- To review the productive resources and make recommendations for their improvement.

d. Financial Director

- To co-ordinate and administer as an integral part of management a plan for the financial control of the Company's operations. This should include profit planning, programmes for capital investing and financing, sales forecasts, expense budgets, cost standards and the provision of financial information for the make up of tenders and quotations.
- To compare performance with operating plans and targets; to report and interpret the results of operations to all levels of management and to initiate action to improve results.
- To formulate accounting and costing policies, standards and procedures to prepare financial statements and maintain books of account and to direct internal auditing and cost control.

e. Management Services Director

- To make recommendations and provide assistance and advice throughout the Company on the application of modern management techniques to all management functions and activities. These techniques include method study, work measurement, factory layout planning, planning of buildings, operational research, incentives, organisation and administrative methods review, use of networking and models, application of computers and Job Evaluation
- To co-ordinate the management training and development programme throughout the Company
- To be directly responsible for the quality control function throughout the Company

f. Personnel Director

- To advise the General Manager and Boleg[illegible] on salary and wage structures, productivity agreements (in conjunction with the Management Services Director) and conditions of working and employee relations.
- To control the recruitment, selection and induction of staff and workpeople
- To be responsible for Civil Defence, Fire Brigade, Mail, Security, Cleaning, Restaurant, company houses, Clinic, Arbitration, and the Company newspaper

g. Technical Director

- To be responsible for all technical and design aspects of the company's activities including research and development
- To maintain contact with the Institute and with research activity in general both within the industry and elsewhere and apply worthwhile developments to design, to materials and components and to work in the factories
- To initiate and direct the activities of committees established to co-ordinate programmes of product development and technology development
- To be responsible for the technical aspects of license arrangements
- To be responsible for the technical aspects of the procurement and commissioning of new plants and equipment

h. **Factory Director**

- To co-ordinate all the human and physical resources within the factory in order to ensure that agreed production programmes are achieved at lowest possible cost and on schedule.

j. **Production Controller**

- To maintain close liaison between Marketing and Production departments so that manufacture is in accordance with Marketing requirements and Marketing policy is formulated with due regard to Production capacity.
- To assist the Marketing Department in the quotation of delivery dates from an adequate knowledge of forward commitments and to provide a position report on an order quickly in response to a customer's query.
- To ensure that drawings, tools, jigs and materials together with clear and adequate working instructions are available when needed at the right place.
- To control stocks of materials and finished parts within economic limits compatible with availability.
- To provide a Control Statement which reveals how the production plan is being carried out at sufficient frequency for any necessary action to be effective.
- To be responsible for co-operation with other factories, control of a spare parts programme and the activities of Contract Managers.

k. **Materials Manager**

- To ensure that the right materials and bought-in parts and components are available in the factories when required.
- To take action to obtain the best prices and discounts for supplies and to administer all stores of materials and parts.
- To be directly responsible for co-ordination of a value analysis programme, waste control procedures and the new plate cutting section.

E - THE SALES AND MARKETING SITUATION

Current Situation

Currently the Sales Director is responsible to the Director of Engineering for the preparation of estimates, of all aspects of selling the Company's products, for after sales service, for advertising and promotion and warehousing and delivery to the customer. In addition he has reporting to him the Company's representatives located in offices in eight major towns in Yugoslavia. Representatives in the offices located in Berlin, Prague, Budapest, Dusseldorf and Moscow report direct to the Director of Engineering.

The main activities of estimating, pricing and marketing are carried out by five separate departments under the control of a Deputy Sales Director. These departments deal with:

- Industrial Equipment (TOPI)
- Power Plant (TOPI)
- Locomotives, wagons and trains (TMV)
- Assembly
- Steel Structures

Each department works quite independently and there is only the minimum of sales co-ordination from the point of view of the Company as a whole. The estimating function also is decentralised and each department has its own particular procedure. Establishing a price is a joint procedure involving factories as well as sales departments. No one executive has final authority for prices which must be fixed by mutual agreement between sales departments and factories.

The factories themselves each have their own individual estimating procedure and since it is understood that about half of all contracts involved more than one factory there is considerable scope for errors, inconsistencies and long delays in making a quote to a customer.

The figures which we were provided with showing an analysis of all contracts signed over the last three years show a disturbing overall trend. The detailed figures are set out in Appendix E - A but they can be summarised as follows:

Total Value of Contracts

(millions of N.D.)

Factory	1968	1969	1970
TMV - Locomotives, wagons, etc.	[illegible]	[illegible]	[illegible]
TMPI - Power Plants	[illegible]	[illegible]	[illegible]
TMPI - Industrial Equipment	[illegible]	[illegible]	[illegible]
TMS - Steel Structures	[illegible]	[illegible]	[illegible]
Assembly	[illegible]	[illegible]	[illegible]
Foundry	[illegible]	[illegible]	[illegible]
TMM - Machine Shop	-	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]

In general terms from the signing of a contract to final invoicing of the sale the elapsed time is about 18 months to two years. These total figures therefore represent an estimate of the invoiced sales for the years 1970, 1971, and 1972. It can be seen that the improving trend in total sales evident in the funding statement (section I of this report) will not continue and that in fact there is a considerable sales problem although it is fair to say that it is mainly as a result of the dramatic decline of the demand for TMV products.

The marketing function must therefore be strengthened, the marketing director given more authority and the various marketing and selling procedures revised so that all sales and marketing activity can be coordinated and controlled for the benefit of the company as a whole rather than for individual factories.

The strengthening of the sales and marketing function has already been dealt with in section D of this Report where it was recommended that the Marketing Director should be made directly responsible for the proposed changes. However further detailed investigations should be carried out in the following areas in order to provide the information required to enable improved procedures to be installed.

Marketing Organisation and Training

The present organisation of the marketing and selling function provides for only the minimum of co-ordination from a Company point of view. There are in effect at least eight separate sales policies in operation - for Industrial equipment, Power Plants, Locomotives, Assembly, Steel Structures, Machine Shop, Maintenance, New Production and the Foundry - which makes the implementation of an overall Company sales policy very difficult if not impossible.

As part of the implementation of the proposed management organisation therefore the activities of these departments should be analysed in some detail and then reformed in such a way that the Company as a whole becomes more marketing oriented, so that overall company policies can be established and decisions taken in light of total marketing considerations.

A positive, organised sales effort must be developed and this will depend upon the implementation of the new management structure and the definition in completely clear terms of the duties and responsibilities of all members of staff. It is also important that training and development programmes be arranged for all members of staff (see Section G.).

In developing the new marketing organisation the role of the regional sales offices should also be re-examined as there are indications that co-ordination of the marketing activities of the regional offices and of Head Office is not completely effective. All aspects of the use of regional offices should be analysed including an assessment of total cost involved and the contribution which they make to the Company's profit.

Marketing Information and Control

Currently there is only a minimum of regularly produced sales statistics which can be used for control purposes and in general there is a lack of the marketing information necessary for the establishment of realistic sales policies and budgets.

The market research function should be strengthened and formal procedures set up in order to maintain continuous contact with and information about the purchases and users in the Company's markets. In addition the Marketing Director should be kept aware of the latest ideas and development in the Company's main product areas in order to be able to suggest new designs and other features to potential customers.

Further investigation is therefore needed in order to establish the extent and type of market information required and to determine the minimum statistical information necessary for effective control of all aspects of marketing. The procedures should be developed in such a way that the sales and marketing activities in connection with the various product groups can be closely co-ordinated within the general framework of an overall Company marketing policy. This is particularly important in the case of the estimating and tendering procedures.

Advertising and Promotion

The 1970 advertising budget was as follows:

	New Dinars
Advertising in magazines	360,000
TV and radio	400,000
Promotional Literature	120,000
Gifts	200,000
Trade Fairs	620,000
Total	1,680,000

This represents less than ½% of the sales value of production but because of a poor profit result in 1970 it was more than four times the net profit before tax. In 1968 when a reasonable profit was achieved the advertising budget constituted 6½% of the net profit before tax.

Examination of the various items of advertising expense show that they are repeated from one year to the next with little change. It is evident therefore that there should be a complete review of the various types of advertising expenditure and an evaluation of their cost-effectiveness so far as possible.

At the same time there is a probable need to re-examine the Company's image in general. This is especially so considering the growth in size of the Company over recent years and in view of other developments, e.g. the recent merger with Geco.

Product Development

The amount of money spent on the development of new products has decreased annually over the last four to five years and in 1970 at about 400,000 New Dinars represented less than 0.1% of sales value of production.

Currently there is no formal organisation for product development and the roles in this activity of the Factories, the Institute, the Design office and the Marketing Department are not defined. It is not surprising therefore that product development is not keeping pace with the requirements of a changing market.

The recommendation in Section D that the new appointment of Technical Director should include responsibility for the co-ordination of product development will provide the opportunity for the function to be developed in a controlled, effective manner.

Summary of Conclusions on Marketing

The present organisation of the sales and marketing function has helped the Company to develop its potential for supplying complete process plants. It has also probably had the effect of increasing the sales of steel structures.

