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FINAL REPORT

TO

U N I D O

ON THE PILOT RESTRUCTURING

ZREMB - FAMABUD

PROJECT NO TF/POL/90/904

Arnold Hill Sp. z o.o.

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Sp. z o.o.

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TF/90/42

Warszawa, 28.01.1992

Attn. Mr Z. Zaleski

Dear Sir,

Final report to the United Nations Industrial Development Organisation on the pilot restructuring project Zremb-Famabud.

The attached report was prepared by Arnold Hill under contract to UNIDO with funds provided by the British Know-How fund.

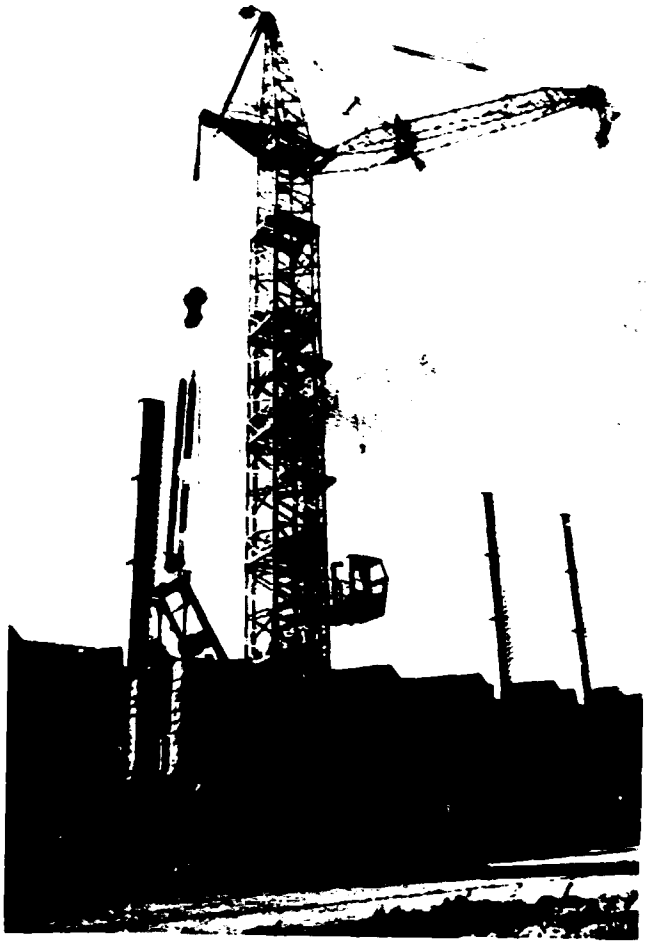
There has also been interest and involvement in this pilot restructuring project by the IDA, British Embassy in Warsaw, UNIDO Industrial Management and Rehabilitation Branch and the Government Agency running and coordinating the Polish restructuring programme.

The purpose of the report is to advise Zremb-Famabud management on the restructuring plan necessary to enable the company to survive in the European market economy. Another purpose of the report is to indicate the type of governmental and institutional support the company needs in order to overcome its difficulties.

Zremb Famabud, located in Szczecin has many potential commercial advantages over other Polish and European companies and should therefore be given support during its restructuring phase in order that it can overcome its liquidity crisis.

Yours faithfully,

Joe Smoczyński



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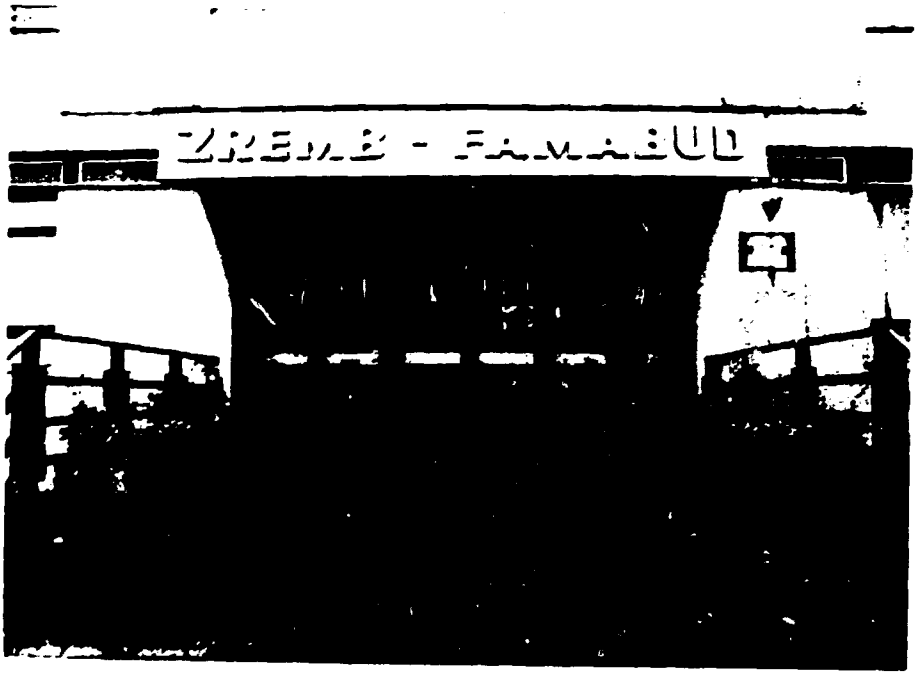