The relevant figures of contracts signed for the years 1968 and 1970 are:

	Millions of New Dinars		
	1968	1970	Increase
TOPI - Power Plants	38.3	88.6	52%
TOPI - Industrial Equipment	30.0	73.1	144%
[illegible] - Steel Structures	26.0	34.1	31%

Nevertheless, the overall total contracts signed have fallen from 489.3 to 294.9, i.e. by almost 40% over the same period and this situation, coupled with results of the preliminary investigation already noted, indicates that a more detailed investigation of the marketing function should be undertaken in the following main areas:

- Organisation of marketing function
- Marketing procedures, particularly estimating and tendering
- Training and development of staff
- Market Information
- Statistics and control procedures
- Advertising and promotion
- Product Development

Appendix [illegible]

TOTAL VALUE OF CONTRACTS

A. [illegible] - Railed Vehicles

Group of Products	1968	1969	1970
Locomotives	266,522	42,744,000	10,16[illegible]
Freight wagons	55,112,000	18,230,000	15,[illegible]
Others	22,880,000	5,000,000	5,500,000
Sub-Total:	344,014,000	65,974,000	30,993,[illegible]

B. Foundry

	1968	1969	1970
a. External	5,015,177	4,657,000	5,[illegible]
b. Internal	2,390,625	2,928,200	[illegible]
	7,405,802	7,585,200	10,104,710

C. [illegible] - Spare parts

	1968	1969	1970
a. External	did not	2,305,247	4,791,1[illegible]
b. Internal	exist	12,075,714	16,[illegible],990
Sub-Total:	-	14,380,961	21,191,1[illegible]

D. [illegible] - Steel Structures and Cranes

	1968	1969	1970
a. Cranes	3,231,000	4,145,000	3,616,[illegible]
b. Steel constructions	22,762,555	18,435,000	30,500,000
Sub-Total:	25,993,555	22,578,000	34,116,[illegible]

E. [illegible] - Power Plants

	1968	1969	1970
a. Individual boilers	5,150,000	20,951,000	[illegible]
b. Standard boilers	32,705,000	51,209,000	[illegible]
c. Marine boilers	11,970,000	4,074,000	[illegible]
d. Others	8,380,000	9,980,000	[illegible]
Sub-Total:	58,315,000	[illegible]	[illegible]

F.	[illegible]			
a.	Cement, lime, gypsum	5,211,790	-	[illegible]
b.	Ferrous and non fer.	11,[illegible]	[illegible]	[illegible]
c.	Petrochemicals	[illegible]	16,5[illegible]	[illegible]
d.	Sugar plants	[illegible]	[illegible]	[illegible]
e.	Civil engineering	[illegible]	5,0[illegible],100	[illegible]
f.	Others	[illegible]	[illegible]	[illegible]
Sub-Total.		[illegible]	61,6[illegible]	[illegible]

G.	[illegible]			
a.	Steel construction	[illegible]	[illegible]	[illegible]
b.	Power plants:			
	- steamblock boilers	[illegible]	[illegible]	[illegible]
	- individual boilers	[illegible]	[illegible]	[illegible]
	- [illegible] boilers	[illegible]	[illegible]	[illegible]
	- standard boilers	-	[illegible]	[illegible]
	- repair services	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]
c.	Industrial equipment:			
	- Petrochemicals	[illegible]	[illegible]	[illegible]
	- ferrous and non fer.	[illegible]	[illegible]	[illegible]
	- sugar plants	[illegible]	[illegible]	[illegible]
	- cement, lime, gypsum	[illegible]	[illegible]	-
	- others	-	[illegible]	-
		[illegible]	[illegible]	[illegible]
Sub-Total.		[illegible]	[illegible]	[illegible]
Overall Total.		[illegible]	[illegible]	[illegible]

[redacted]

[redacted]

[redacted]

[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				

[redacted]

The following table sets out the changes in sales income and in output which have been achieved over the last ten years:

Unit	Income in Thousands of [illegible]		Output ([illegible])		Output Units
	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	33,010	170,642	[illegible]	6,076	Tons
[illegible]	11 [illegible]	67 [illegible]	1,[illegible]	3,070	Tons
[illegible]	15,370	[illegible]	2,[illegible]	6,[illegible]	Tons
[illegible]	[illegible]	[illegible]	[illegible]	3,[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	6,[illegible]	Tons
Total Company	[illegible]	[illegible]	[illegible]	[illegible]	Tons

Note: No comparable figures for [illegible] are available

Physical growth in all sectors has therefore been considerable. However their relative importance in [illegible] income is concerned has changed considerably, [illegible] for example having dropped from [illegible] of the total to [illegible], [illegible] from [illegible] to [illegible] [illegible] steadily increasing from [illegible] to [illegible] while [illegible] remains constant at about [illegible].

[illegible]

[illegible]

Currently further changes are planned or are under consideration as follows:-

- TBW will be accommodated in Buildings Nos. 34, 87, 110 and 113 and 116, 117 and 118 which are currently under construction.
- TDPI is being expanded in the S.E. corner of the Works area.
- The lighter machine tools in the TBW division will be concentrated in building No. 34 when the move of TBW has been completed.
- Plate cutting, forming and allied operations from the TBW, TBW and TDPI factories and from the Purchasing Department may be merged into one department and located on the east side of the Works area in the vicinity of Buildings Nos. 32 and 34.

Consideration of these plans and proposals and of the general layout of the Works area and of the various factory buildings raises a number of questions:

- Is the best use being made of the Works area as a whole? e.g. Assembly Preparation is currently carried out in the area to the east of Building No. 10. This area is valuable in so much as it is near the centre of the Works. Could it not be used for development by moving Assembly Preparation elsewhere - say in the area of the Power House?
- The move of TBW into Building 34, the centralisation of plate cutting, etc. to the east of the Works and the expansion of TDPI to the south east corner will all result in considerable additional movement of material. Are there no alternative courses of action? Might plate preparation not be sited inside the southern end of Building No. 119?
- Is it possible to dispense with the ironstone between Buildings 11 and 16? If so that area could be roofed over to provide the necessary space for the expansion of the TDPI factory more cheaply than by constructing a completely new building. It would also provide TDPI with a more convenient working area from the layout of individual factory buildings be improved in order to reduce the movement of materials e.g. in TDPI Building No. 16 the edge planing machine is at one end and the welding cells at the west operation are at the other.

There is little doubt that considerable benefits could result from a careful detailed study of the layout of all tools, i.e. in the Works area as a whole, in the factories, stores, workshops and of the individual workplaces

The Buildings and Plant

Apart from the Slavonski Partisan workshop the buildings have all been constructed since the war and are in good condition. Rail access is excellent and a new access road is planned.

The buildings have no major disadvantages although it is now being found that for some types of production they are too narrow.

There are currently 773 items of plant in use of which about half comprises welding equipment and automatic or semi-automatic welding machines. An opinion poll was carried out with the help of factory management in order to establish the condition of the plant and equipment. A summary of the results is as follows:-

Factory	Total	Conditions					
		Good	%	Satis-factory	%	Bad	[illegible]
[illegible]	176	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	79	[illegible]	131	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	79	[illegible]	17	[illegible]	[illegible]
[illegible]	121	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Maintenance	[illegible]	10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	773	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Although it is probable that there has been excessive downgrading of the plant by the factory personnel nevertheless the results of the poll shows that over [illegible] of all plant and equipment is considered to be in poor condition. [illegible] is the fact that [illegible] staff in the [illegible] factory feel that over [illegible] of their machine tools are not capable of consistently producing high quality work.

[redacted]

[redacted] the emphasis on the single day shift results from several aspects, namely:

- the expected arrival of the majority of the workers to finish early in the afternoon
- the feeling that once one shift has started a particular job then they should finish it
- that additional relevant costs are incurred for overtime and supervision if only a restricted number of people work the second shift

It appears therefore that although [redacted] of the workforce do work on the shift, it is solely on a means of providing restricted additional capacity when overheads are experienced.

In order of anticipated savings to hand, particularly in the latter months of the year additional capacity is generated through operators working rather than recruiting the labour force.

The overall question of shift working can only be investigated in the light of more detailed information on factors such as set up and [redacted]

[redacted]

The problems associated with the lack of control information and the general procedures for allocated overhead costs have led to the [redacted] of working [redacted] we give three cases to the operatives. The [redacted] the operative [redacted] or [redacted] it ought to [redacted] overheads are distributed [redacted]

An alternative system of machine utilisation is shown in Appendix I [redacted] which [redacted] the type and number of machines a unit has [redacted] It can be seen that these [redacted] of machine groups such as [redacted] process [redacted] and turning machines at [redacted] It would appear that [redacted] machine [redacted] and utilisation, coupled with [redacted] could be gained from a [redacted] of machine [redacted] would also be achieved in the case of [redacted] although the [redacted] would have to be [redacted]

Flexibility and Mechanisation

Although the condition of some machines, particularly in TP limits their suitability for certain types of accurate work, the general nature of the machine gives sufficient flexibility for the range of work encountered. The present limited applications of the automatic pipe and tube butt welding machines are associated with technical problems and more attention has been given to these, greater flexibility can be anticipated.

In the event of a machine replacement programme being initiated, appropriate consideration must be given to maximising flexibility and utilisation in order to reduce machine cost per hour.

The range of work and small batch quantities generally experienced limits the scope for mechanisation although there is evidence to suggest that more detailed technological and production development could produce method improvements resulting in lower production costs.

Other Physical Aspects

Two other factors which could govern production capabilities have been investigated. These are crane arrangements and specialised facilities such as building berths or assembly areas.

The crane situation in the main production areas is as follows:

20 cranes with a maximum safe working load up to	5 tons
14	10 tons
6	15 tons
1	over 15 tons

Although the cranes are in a reasonable condition the predominance of small capacity cranes can be a limitation to future production plans.

Two special areas which are of value are the new construction area [illegible] a large capital equipment such as [illegible], and the [illegible] assembly area in [illegible] has [illegible] given to [illegible]. [illegible] assembly area [illegible] and problems are to be envisaged as [illegible] and [illegible].

[redacted]

[redacted]

[redacted]

[illegible] authors produce the following ratios:-

a) [illegible]
b) [illegible]
c) [illegible]
d) [illegible]

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
a)	[illegible]	[illegible]	[illegible]		
b)	[illegible]	[illegible]	[illegible]		
c)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
d)	[illegible]		[illegible]	[illegible]	

The variation from factory to factory is dependent on the type and size of each product as each factory [illegible] produces a product line of bridge and [illegible] complex while [illegible] produces concrete and factory, and therefore the number of [illegible] required at [illegible] is less. However, generally the figures do indicate a high number of [illegible] to direct staff and have shown a high overhead [illegible] has contained that [illegible] authors has every [illegible] author.