REPORT TO UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION ON THE PILOT RESTRUCTURING PROJECT ZREMB-FAMABUD

FINAL REPORT

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REPORT TO
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
ON THE
PILOT RESTRUCTURING PROJECT
Z R E M B - F A M A B U D
FINAL REPORT

PART I

1. EXECUTIVE SUMMARY

General

101. This report proposes a restructuring and development programme for Zremb-Famabud of Szczecin, Poland. The company traditionally manufactures cranes and railway bogies. Poland now has legislation enabling such companies to be restructured allowing them to function independently within the new market economy.

102. The Famabud's main factory of 44,000 m2, is relatively new and well equipped enabling it to manufacture most parts of a crane and train bogie parts, and also to carry out other small and large fabrications. The company's main 2 factories are situated in Szczecin, on the North West corner of Poland (Appendix A).

103. Famabud's low sales for 1990 of about 1,000 bogie frames and 100 cranes was further reduced in 1991. Less than 10 cranes were sold and no new orders for bogies were received towards the end of 1991.

Conclusion

104. Zremb-Famabud is in a severe liquidity crisis. It was

recording profits in the first half of 1991 when in fact it was making losses. In addition they budgeted for a recovery in the second half of 1991 (Chapter 5 and 6). Without new orders it may not survive to the spring of this year and is technically bankrupt. The company is worth saving because it has technology which can be used to manufacture a very wide range of products made from welded sheet steel. It can also make heat treated gears, shafts, large gear rings, barrels, etc. thus increasing the variety of products it can manufacture. The factory is ideally situated with good road (motorway), rail and sea connections with the West, thus reducing transportation costs. It is unlikely that a western company will want to invest in such a large factory, in this type of industry (Chapter 8).

105. Its current crane is outdated and generally no longer required by construction industry. Bogie production has effectively ceased. Currently they are not producing any new products designed by themselves. It does not have any major new customers for its own products. We estimate comprehensive Government or institutional support in all areas is needed for at least 3 years (Chapter 14).

106. A prototype crane ZB 20 will take many months before it is ready for production. The company does not have a true R&D capability. The export of the cranes to the West requires a certificate in compliance with strict international standards. The company has not previously applied for this certificate for its cranes.

Recommendations

107. The recommendations in the following paragraph are a summary of the short and short to medium term business survival plan. The short term plan must be carried out with vigor. The Managing Director of Famabud has been informed about the short and short to medium term plans since August 1991

(Chapter 5 and 13).

108. Famabud must find new customers from existing contacts and market research (Chapter 11). It should market its abilities to produce fabrications from drawings and reach the stage where it can be accepted by large western companies to tender. In addition Famabud should form cooperation links with other factories having complimentary technology such as electronics and hydraulics. The main aim of Famabud's business plan for the immediate future must concentrate on marketing. The directors together with the marketing department (once formed) should be spending most of their efforts attracting export orders. This includes travelling throughout the EEC following up each lead or favourable response to the marketing drive and turning them into orders. Famabud directors must take action to find a joint venture partner or privatise and find a foreign buyer/investor. Failing this it must seek funds. These should not be given until the company has started implement the restructuring programme as detailed in the main body of the report which includes a structured marketing programme. It should be noted that it is unlikely that a joint venture partner will be found for the whole factory. The factory is too big for the type of industry Famabud is in. This is confirmed by the fact that we were unsuccessful in finding a large western company to take an interest in Famabud.

109. A debt equity swap with the banks would benefit the company immediately and the financing institutions in the long run. Famabud's Managing Director should start such discussions with the banks. We could assist him in this as we have experience in this field in Poland. A successful debt equity swap would "clean up" the balance sheet and make Famabud more attractive for a potential partner.

110. We strongly recommend that a representative of the Government agency or a consultant on their behalf should attend the monthly board meetings in order to give advice and report back to the Government agency. The main duties of the representative would be to monitor the restructuring programme and give advice on future plans and interpreting results compared with actuals. He will know whether the company is working towards its survival or waiting for external intervention or help. We, with our detailed knowledge of the company, would be willing to undertake this duty on behalf of the Governmental agency.

111. The appropriate government official should be approached in order to influence the banks to restructure the debt and guarantee new specific short term loans on favourable terms. Government assistance should be tied to the various stages reached in the restructuring and marketing programme. Loans in the region of 30,000 mln zł at low interest rates are required for approximately 3 years by the company for its restructuring programme (See Chapter 14) if loans are at Polish interest rates. the amount required may be in the region of 70,000 mln zł.. This is in addition to monies received from the disposal of assets.

112. Excess assets should be disposed. Assets include 4 sites valued at 46.600 mln zl (USD 4.0 mln), plant and machinery 1.842 mln zl (USD 160.000) machine tools 509 mln zl (USD 44.000) and stock 3.106 mln zl (USD 270.000) (Chapter 12).

113. Fixed assets which cannot be sold should be rented out at above their variable or direct cost of upkeep. Production at the main site should be organised as to free as large an area as possible to be rented out. Other parts of the site should also be rented out. Crane subassemblies, of the stopped production, which are taking up the valuable factory floor space should be moved allowing the area to be used for

production or for renting.

114. The management posts must be restructured. There should be 5 directors (managing, marketing, financial, production and personnel) as opposed to the 3 at present (managing, technical and production). The number of departments should be reduced and administration and indirect production staff reduced substantially. Finance and marketing directors should be appointed as a matter of urgency. Unions ideally should have less power than at present to influence the choice of directors and their policies (Chapter 9).

115. The management training and retraining is essential. There are many management courses in Poland which are suitable. Members of the management which do not show initiative and are not working hard for the survival of Famabud should be replaced. This also applies at the most senior management level. In addition we recommended to UNIDO that the designer should be sent to the UK for training and that a UK relevant marketing expert should be sent to Poland to advise the company and train the staff.

116. The factory layout should be reorganised, quality, stock and production systems improved. The costing system should be improved to allow the price of each product to be calculated giving management decision making information (Chapter 7). Famabud have lost orders as a result of the inappropriate costing methods used. Opportunity costing methods should be used for the short term survival. Examples include selling the cranes in stock for say half price, accepting order which will recover the direct cost of production and contribute to overheads.

Other matters

117. Our advice in the interim report (summarised in Chapter 5) and subsequent work was accepted by the Managing Director in principle. We advised him of results of our work, the conclusion reached and our recommendations before writing the report. These recommendations or survival plan were accepted in principle. Result being the immediate stopping of crane production and an increase in the marketing activity.

118. Our initial work also included finding a tax saving of 2.000 mln zl (USD 174.000) which reduced Famabud's outstanding tax liability.

119. We contacted companies in the UK and NEI Clarke Chapman's (a Rolls Royce subsidiary) commercial and production directors visited Famabud in November 1991 to evaluate the company.

120. Potain, one of Europe's largest crane manufactures, has now an office in Warsaw. The representative stated that Potain will be looking for a factory in Poland to manufacture about 400 cranes a year. Potain may consider Famabud if their cost and quality problems could be overcome. Potain approached Famabud about 6 months ago regarding the production of certain fabrications in Poland. Potain stated that Famabud's price was too high and went elsewhere. We have offered our services to Potain.

2. SUMMARY OF RESULTS AND MAIN RECOMMENDATIONS

Results

201. The financial condition of the enterprise was examined by analysing the financial records over a period of 3 1/2 years. The main results which were obtained from this study were:

- The company, by Western standards, is technically insolvent.

- Fixed assets have been revalued, by using a replacement cost method, which does not give an indication of their true worth. Recent capital expenditure planned has not been fully reached and the plan for future expenditure due to the lack of resources is impossible to achieve.

- Recently, finished cranes have been included in stock. Previously cranes were produced for specific orders. Stock of finished goods and work in progress have not been written down to net realisable value masking the continuing deterioration of the company. Due to inflation many items of slow moving raw materials have been grossly undervalued.

- Many debtors have been unable to pay but the firms creditors far exceed such receivables due to current liquidity. No account has been made to disclose adverse penalty interest due on such sums, again masking the true position.

- The real results have shown a dramatic downturn in turnover and profit attributable especially over the last two years.

202. The adequacy and appropriateness of financial procedures were examined. The main results were as follows :

- The accounting procedures whilst giving timely information are based upon information required by government during the period of the centrally planned economy and the system is inflexible.

- Due to a lack of appropriately skilled personnel the 1991 results do not agree with that laid down by statute.

- No effective standard costing system was in existence.

- Fixed and variable costs are not accounted for separately.