The [illegible] does possibly arises from the problems planning and control problems experienced generally throughout the factories and therefore improved systems of planning and control should affect both the number and efficiency of direct and indirect workers to achieve the important objective of reduced labour cost.

[illegible]

Details of average pay rates for all the participating grades were obtained over the last five years and are shown in Appendix I. The average annual percentage increase in pay rates is also shown, the highest increase being [illegible] in 1974. The purpose of the calculation is that the annual increases may have varied in each. The following table compares the five year increases and shows the comparison between [illegible] employed people have received in a period when their [illegible] with higher qualifications. However the overall conclusion shows that these grade workers are still [illegible] a higher differential in pay rates than in 1969.

[redacted]

[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			

[redacted]

[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					

The above situation arises from the totally [illegible] system of payment being used at present which consists of three main aspects:

- points evaluation for job category
- performance indices based on allowed times
- product group profitability

Each aspect has been examined and major anomalies have been apparent in all areas, for example:

- there is no uniformity in the application of the points system. Each factory can interpret the rules independently with the result that a grade [illegible] foreman in [illegible] has 1,[illegible] points while a similar grade foreman in [illegible] has 1,[illegible] points.
- allowed times have been relaxed by [illegible] extra times for [illegible] and indirect aspects of the work and this reduces the incentive element and results in different standards and pace of work factory by factory
- the effect of group profitability [illegible] factory personnel [illegible] fixed part of the profit and the balance [illegible] available for distribution in the factory

[illegible]

[illegible]

[illegible]

Factory	1966	1970	% Increase
[illegible]			
underframe shop	133	[illegible]	[illegible]
rolling stock assy.	157	[illegible]	[illegible]
motor assy.	[illegible]	[illegible]	[illegible]
[illegible]			
sub assembly	[illegible]	[illegible]	[illegible]
heavy plate workshop	137	[illegible]	[illegible]
apparatus workshop	[illegible]	[illegible]	[illegible]
assembly workshop	[illegible]	170	[illegible]
[illegible]	161	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Foundry	161	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Electric workshop	[illegible]	[illegible]	[illegible]

A further analysis of performance figures showed that:

[illegible]

[illegible]

In an attempt to quantify the extent of the reluctance of [illegible] operators were questioned. These were:

- the introduction of a daily log [illegible] factors. These record sheets were completed at the end of the working day by the operator, as appropriate for the full week and provided [illegible] working rate for a variety of operations. The [illegible] are shown in Appendix I.

Interviews with the Factory Inspectorate revealed that their biggest problem arose from material and dressing delays, but the weights obtained from the records were generally disappointing in that a large proportion [illegible] was although information from [illegible] and comparable with the others recording TWA hours there still [illegible] work.

The second exercise involved trying to check the extent of delays [illegible] which had been agreed and for several years. The result [illegible] disappointing since the recorded [illegible] and were generally used to be unobservable.

Several observations during [illegible] the working time per [illegible] that there was scope for productivity improvement by [illegible] the operative [illegible] although the day shift [illegible] 10 hours [illegible] each had agreed to 9.00 hours and there was a [illegible] of [illegible] on the night shift.

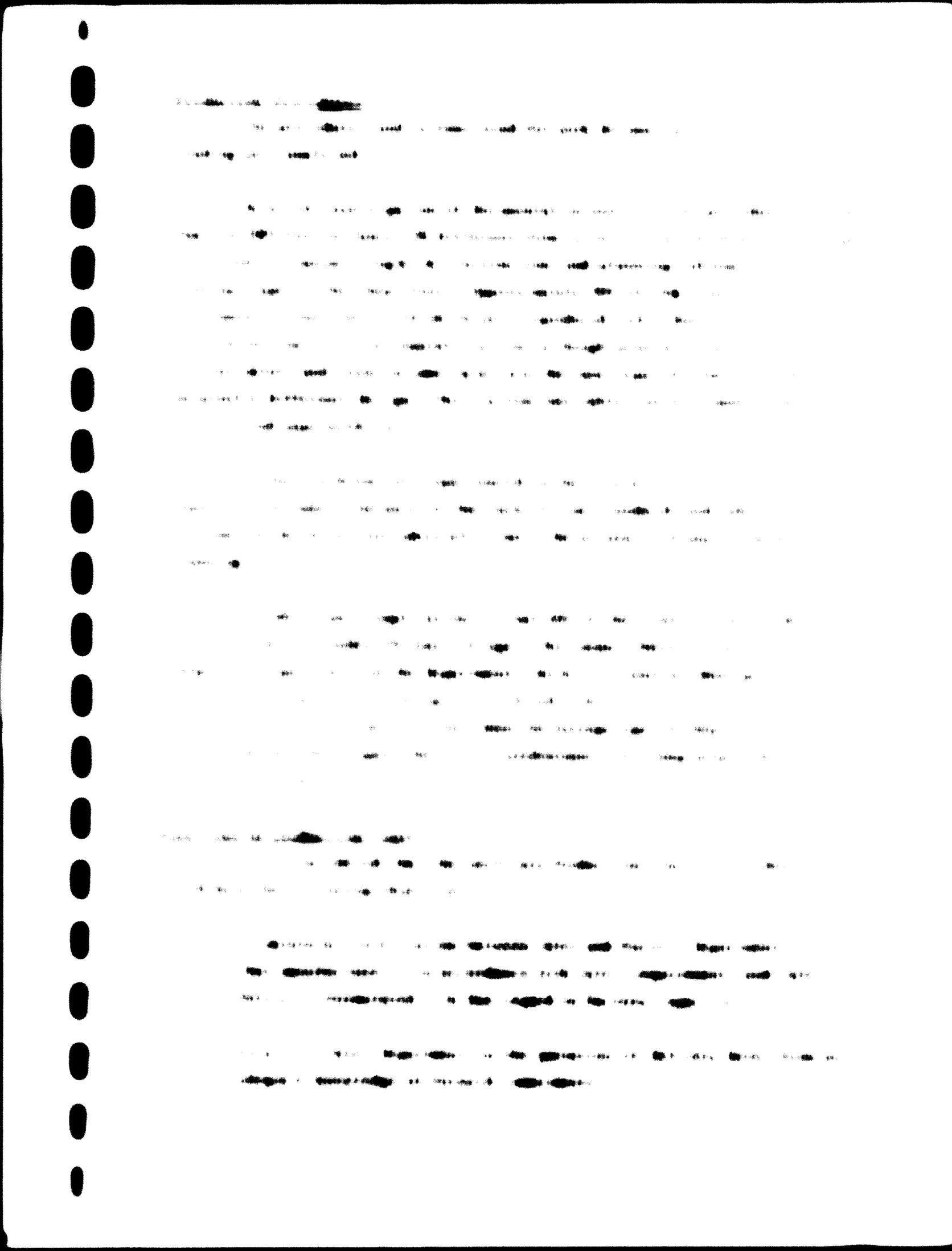
Previous experience with [illegible] has shown that by [illegible] and improving the access to the problem [illegible] and improving the [illegible] the [illegible] can be [illegible] with a resulting reduction in [illegible].

[redacted]

[redacted]

[redacted]

[redacted]



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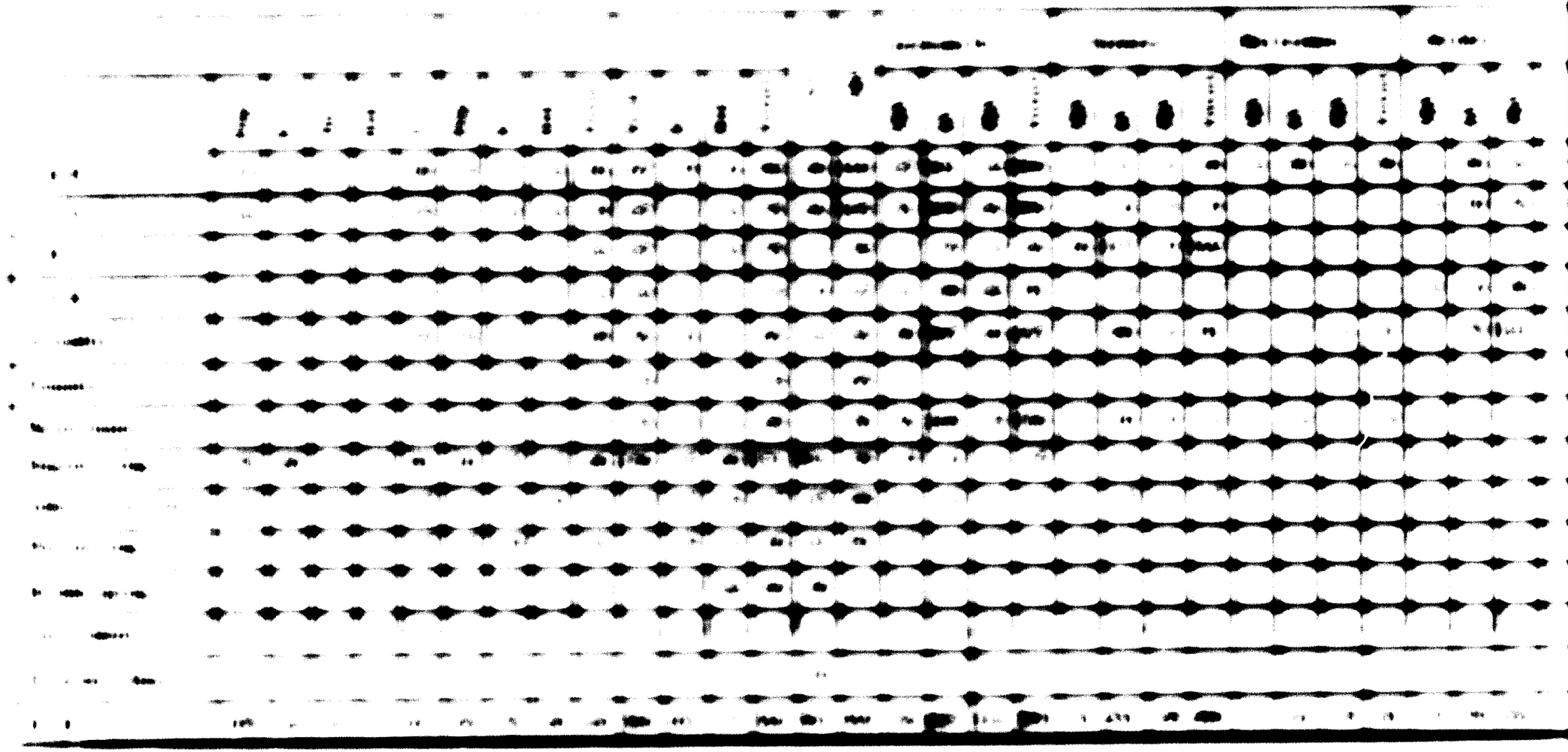