203. An analysis of the firms operations were carried out with following main results:

Plant, Machinery and Equipment.

- The level of technology in the plant, machinery and equipment is not high but there is machinery which is still unique to the region. The results of this exercise are summarised in chapter 7.

- Only a handful of machinery have more than 50% of their useful life remaining.

- Plant maintenance procedures were poor.

204. Human Resources

- Only 33.8% of employees are involved in direct manufacturing, whilst the indirect manufacturing force is 39.5% of all employees.

- Absenteeism is high with some months exceeding 10%.

205. Manufacturing Process

- Factory layout is poor with fourteen examples given in chapter 7.

- The current shop efficiency (yield) is less than 50% of attended hours.

- Machine tools have probably utilisation of less than 30%.

- The tower cranes are based on traditional designs and do not take advantage of CAD techniques to optimise stress factors and materials used.

- Standard units are used for the bought in mechanical and electrical units and cables resulting in weight and material cost penalties.

206. Formal production planning and control procedures have effectively ceased. As an example previous procedures are shown in appendix A.

- When in existence production planning procedures worked well. However the main weakness were:

1. Lack of accountability,
2. Geared towards the yearly plan, and
3. The information was distributed by another department adding further complexity.

207. Inventory control

- A card index system is used for stock of materials.

- There is no optimum stock level guidelines.

208. Raw Materials costs are normally below West European prices whilst quality has started to improve.

- Availability is good

- Wastage levels have been consistently high.

209. Quality Control Procedures Used and their adequacy

- Apart from the state quality controlled system, which revolves mainly around the health and safety aspects an internal quality inspection system was present.

- The basic philosophy of the quality inspection system was to pass all defects unless they specifically related to breakdown of the product or affected the product performance. This is illustrated by the low percentage of faulty production.

210. Technological R and D capabilities

- The design office is unable to design products from start to finish. The design office can however make adaptations to existing designs.

- Clearly Famabud is incapable of designing the next generation of cranes.

211. Work Methods

- Due to the firm's deep recession its work force is not working under normal conditions and therefore a proper assessment of work methods cannot be carried out.

- Lighting and Heating is poor while ventilation is generally reasonable.

212. Workers Salaries and Incentives

- There is a complicated structure of salaries and bonuses for all categories of staff.

- Six full time staff are used to administer this cumbersome system

213. Capacity Utilisation and Labour of Productivity

- Based upon the production plan for the balance of 1991 labour efficiency is calculated to be 42%. A typical labour efficiency rate in the West would be approximately 75%.

- Non productive indirect staff nearly outnumbered production staff by 2 to 1. In the West this ratio is reversed.

214. A study was made of the firm's fundamental competitive analysis. The main results of the study in relation to size and nature of the market :

- Domestically the emphasis on building programmes is to produce low rise apartments and houses which does not suit the taller cranes currently produced by Famabud.

- Cranes surplus to realistic requirements were purchased by enterprises controlled by central government have now found themselves on the second hand market.

- West European firms can offer cranes under finance leases whilst Famabud is unable to do this.

- Sales to other Eastern block countries have dramatically reduced due to the problems of such countries with economic structural problems.

- Whilst the Western European crane market is buoyant, especially for self erecting tower cranes, Famabud has been excused due to its dated design and failure to comply with international standards

- Cranes produced by Western European countries are between 30% and 80% more expensive than those of Famabud.

- With regards to Famabud's other major product, Bogie Frames, it is unclear what the future for demand would be.

- Special fabrication work is being increasingly exploited by the company.

215. Assessment of Comparative Advantage/Disadvantage

- Quality is an area of particular concern. However the company does have the necessary staff and plant to produce a high standard of finish.

- Numerous illustrations of poor practices have been identified reducing the quality of the final product.

- The current products rely on past design technology.

- Cranes are delivered by rail and both the factory sites at Szczecin have their own sidings.

- Products conform to standards laid down by the Polish Safety Inspectorate.

- Cranes are not certified for use in the West and to embark on an appropriate certificate would be costly.

- Raw materials and parts used are between 20% and 30% cheaper than those readily available from the West, and are freely available.

- Quality of the metal components are up to international standards however other components used are not built to high standards and do not conform to international specifications.

- There is surplus of labour both in terms of numbers and mix.

- Labour practices are entrenched and productivity is low, however wage rates are substantially less than those in the West.

- Famabud compares well with other crane factories within the ex COMECON countries.

- The ZB 20 prototype crane was assessed. Whilst the future for such cranes looks good, the ZB 20 design is dated and does not compare favourably with cranes of similar size.

- Famabud has had problems in commissioning the ZB 20 prototype model.

- The environmental impact of air pollution, water and sewage, noise and solid industrial waste was assessed to be adequate.

216. A study of Famabud organisational structure was undertaken, as detailed in chapter 9. A summary of the results of that exercise is as follows:

- The existing organisational structure is heavily biased towards the manufacturing process. Any decisions reached will tend to have the same bias.

- The structure is designed for a much larger organisation.

- Decisions are made informally.

- Management skills in production and technical levels were considered good, however skills are lacking in such areas as marketing and finance.

- A comprehensive legal analysis on the company was prepared, as detailed in appendix M. The report highlights problems over the title of buildings.

Main Recommendations

217. The report makes a number of conclusions and recommendations within the main study. In addition part IV on performance improvement possibilities and part V on strategy for the enterprise restructuring development make a number of conclusions culminating in recommendations within those sections such as a formal restructuring plan as detailed in chapter 13.

218. The following summary is a list of the main recommendations in this report;

- Regular review of suppliers should be instigated.

- Raw materials should be stored indoors if possible.

- A stock control system should be implemented.

- Raw materials not specifically needed should be sold.

- Reorganise factory layout.

- Partners should be found to help in design efficiency.

- Standard costing system should be introduced.

- Reduction of direct labour should be made by 76 to 96.

- Reduction of indirect labour should be made by 105 to 96.

- Revise organisational structure as described in chapter 9.

- Carry out the five electricity cost saving points, as detailed in section 10

- Carry out the eight thermal power cost saving points as detailed in chapter 10.

- Sell off the two surplus factories and the two holiday centres.

- Negotiate with local authorities to take over the hotel.

- Scale down the canteen facilities.

- Take on fabrication work at the appropriate pricing structure.

- Service existing cranes.

- Sell crane spare parts.

- Consider leasing or scrapping cranes not sold.

- Collaborate with foreign manufacturer on product design.

- Introduce appropriate job costing system to cope with fabrication work.

- Implement quality control recommendations as detailed in chapter 10.

- Expand product range.

- Use marketing consultant, to carry out appropriate assessment.

- For fabrication work either enter Famabud on tendering lists or contact companies which use fabrications.

- Carry out plant and machinery disposal programme as detailed in chapter 12.

- Carry out formal restructuring plan as detailed in chapter 13.

3. INTRODUCTION

Objectives of the study

301. The subject of this report: **THE SZCZECIN BUILDING MACHINES FACTORY ZREMB-FAMABUD**

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302. The purpose of the report is to prepare a proposed restructuring and development programme for ZREMB-FAMABUD following its entry into a market economy. This includes financial and economic analysis, identifying possible new market areas, a selling strategy, advice on its future legal status and seek a western partner for the company. The report looks at the various aspects of ZREMB-FAMABUD and makes a number of recommendations, as summarised in chapter 2 and detailed in the body of the report.

303. As the firm's difficulties need to be remedied quickly the recommendations made in the Interim Draft Report were short term in nature (summarised in chapter 5). This report discusses short, medium and long term remedies.

Background information concerning ZREMB-FAMABUD

304. The main factory is located 5 km South-West Szczecin city centre and about 10 km from the Polish-German border.

305. ZREMB-FAMABUD under the formal planned economy in Poland was

the only manufacturer of tower cranes in the country. The factory was formed in March 1956 as The Szczecin Factory of Building Machines. (Fabryka Maszyn Budowalnych).

306. Production started in Szczecin with gantry cranes . In 1957 production of tower cranes began. The following year an assortment of other cranes were made, from the ZB-30 (3 tonnes lift, height 20 m)to the ZB-160 (60 tonnes lift,height 60m). In 34 years 13 types of crane have been designed and manufactured. One third of the cranes have been exported mainly to other former Eastern Block countries.

307. The present situation shows that exports have decreased sharply. Other items produced have included:-
- straining beams (struts)
- scaffolding
- water tanks
- steel structures for the chemical industry
- fabrications for the mining industry
- train bogie frames.

308. Since 1976 the main part of the factory was moved to its present location at Cukrowa street, Szczecin.

309. Currently Famabud manufactures 2 types of tower cranes, in addition a new mobile crane is in pre-production testing. Various other items have been fabricated recently including large drum spools, gear wheels and yacht beaching trolleys for foreign companies such as 'Liebherr', 'Nivar', 'Hacon', 'Windhoff' from Germany.

310. The firm has leased its original factory site at Łady Street in Szczecin to 'Marine Consultants' and part of the plant at the Cukrowa Street site to Polar-Box (refridgerated container manufacturer) and part of the offices to Ikar (garment

manufacturer).

311. The total area of the factory sites is 211.900 m2 made up of Cukrowa street in Szczecin (184.700 m2), Łady street (20.700 m2) and Łobzie, Wojcielska street (6.500 m2).