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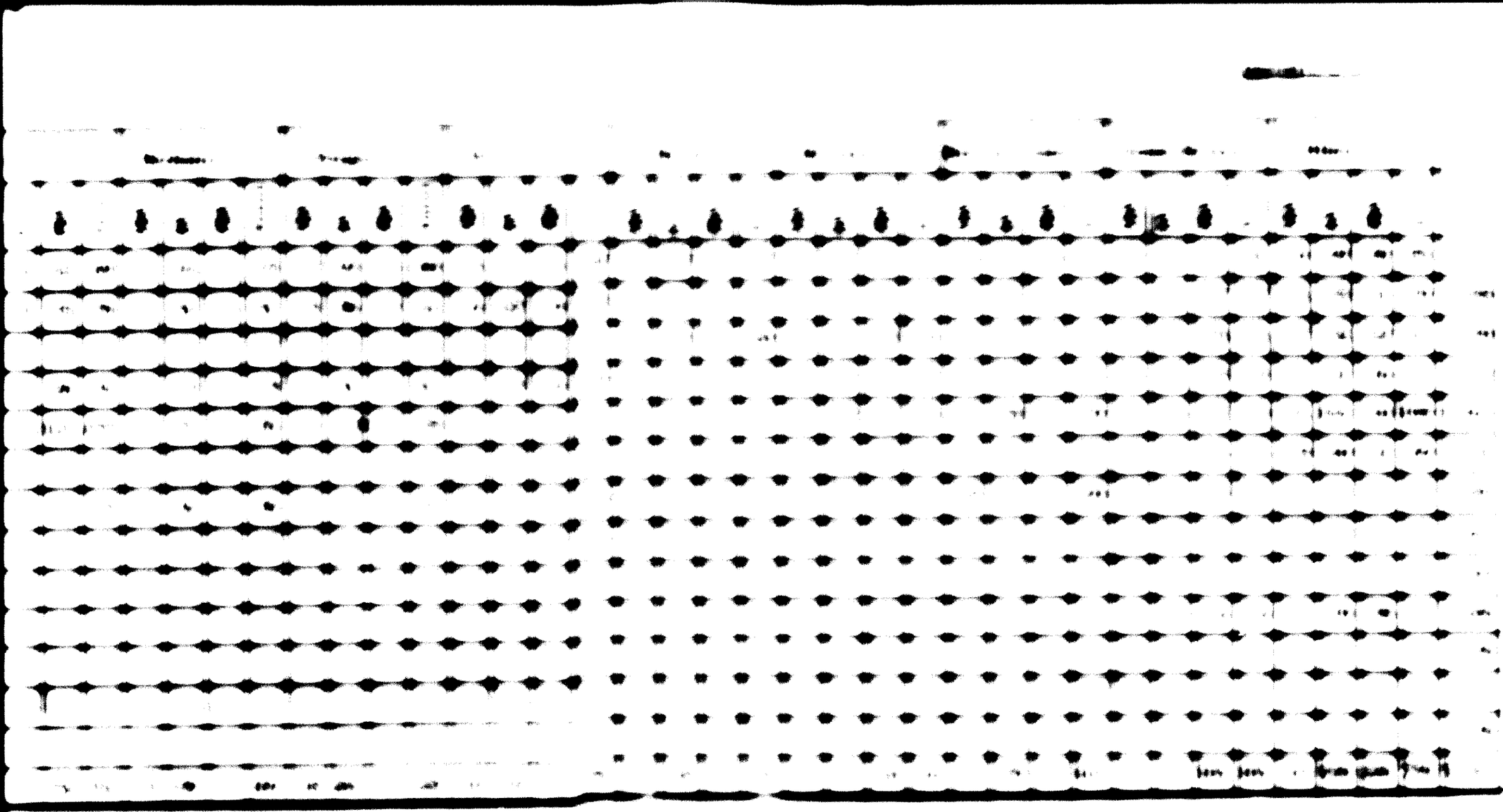

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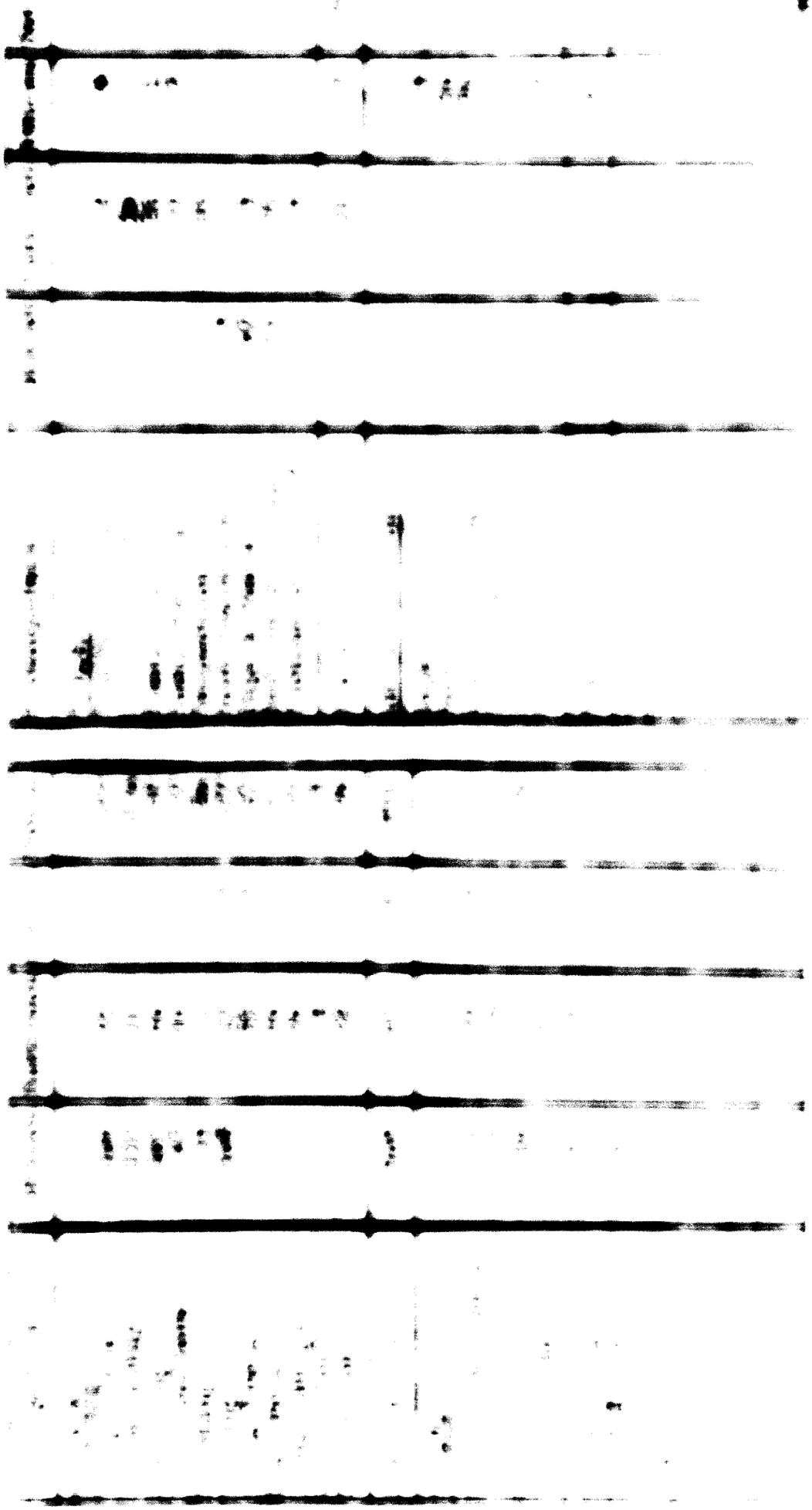