312. Currently there are approximately 500 employees in the company - 170 direct workers, 200 indirect and 130 administrative employees. The factory owns some social and recreation facilities in Szczecin, Sierakow and, at Dziwnówek.

Background information concerning the Polish economy and its effect on ZREMB-FAMABUD

313. The following paragraphs are intented to give the reader an indication of the general economic conditions which have affected Zremb Famabud. In addition the report seeks to actively comment on current conditions and therefore possible recommendations. Such recommendations are not directed specifically at Zremb Famabud, but at general economic policy.

314. The company like many others in Polish industry is facing deep economic problems. These are factors which have had either direct bearing on the firm or indirectly as the result of the effects of the weakness in the economy generally. This report concentrates on the former. Such factors which have had a direct bearing on the company in the past include, a guaranteed demand, unrealiable supply of materials, imposed full employment, government bailout during a cash crisis, government investment planning, cost plus costing system, energy wastage, out-dated product design, government imposed statistical reporting etc. Our report concentrates on the

effect of these policies on Zremb Famabud today and gives recommendations on how to overcome them internally.

315. There are however other factors which have affected the economy generally. The effect of these factors can not be remedied by the firm in the short term. These factors resulted from government policies during the change from a planned to a market economy. This change was initiated on 1 January 1990 in what is known as the Balcerowicz plan. Mr Balcerowicz the Finance Minister introduced the internal convertability of the zloty, privatisation programme for state owned companies, a counter hyperinflation policy, self determintation and accountability of companies, abolition of state price controls etc. Later other major factors which hanged the Poland's economy, and for which Famabud had no immediate remedy, was the necessity to trade with the USSR in US dollars and the collapse of the COMECON trading agreement.

316. The government can assist in the short to medium term by ensuring that its external policies have a minimal effect on Polish companies in all industries. Barter trade although somewhat restructured is still possible with the ex COMECON countries such as Russia and the Ukraine.

317. In addition the government should closely monitor the changes in Polish economy and effect programmes to maximise passive and direct assistance to industries. Such passive and active support includes customs duties, devaluation, fiscal and monetary policy, programmes for the infrastructure and construction industries, etc. Foreign investments in Poland could be further encouraged by more favourable taxation allowances for the entrepreneur with relatively small amount to invest.

318. This can be done by negotiation and coming to arrangement with companies in the other ex COMECON countries regarding the export and import of goods. In some barter deals Government support is required to cut through the red tape. We have personal knowledge of barter deals carried out successfully over the past two years between Polish and the ex USSR companies. In some cases without intervention at the highest level the proposed barter could not be carried out. In other cases Government involvement was not required.

319. The support of a few key industries and encouragement assistance or funds from the West will have the effect of stimulating the economy. To illustrate we can take as an example the construction industry, it is not only FAMABUD that could gain, but many other supply companies and industries. This direct help has a "knock on effect" that could help boost the economy. This in turn gives wages to the employees to spend on consumer durables and other goods. Another example using the construction industry to help stimulate the economy is to use conscripted labour in order to reduce the number of unemployed which are not contributing to the economy by "adding value".

320. The advantage in the long term for the economy from say encouraging the construction industry would be an increase in road transport efficiency due to road construction and the increase in labour mobility due to a housing construction programme.

321. A modernisation programme for the railways may have a similar effect. Fast and efficient goods and passenger trains at reasonable prices will help to reduce the traffic on the

Backround information concerning the report

322. Sponsor of the report: **UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
Vienna - Austria

and **BRITISH KNOW-HOW FUND**
London - England

Arnold Hill Sp. z o.o. have been contacted to perform the restructuring study under funds provided by the Know-How Fund.

323. The report takes most of its examples from crane production. The main reasons for this are as follows:

- crane production was Famabud's main product since its formation and therefore any bad practices are more likely to be routine,
- crane production is to continue, although on a smaller scale,
- most fabrications use the same technology as for the crane. Therefore any weaknesses in the crane production process will equally relate to other types of production,
- since bogie frames were manufactured to a higher specification, taking crane production shows the worst case situation,
- the recovery of Famabud to a great extent will be determined by how quickly the staff attitudes change regarding Poland's new market economy. The crane manufacture has most of the typical problems associated with a production led economy which must be overcome.