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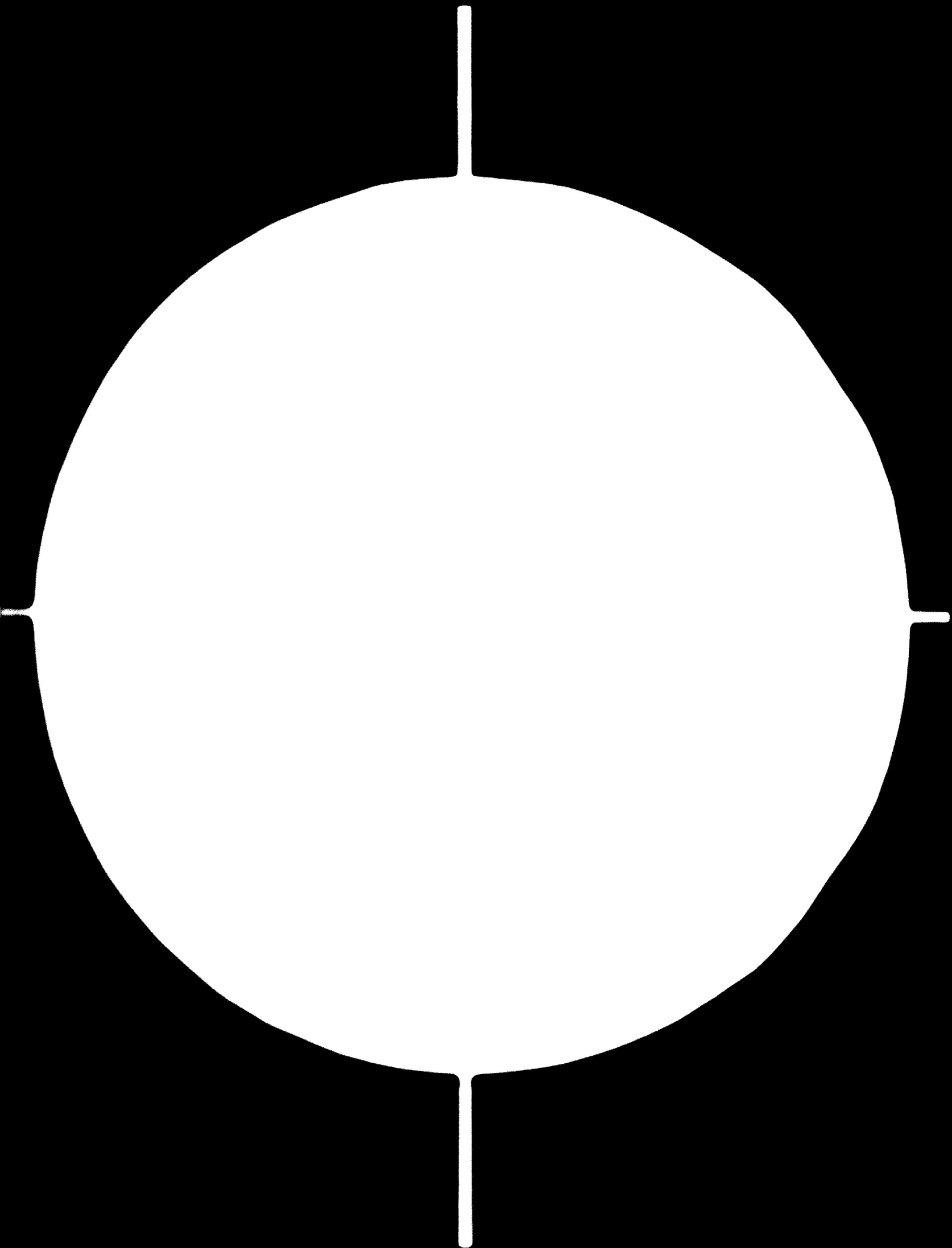


Analysis of Average Net Monthly Personal Incomes in N.D.

Appendix F - E

Qualifications	1966	1967	1968	1969	1970		Annual Indices		
1	2	3	4	5	6	3:2	4:3	5:4	6:5
VSS	1,031	1,143	1,428	1,592	2,046	111	125	111	129
VS	-	-	1,160	1,240	1,485	-	-	107	120
SSS	665	719	867	921	1,148	108	120	106	125
NS	489	544	645	708	822	111	119	110	116
PO	409	451	529	572	672	110	118	108	117
Weighted Average	817	891	1,042	1,115	1,380	109	117	107	127
VKV	792	929	1,091	1,132	1,428	117	117	107	126
KV	673	758	863	894	1,116	113	114	107	125
PKV	544	623	724	738	930	115	116	102	126
NKV	497	571	601	672	814	115	105	112	121
Weighted Average	691	789	890	918	1,136	114	113	103	127
Total Average	720	822	937	984	1,216	117	114	105	123

Appendix F-F

Analysis of Average Net Monthly Personal Incomes in N.D.

by Qualification and by Factory for period I-III 1971

Qualifications	T.Š.V.	T.O.P.I.	T.Č.K.	T.D.S.	Assy.	Foundry	Admin.	M'tce	Eng.	Total
VSS	2513	2144	3162	21o7	2518	2982	2456	2797	2286	2332
VS	1591	1616	2269	16oo	1889	1915	1787	2316	1385	1719
SSS	1215	13o2	1673	1188	134o	115o	136o	1687	1268	1343
NSS	92o	73o	1o13	781	1o75	862	1113	1145	863	989
PO	-	-	937	-	739	-	875	1o13	713	812
Weighted Average	156o	1567	1787	1377	1846	1813	1519	2o72	1656	16o8
VKV	1392	1385	16o3	1488	1577	1586	1421	1726	1347	152o
KV	11oo	1127	1343	11o9	1223	1121	1141	1419	1157	1193
PKV	9o8	938	1215	97o	867	97o	865	1195	1153	934
PKV	782	829	1o5C	879	787	891	984	1o72	1247	868
Weighted Average	113o	1111	13o1	1211	1179	1o8o	959	1426	1257	1173
Total Average	1257	1241	1787	1257	1166	1177	1389	1[illegible]	1657	13o7

Appendix F-G

Analysis of Lost Time Records

Study carried out from 7.6. 1971 to 18.6. 1971

Factory	Working Place	Minutes Worked	Waiting Time /min/ Mat.	Drgs.	Inst.	J & T	Job	Cranes	Trans.	Me/Bk	Others	Index /4-12/:
1	2	3	4	5	6	7	8	9	10	11	12	13
KOPI	Plate Burning	17,760	35	100	40	60	205	565	760	440	85	13,0
	Grdel Assembly	72,000	140	170	30	140	30	140	70	50	350	1,6
	Boiler Parts	81,600	-	80	180	280	-	140	-	-	840	2,0
	Assy.Steambl.Boilers	72,000	990	3840	-	-	-	60	120	-	7020	16,7
	Welding	18,720	310	-	-	130	2460	1650	510	980	390	34,5
	T o t a l :	262,080	1475	4500	250	610	2695	2555	1460	1470	8680	9,14
		%	0,56	1,72	0,10	0,24	1,04	1,00	0,57	0,58	3,31	2,1
K C K	Marking	57,600	75	75	35	10	40	80	115	-	-	0,7
	Welding	23,040	-	-	-	-	60	2035	105	90	20	10,0
	Assembling sup arts	39,360	-	-	-	30	25	240	465	-	-	1,9
	T o t a l :	120,000	75	75	35	40	125	2355	685	90	20	2,6
		%	0,063	0,063	0,029	0,033	0,142	1,962	0,57	0,075	0,017	2,55
F D S	Small Lathes	57,120	160	40	-	860	300	-	-	550	3470	8,4
	Horizontal Drilling	46,080	50	310	40	370	80	560	50	1000	-	5,4
	Vertical Borer	17,280	120	30	-	100	50	195	-	60	140	4,0
	T o t a l :	120,480	330	370	40	1330	430	755	50	1610	3610	7,1
		%	0,273	0,307	0,033	1,104	0,358	0,627	0,041	1,336	2,996	7,1
F S V	Plate Burning	49,200	-	-	-	-	-	130	-	680	350	2,6
	Underframe Assy.	117,000	360	-	-	2400	-	225	-	-	60	2,6
	Locomotive Assy.	36,000	-	-	-	-	-	60	-	-	360	1,7
	T o t a l :	196,800	360	-	-	2400	-	415	-	618	770	2,4
		%	0,183	-	-	1,219	-	0,211	-	0,314	0,391	2,4
	" F F "		0,32	0,70	0,04	0,63	0,47	0,86	0,32	0,54	1,87	5,25

Delivery Achievements

Analysis of Deliveries between 1.1. .971 - 1.5. 1971

Showing time span between Actual and Promised Delivery Dates

Number of Months Late	Factory and Product Groups											
	T.O.P.I.				T.Š.V.			T.Č.K.	Assy.	DD	%	
	Energy	Ind. Equip.	Total	%	Start Dely	Finish Dely	% Start					
On time	6	3	9	19	3	?	21	4	-	16	24	
up to & inc. 1 month	5	3	8	17	-	-	-	-	-	8	12	
over 1 mth. u.t. & inc. 3 mths.	5	3	8	17	3	?	21	-	2	13	19	
over 3 mths. u.t. & inc. 6 mths.	10	4	14	30	3	?	21	-	-	17	25	
over 6 mths. u.t. & inc. 12 mths.	4	3	7	15	4	1	29	-	-	11	17	
over 12 months	1	-	1	2	1	1	8	-	-	2	3	
TOTAL	31	16	47	100	14	2	100	4	2	67	100	

Value of Orders

where Delivery was late on 1st May 1971

Factory	Value of Orders in 000's N.D.
T.S.V.	154,200
T.O.P.I. Energy Ind. Equip.	 15,994 14,870
T.C.K.	1,012
ASSEMBLY	1,965
Total	188,041

G - PERSONNEL, DEVELOPMENT AND TRAINING

Current Situation

The Personnel Department

The personnel function is currently carried out by a Personnel Manager who is responsible to the Manager for Administration who in turn reports to the General Manager. This most important function is therefore not strongly represented in the organisation and recommendations to improve this situation were made in Section D of the report.

The Personnel Department is responsible for:

- Supplying personnel statistics and information for the company yearly plan.
- Providing the necessary personnel by recruiting from other Factories, from schools, and by re-training and subsidising students at University.
- Preparing the annual financial personnel budget for the Workers Council.
- The introduction of new members of the Company to their duties.
- The employment of the School staff and the development of relationships with other educational institutions.