4. METHODOLOGY

401. The Arnold Hill consultants employed on this assignment were:

Name	Qualification	Responsibility
J.Smoczyński	Chartered Accountant	Project leader
C.Fairweather	Chartered Accountant	Advisor
M.Foti	Chartered Accountant	Report writing & searching for investor
C.Bergel	Polish Chartered Accountant	Financial Analyst
M.Arabudzka	Economics	Marketing
T.Lipiński	M.Sc Eng., Management	Organisational structure and MIS

402. Consultants on this assignment not directly in the employment of Arnold Hill were as follows:

Name	Qualification	Responsibility
D. Anstiss	Production Engineer	Production methods and technology
W.Góral	M.Sc Engineering	Quality and production
M.Góral	M.Sc Engineering	Products and production
T.Poniatowski	Engineer	Organisation and management of shop floor. Crane expert
S.Małysz	Polish Chartered Accountant	Financial Analyst MIS and costing
T.Kozal	Polish Chartered Accountant	Costing systems

403. Time spent by consultants in Szczecin, Warsaw and London to October 1991 is summarised on the following page. The total

Total time charge for UNIDO Restructuring Project
ZREMB – FAMABUD – Poland
(time in hours)

SZ. – Szczecin
W. – Warsaw
L. – London

NAME	JUNE			JULY			AUG.			SEPT.			OCT.			TOTAL			SUM
	SZ.	W.	L.	SZ.	W.	L.	SZ.	W.	L.	SZ.	W.	L.	SZ.	W.	L.	SZ.	W.	L.	
Arnold Hill – Warsaw:																			
J.Smoczynski	20	39	–	45	36	–	26	4	–	32	55	–	–	56	–	123	192	0	315
Cz.Bergel	–	–	–	–	–	–	18	5	–	–	–	–	–	58	–	18	63	0	81
M.Arabudzka	–	–	–	–	33	–	–	–	–	–	–	13	–	17	–	0	50	13	62
T.Lipinski	48	16	–	154	48	–	112	44	–	118	105	–	–	198	–	432	411	0	843
Total AH:	68	55	0	199	119	0	156	53	0	150	160	13	0	329	0	573	716	13	1,301
Polish consultants:																			
W.Goral	50	–	–	18	–	–	55	60	–	40	85	–	–	15	–	163	160	0	323
M.Goral	–	–	–	–	–	–	–	60	–	30	100	–	–	–	–	30	160	0	190
T.Poniatowski	–	–	–	–	–	–	20	50	–	20	120	–	–	–	–	40	170	0	210
S Malysz	–	–	–	84	–	–	70	–	–	30	–	–	–	–	–	184	0	0	184
T.Kozal	–	–	–	18	72	–	–	–	–	–	–	–	–	–	–	18	72	0	90
Total Polish cons.:	50	0	0	120	72	0	145	170	0	120	305	0	0	15	0	435	562	0	997
UK consultants:																			
C.Fairweather				–	14	–	–	–	–	–	–	–	–	–	10	0	14	10	24
M.Foti				44	–	1	–	–	–	58	18	2	–	–	–	102	18	3	123
D.Anstiss	50	–	–	48	–	–	–	–	–	–	–	–	–	–	–	98	0	0	98
Total UK:	50	0	0	92	14	1	0	0	0	58	18	2	0	0	10	200	32	13	245
TOTAL to October:	168	55	0	411	205	1	301	223	0	328	483	15	0	344	10	1,208	1,310	26	2,543
Estimated time to complete:																0	115	25	140
TOTAL to completion:																1,208	1,425	51	2,683

Arnold Hill

number of hours of 2,543 represents 14,7 months. Estimated time required to complete the assignment during November and December is 3 to 4 weeks, bringing the total time to approximately 15,5 months.

404. Arnold Hill Sp. z o.o. also used the services of other experts in the legal marketing and property valuation fields. These experts have worked on previous assignments for Arnold Hill and understand the quality of work required of them. The total time spent on the assignment including these other experts will be in excess of 16,5 months.

UK input

405. Four UK personnel were employed on the project, Joe Smoczyński, Charles Fairweather, Michael Foti and David Anstiss. Joe Smoczyński speaks both English and Polish. Mr Anstiss was the senior engineer on the study and his valuable comments and recommendations appear throughout the report. His initial notes appear urder Appendix I.

Polish input

406. The polish input can be divided into two categories. Firstly the Polish staff working for Arnold Hill and secondly other consultants. Our staff in Warsaw speak both English and Polish and have carried out other assignments thus gaining knowledge of Western practices and methods.

407. The Polish consultants which were seconded to the project have experience in the construction industry. Their input, knowing the Polish situation was proved to be very important. They were able to look out for certain factory practices which would not have been evident to the outsider. These included, the accounting for scrap, labour practices including factory norms, and actual inspection procedures.

Enterprise task force

408. The report was compiled in conjunction with a number of staff from Famabud. Their knowledge of the factory and its

production process was helpful. Help from the Famabud staff was principally from: The main Famabud staff which helped us were :

- Teresa Żywotko - Head of Accounts Dept.
- Janusz Całużyński - Head of Production Technology Dept.
- Mariusz Żelachowski - Head of Construction Dept.
- Zenon Stępień - Head of Economic Dept.