Numbers Employed

A summary of the number of direct and indirect employees together with the total wages and salaries of each factory and department as at 31st December 1970 is as follows:

Numbers Employed

General Manager (with Economics Dept.)	42
Engineering Department	500
Purchasing Department	206
Finance Department	136
Administration Department	169
Investment Department	36
Total: Staff Departments	1,099

Factories:	Direct	Indirect
TOPI	508	383
TŠV	537	283
TČK	217	95
TDS	222	138
Assembly	1,033	432
Slav. Partizan	305	117
Foundry	117	34
Maintenance	377	109
Total: Factory Staff	3,316	1,591

The numbers employed in the various factories and departments on 1st March 1971 by qualification grade are set out in Appendix G - A. Definitions of the grades concerned are shown in Appendix G - B.

Wages and Salaries

	New Dinars per Month
General Manager (with Economics)	72,043
Engineering	2,232,765
Purchasing	229,211
Finance	197,894
Administration	184,606
Investment	38,445
Company Staff	2,951,968 ND
TOPI	938,930
TSV	861,399
TCK	382,151
TDS	391,872
Assembly	1,153,758
TSOP	436,505
Foundry	154,545
Maintenance	831,871
Factory Staff	5,121,041 ND

The wage structure is dealt with in a special Appendix, G - C to this report, which was prepared by a specialist in wages distribution from CIOD. This appendix recommends a complete review of the current system and there is no doubt that this is urgently required.

Many statistics are available indicating a considerable number of unjust anomalies. There are many cases of earnings varying by 50% to 100% or more for practically identical work and this is bound to have an adverse effect on morale and productivity.

There is a points system based on a form of Job Evaluation and this is used in calculating salaries and wages. Each factory and department however has its own individual points formula with the result that there is no overall control of job classification and this further distorts the anomalies.

Factory Labour Turnover and Recruitment

In the twelve months to 31st December 1970 1,082 employees left the Company and this represents an annual rate of about 26%. The equivalent figure in 1969 was 18%.

It is understood that part of the labour wastage is accounted for by the transfer of employees to Germany and by the movement of casual labour employed on outside erection. Despite these factors the probability is that labour turnover is excessive as the national average figure is less than 5%. This normally indicates a general dissatisfaction with the conditions of service - one of the major factors being wages and salaries.

The replacements for employees leaving the Company were recruited from the following sources and this was reported to be typical:

From Schools	410
Workers trained at Institute	170
From other factories	300
Part time Assembly workers	200
	1,180

The pattern of distribution of employees by age is as follows:

Age Years	TCK	TOPI	Maintenance	Total excluding Germany
up to 25	26%	29%	21%	24%
26 - 35	20%	32%	27%	31%
36 - 40	17%	17%	22%	19%
41 - 50	31%	18%	23%	21%
51 - 55	4%	3%	4%	3%
56 - 60	2%	2%	2%	2%

The high proportion of relatively young employees is apparent and this normally raises problems of limited experience, lack of discipline, difficulty in maintaining the required quality standards and difficulties in maintaining a consistently high level of productivity. Discussion with factory management confirmed these views.

Currently no training is carried out in the factories and there is an obvious need for such a programme. It is recommended however that such a project should be postponed until the new management organisation has been implemented, new administrative procedures installed and a new wage structure operating satisfactorily.

Management Staff

Analysis of the age pattern of the senior 130 members of management staff gave the following pattern:

Age	Percentage Distribution
up to 25	1%
26 - 30	2%
31 - 35	19%
36 - 40	29%
41 - 45	21%
46 - 50	11%
51 - 55	5%
56 - 60	11%
above 60	1%

A distribution curve is shown in Appendix G - D.

This age pattern is much more satisfactory than that for the factories and shows that a majority (70%) of the management staff is between the ages of 30 and 45. There is a second peak in the distribution curve in the age range 55 to 60 and this indicates a useful body of experience to balance the more youthful enthusiasm of the younger group.

The proportions of the senior directors and managers in the different qualification grades are set out in Appendix G - E. this shows that about $\frac{1}{3}$ of the senior management has been given engineering training and it is considered that this is the minimum proportion for a company of this nature.

A more disturbing feature however is the distribution pattern for length of service with the company (shown in Appendix G - D) and length of service in the current appointment.

Only 15% of the executive staff have had less than ten years service with the Company and this means that there has been the minimum infusion of new ideas and experience from outside the Company.

The average length of time spent in current appointments is only about $2\frac{3}{4}$ years with only two executives having had more than three years. At director level there have been four directors of the TCV factory in the last five years, four of the TOPI factory in the last six years and two of the TDS factory in the last two years.

This mobility of senior management personnel is most undesirable as it inevitably leads to lack of continuity of policy and uncertainty on the part of the staff and labour concerned.

Recommendations

A major recommendation, set out in Section D of the report, is to strengthen the whole Personnel function of the company and to have it represented at a high level in the organisation structure. The further recommendations which follow should be the main preoccupation of the Personnel Director.

Many of the problems in connection with personnel stem from the fact that conditions of service are not sufficiently attractive, and in particular because the salary and wage structure although sound in theory is unjust in practice.

The following changes are therefore recommended:

- Wages of all personnel, both staff and factory personnel, should be based on one carefully controlled system of Job Evaluation. This will have the effect of establishing realistic and equitable differentials between all groups of occupations.
- The actual level or earnings should be a constituent part of the Annual Plan and percentage increases should apply to all grades equally.
- A sound based system of work measurement should be introduced as outlined in Section F - Production so that all production activities can be measured using a common unit of work. Such Work Units can then be used for establishing workshop capacities, for loading and unloading of workshop sections, for costing and estimating and as a basis for an equitable incentive scheme for the workpeople.
- A programme of management and supervisory development and training should be introduced for all grades from chargehand to Director as outlined below.

Management and Supervision Training

To be effective management training must be a continuing programme fully integrated with the Company's development plan and geared to each individual manager's and supervisor's own area of responsibility.

The first step in such a programme must be to implement the new management organisation so far as the top structure is concerned. The succeeding steps are then as follows:

a. Job Specifications: These are prepared for each job in the organisation structure and show:

Job title
Superior job to whom the job reports
Subordinate job controlled
Main purpose of the job
Major duties and responsibilities
Limits of authority

Duties and responsibilities are clearly defined in quantified terms where possible.

The Job Specification for a Manager together with the Company's policies and objectives appropriate for the level of Manager enable Key Result Areas (K-R-As) to be identified. These are areas of the Manager's job which require effort on his part and which have a significant effect of the Company's profitability. Quantified targets with a time scale for each KRA are agreed with the Manager.

b. Performance Plans: The KRA and agreed targets are recorded on performance plans: and control statements (weekly or monthly) are set up so that the manager can measure his achievement against performance. The superior monitors his subordinates Control Statements and supplies advice and assistance as necessary.

c. Performance Review: This is a formal meeting (normally annual) between the manager and his superior at which:

- The past year's achievements against targets are reviewed.

- Personality traits and difficulties are discussed.

- Training needs to be satisfied next year are identified and action planned.

- KRAs and targets for the next year are agreed for inclusion in the performance plans and controls.

In the preparation of Performance Plans and in the Performance Review the manager's training needs are identified and discussed. Action is started to ensure that the needs are fulfilled in the following period.

d. Management Training

Two distinct aspects of Management training are recognised:

Individual - the development of the individual manager in the managerial skills required to perform the job.

Team - the development of the managers as a team working together to achieve Company objectives.

training is given by:

- Counselling by the manager's superior, especially through regular review of the manager's regular control statements.

- Projects - individual and group - to be completed by an agreed date.

- Internal classroom training.

- External classroom training.

The Personnel Director should be responsible for the administrative procedures required for the training and development programme.

It cannot however be over-emphasised that it is vitally important for all senior and middle managers to understand the training and development scheme and to participate actively in it.

Top management must create the necessary climate for the programme and every manager should be made responsible for the training and development of his subordinates as well as for their selection.

The implementation phase of the project at Djuro Djaković should lay [illegible] management training, employing the four methods listed above

[illegible] considered that counselling by the consultants in co-operation [illegible] superior would be the most effective type of training. As [illegible] above, the manager's control statement would be the basis for regular [illegible] the control statement will show, for each key factor under the control [illegible] the manager, actual performance compared with target. Reasons for variances [illegible] target would be identified and discussed with the manager and the action [illegible] to improve performance would be agreed together with target dates for [illegible] such action previously agreed would be monitored.

[illegible] review meetings such as the above and from Kolegij and other [illegible] meetings, the need for individual and group special managerial projects [illegible] guidance should be given by the consultants as to ways of defining [illegible] and methodology of such projects, setting target dates, monitoring [illegible] and preparing and presenting project reports.

The internal seminars which should be conducted would be of three main types:

a. to introduce and explain the objectives and mechanisms of new systems and sub-systems to be installed, e.g., cost and selling price estimating; factory productivity statements;

b. to instruct various groups in principles of management and supervision in structured classroom courses. (Typical topics for a seminar for supervisors are given in Appendix G - F.)

c. to train in the relevant management techniques the members of Djuro Djaković staff who will be working full-time with the consultants.

External classroom training for practising managers is undertaken by various bodies in Yugoslavia including the Zagreb Institute of Productivity. These courses cover specific management techniques and functional areas and a programme should be drawn up covering attendance of appropriate courses by line and staff managers of the company.

Qualification Grades

Distribution of Employees by Department and Grade

	VSS	VS	SSS	NSS	VKV	KV	PKV	NKV	Total
TOPI	19	16	84	25	50	409	139	137	879
TSV	13	10	66	24	53	401	133	126	826
TDS	5	12	34	3	33	175	61	28	351
TCK	2	2	13	9	18	120	90	43	297
TSOP	1	3	28	11	13	83	101	187	427
Assembly	15	20	63	13	71	854	223	276	1,535
Maintenance	3	2	30	6	69	275	34	79	498
Foundry			9	2	8	42	26	64	151
Administration	6	11	17	23	6	28	27	88	206
Purchasing	5	14	18	19	3	21	46	80	206
Finance	1	5	68	56		3		6	139
Investment	4	2	7	4		2	2		21
Economics	13	4	8	10	1	1			37
Engineering	82	27	181	103	15	36	12	39	495
Total	169	128	626	308	340	2,450	894	1,153	6,068

Qualification Grades

Grade	Education Involved
VSS	4 or 5 years at University. Diploma in Engineering, Law, Economics, etc. equivalent to UK degree. Total of 16 to 18 years education.
VS	2 years at University. No diploma otherwise as VSS. 14 years education.
SS	Secondary School to age 18 or19. Usually technical course. 12 years education.
NSS	Primary School to 15 years of age. 8 years education.
VKV	Primary School plus 3 years technical school plus 3 years practical course in factory followed by
KV	Primary School plus 3 years technical school.
PK	Primary School plus 3 years practical work in factory - provides qualifications recognised only by the Company.
NK	Primary School only.

SYSTEM OF PLANNED MANAGEMENT AND CONTROL

The Sector for Economics is responsible for overall company planning, whilst the actual planning is then the responsibility of the working units. The basic company plan is made on a yearly basis, and the monthly operative plans and production plans are being made by the working units. There is also the framework of a five-year plan.

The essential shortcomings of the existing planning system are as follows:

- the targets are not sufficiently clear, fixed and analysed
- necessary action for the achievement of the plan is not planned
- the system of plan control is not satisfactory
- the existing method of price and cost planning is obsolete and does not give sufficient information to take decisions
- as there is no production planning there is also no operative planning for other functions.

Recommendations

In order to improve the system of planning it would be necessary to undertake the following:

- a revision of the system of planned management and control, including in the new system: programming, long term plans, yearly plans, and plan control, business analysis, reporting and decisions.
- The system of planned management should answer the following questions:

What is being done?	- Why is it being done?
Who is doing it?	- How is he doing it?
When does he work?	- Where does he work?
How much does he work?	- Who is he working for?

Conclusion

The system of planned management must be worked out and implemented in accordance with the general progress of the organisation and functioning of the Company.

INTERNAL DISTRIBUTION

Aim

The system of internal distribution should be such that:

- it safeguards the investment of business funds required for the optimal development of the company
- it contributes to production increase and therefore to greater success of the company
- it makes possible a just distribution of personal income according to the amount of work done.
- it ensures equal personal income for equal work done.

The existing basis of the system of internal distribution caters for the mentioned aims if properly applied but it is the present method of organisation, planning and control, as well as the allocation of charges, which has lead to anomalies which result in the following:

- investment into company funds is not adequate to cover the needs and principles of distribution which regard income as a function of work
- some working units wrongly appear to be more efficient than others so that inadequate information makes correct decisions impossible
- certain working units have a privileged position regarding the market and this fact reflects on the personal position of the working people in that unit
- same working positions and same work may result in very different personal income in different working units (even 50%) which has a destructive effect
- the same type of work is evaluated differently at various times and in various working units.

All the above mentioned has brought about, in conjunction with other external and internal factors, a tendency to decreasing income which in turn has brought about difficulties in distribution according to the principle of work performed.

Recommendations

In order to accomplish the aforementioned aims of the company we suggest that a system should be developed which could:

- ensure the distributiom of income in such a way that one part would go towards an increased material basis of the company and one part towards personal income depending on the work performed by all the members of the collective
- ensure funds for an increased material basis of the company in accordance with its long term policies
- ensure a distribution of personal income as a function of realised productivity of the organisation as a whole
- ensure that personal income depends on individual contribution towards common success
- ensure that analytical evaluation of jobs gives them parity for the whole company so that the same standards would apply to the same jobs and that there should be a just graduation among different jobs in the whole company
- working units should be formed in such a way that they represent real units technologically and economically
- ensure equal starting point for earnings for all working units
- for special work and individual results of work which cannot be measured and the results of which shall be realised in the next period there should exist special regulations.

Conclusion

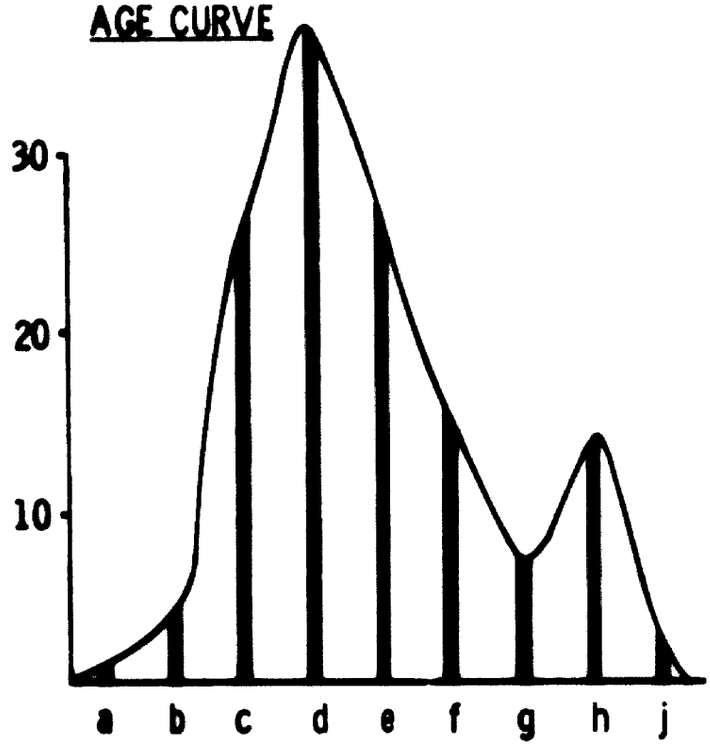
The system of internal distribution must be planned and implemented in such a way that it furthers the organisation and economics of the company.

AGE AND SERVICE DISTRIBUTION CURVES OF TOP 129 DIRECTORS AND MANAGERS

Appendix G - D

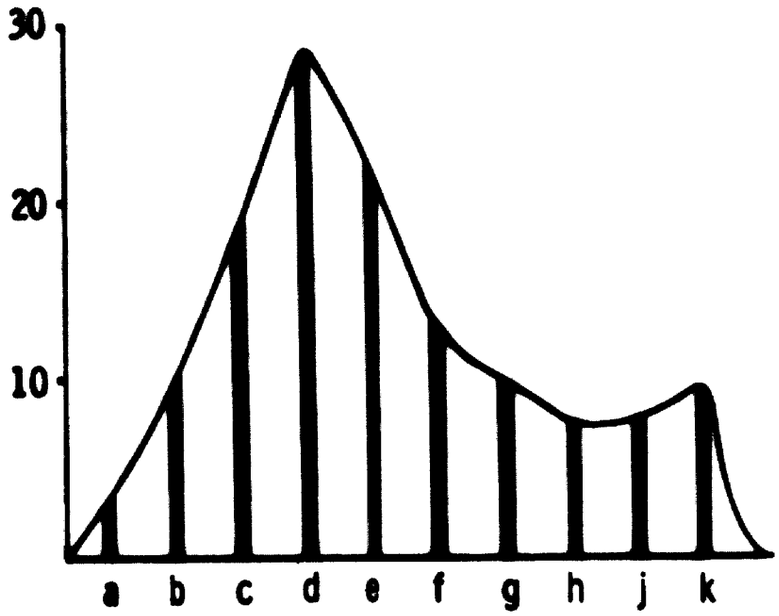
	Age Range	No
a	Up $ 25	1
b	26 - 30	3
c	31 - 35	24
d	36 - 40	37
e	41 - 45	27
f	46 - 50	14
g	51 - 55	6
h	56 - 60	14
j		1

AGE CURVE



	Service Range	No
a	Up $ 4	4
b	5 - 8	11
c	9 - 12	20
d	13 - 16	29
e	17 - 20	21
f	21 - 24	12
g	25 - 28	10
h	29 - 32	7
j	33 - 36	7
k	39 - 40	8

SERVICE CURVE



Senior Management
(by Qualification Grades)

	VSS		VS	SS	NSS	VKV	KV
	Eng.	Other					
Dep. and Asst. G.M.	1	1					
Engineering	7	7		3	2		
Economics	1	2	2	1		1	
Purchasing		2	2	3			1
Finance		1	3	2			
Investment	2	1					
Administration		1	1			1	1
TOPI	6	1	1	1		3	1
TŠV	6	1	1	1		5	
TČK	2		1	1		3	1
Assembly	2	1	5	2			1
TDS	2	1	4			3	
Maintenance	3			1		1	
TSOP	2		2			1	2
Foundry				2			
Institute	8	2					
Total	42	21	22	17	2	18	7

Typical Seminar for Supervisors
Outline of Topics

1. Co-operation with other Departments.
2. Self-improvement.
3. The Foreman and Technical Control.
4. Personnel Policies.
5. Keeping Superiors and Subordinates Informed.
6. Introducing Changes.
7. Inproving Relations in the Firm.
8. Induction of New Employees.
9. Development of Understudies.
10. Getting and Maintaining Discipline.
11. Problem Workers.
12. Building and Maintaining Discipline.
13. Giving Instructions.
14. Absenteeism and Labour Turnover.
15. Planning and Programming Work.
16. Keeping down Production Costs.
17. Handling Complaints.
18. Suggestion Schemes.
19. Accident Prevention.
20. Good Plant Housekeeping.
21. How to win Respect.
22. Organising the Day's Work.
23. Controlling Paper-work.
24. Employee Pay Problem.

H - PROGRAMME OF IMPLEMENTATION

Based on the information supplied to us during the survey it is clear that the Company Djuro Djaković is at a critical stage of its development. The low net profit results of 1969 and 1970 are disturbing enough in themselves, but even more disturbing is the decline in orders received during these years. This decline will be reflected in the results of 1971 and 1972 and reinforces our view that a comprehensive programme of re-organisation and re-orientation must be undertaken relatively urgently.

The objective of such a programme would be:

- to maximise volume of orders and sales
- to maximise profit margins
- to reduce manufacturing and administrative costs

These objectives would be achieved in the quickest and most effective way if the Company had the assistance of outside consultants and it is therefore recommended that a joint project should be undertaken by Djuro Djaković and the Yugoslav Centre for Industrial Organisation and Development working with the general guidance of P.A. International Management Consultants Ltd.

The main body of this report includes detailed recommendations covering programmes for improvement in all the major management functions. The priority areas which should be covered by the project are as follows:

Company Organisation

- Organisation Structure
- Management Development and Training
- Income Distribution (Wage Structure)

Marketing

- Organisation, Policy and Planning
- Estimating, Pricing and Tendering
- Market Research and Information
- Statistics and Control Procedures
- Advertising and Promotion
- Product Development

Finance

- Financial Accounting
- Cost Accounting
- Management Accounting and Control
- Administrative Cost Reduction

Production

- Production Control
- Production Standards
- Plant Layout and Methods
- Material Management

A tentative timetable in Gantt chart form covering the above sub-projects is included as Appendix H-A.

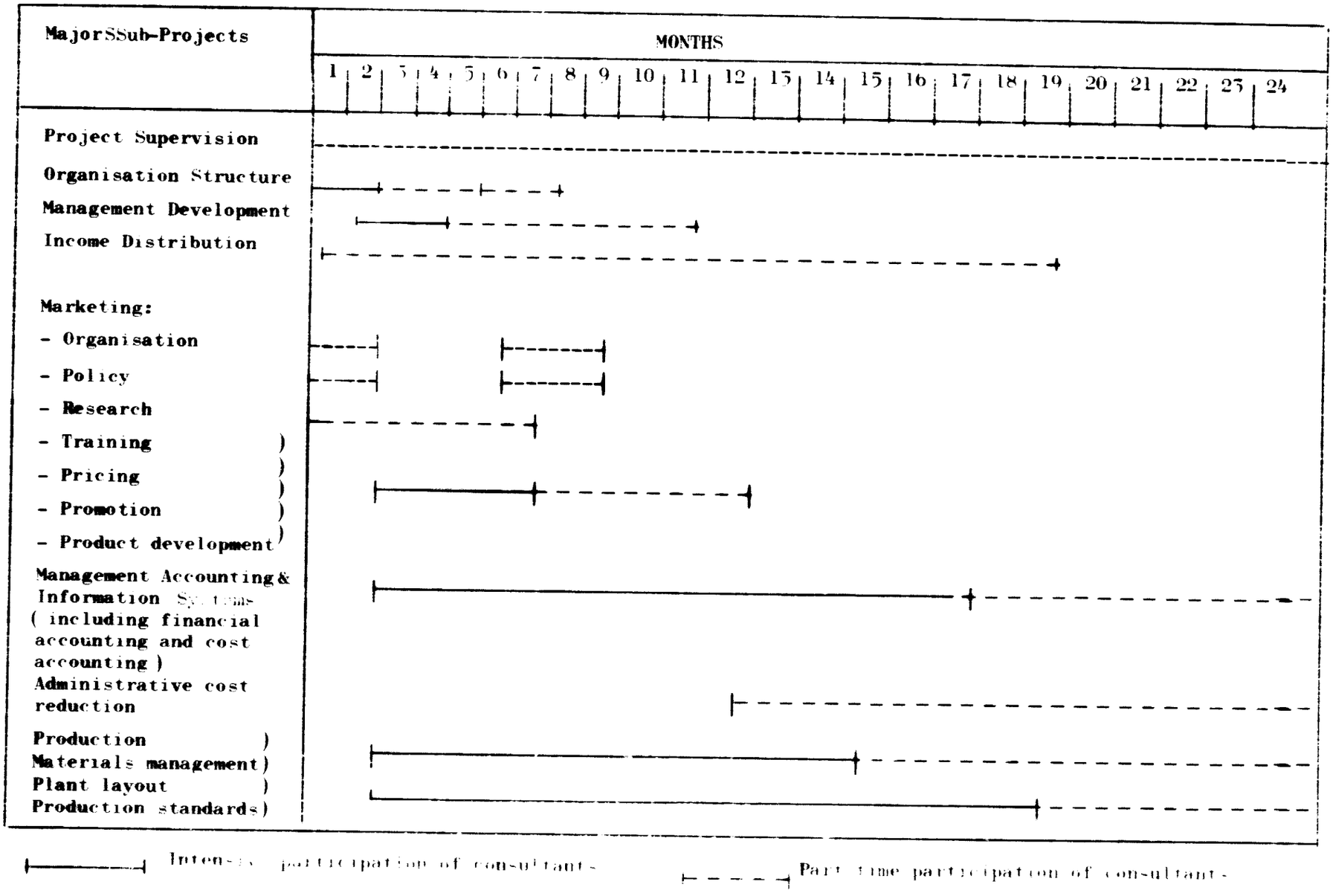
It will be seen from the timetable that the programme of work has been divided into four sub-projects which will be tackled simultaneously. Four teams will therefore be required and it is recommended that the same basic approach be used for this programme as was used during the initial survey stage when the teams were composed of members from Djuro Djaković, from YCIOD and from P.A.

In this case however it is anticipated that the Djuro Djaković team should consist of a Team Leader and 8 or 9 members. These must be high calibre executives willing to subordinate all other interests to that of completing the project successfully. The team should include if possible members with educational backgrounds and experience in engineering, accounting and/or economics and marketing.

TENTATIVE PROJECT PROGRAMME

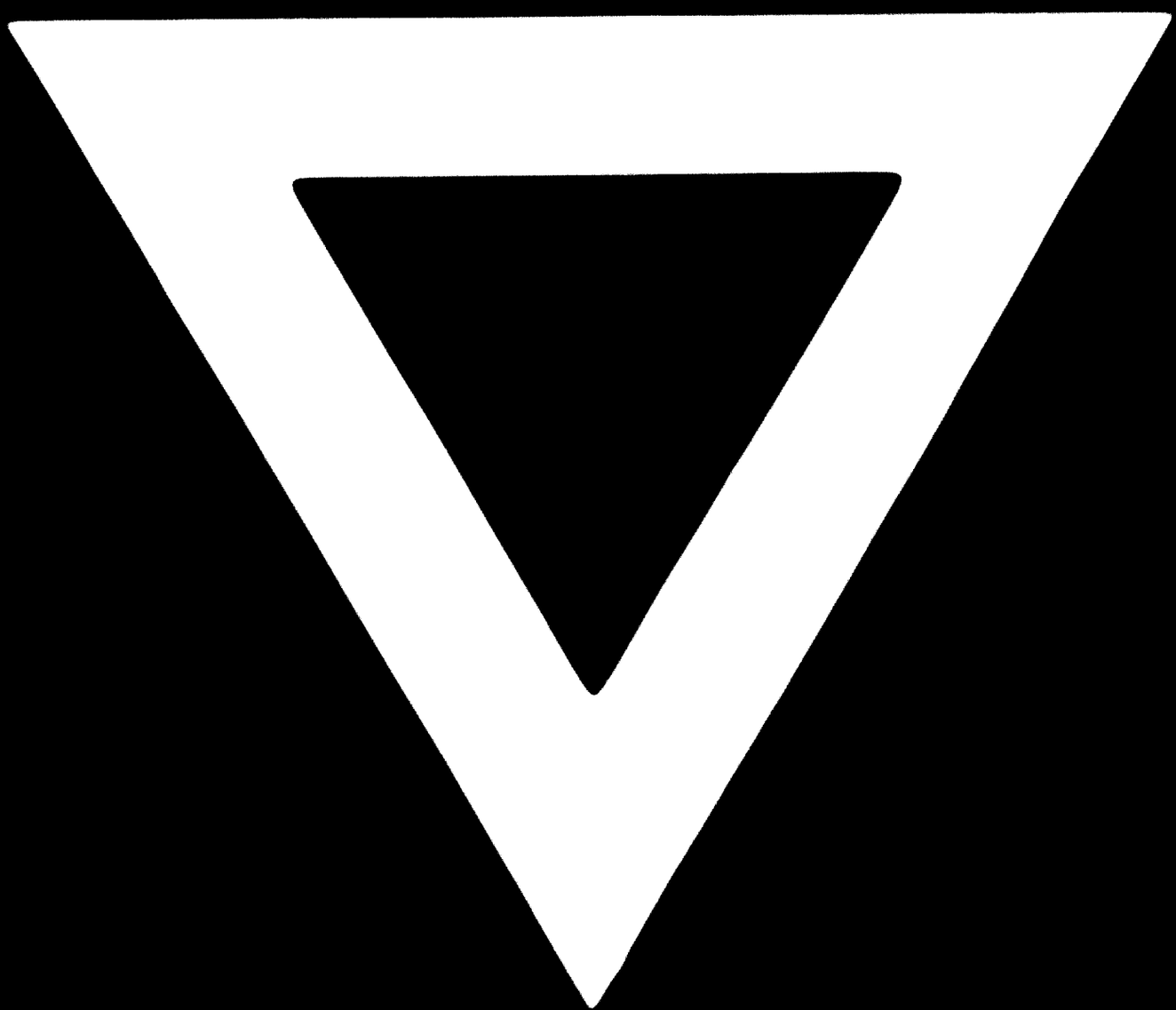
FOR

DJURO DJAKOVIC TEAM WITH CONSULTANT SUPPORT



Appendix II - 1

G-877



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