409. Questions we asked and the tasks they were given, helped them to gain another perspective regarding commercial and engineering aspects. In addition our work helped to confirm that certain decisions made were in the right direction for changing the company to cope with a market economy. The main areas where our advice was taken on board immediately (or confirmed the actions they were already taking) included, tax saving, personnel levels, production planning, inventory control, costing of products, overhead cost reduction, direct costs, production procedures, diversification etc. The report does not include all the advice, help and comments that were made.

410. The main problem is dealing with the task force was that they had to carry out their normal duties whilst helping us.

Actual methodology

411. Unlike in the UK or another developed market economy the assignment was divided into two main parts, firstly to give immediate advice on company survival and secondly to advise on the medium to long term strategy. All the team except for Charles Fairweather and Michael Foti commenced work immediately. Towards the end of the first phase advice was sought from Charles Fairweather and Michael Foti.

412. Each of the consultants were given tasks utilising Famabud's staff whenever possible. During lunch breaks on site and in the Warsaw office the consultants held review meetings. This was important because results in a number of areas had to be

compared before conclusions could be reached.When required further assistance from other experts was sought.

413. We approached this assignment by firstly getting to know the company and its products. Then the various aspects of our assignment was divided between the various consultants. It was seen that several tasks would require more input than originally estimated. The work was reassigned and extra manpower organised.

414. Each task was carried out taking after considering terms of reference and the needs of Famabud. Each consultant used the techniques associated with his profession, ie. the engineer used international standards to assess the quality of Famabud's products.

415. From the notes prepared by the consultants the interim and final reports were prepared.

PART II

5. INITIAL ANALYSIS

501. An interim report was prepared in July 1991 in order to draw conclusions and give recommendations at the earliest opportunity. At the request of UNIDO we have included a summary of this report below.

Present financial status

502. The financial position of the enterprise at the end of May 1991 was a difficult one. Not only was it unable to meet its debts as they fell due, but also the company was not trading on a profitable basis. The situation has deteriorated further since the interim report was written.

503. A detailed report on the current financial position of the company and its performance over the last 3 1/2 years is prepared in chapter 6. However an initial analysis is as follows:

a Fixed assets

504. Capital expenditure between 1988 to date has been negligible. The company has been unable to meet its capital investment plans due to lack of funds.

b. Stock and work in progress

505. For the first time there is stock of finished goods as cranes were being produced without firm orders. The factory commenced work on a further 16 cranes, again without firm orders. At current rates of production and low demand there would be sufficient stock for the next five years.

c Debtors

506. Overdue accounts amounted for over 50% of debtors i.e.

English Balance Sheet	1988 mln zl	1988 mln zl	1989 mln zl	1989 mln zl
TANGIBLE ASSETS				
Investments		10		20
Factory Land & Building		3,671		3,771
Plant & Machinery		1,208		1,579
Transport		40		49
Capital assets WIP		286		444
Other fixed assets		82		59
		5,297		5,922
CURRENT ASSETS				
Raw Materials	1,765		3,676	
Work in Progress	635		1,871	
Finished goods				
Debtors	1,472		5,119	
Other Debtors	166		153	
Dividends & prepayments	260		219	
Cash	53		347	
Accured costs	12		54	
	4,363		11,439	
CURRENT LIABILITIES				
Bank overdraft	736		2,931	
Creditors	1,720		3,546	
Gov't buudget tax	470		1,985	
NHI not paid	35		206	
Other Creditors	108		738	
	3,069		9,406	
NET CURRENT ASSETS		1,294		2,033
		6,591		7,955
LONG TERM LIABILITIES				
Bank loan		(696)		(551)
TOTAL NET ASSETS		5,895		7,404
REPRESENTED BY:				
Shareholder's funds		1,251		1,251
Companies own fund		4,227		4,356
Reserves		[illegible]		89
Welfare fund		139		178
Profit & loss in year		278		1,530
		5,895		7,404

English Balance Sheet	1990 mln zl	1990 mln zl	May 1991 mln zl	May 1991 mln zl
TANGIBLE ASSETS				
Investments		16		16
Factory Land & Building		135,776		134,628
Plant & Machinery		40,086		35,671
Transport		1,161		1,032
Capital assets WIP		1,161		421
Other fixed assets		39		11
		178,719		171,779
CURRENT ASSETS				
Raw Materials	10,487		6,749	
Work In Progress	5,517		13,821	
Finished goods			5,978	
Debtors	8,938		10,862	
Other Debtors	154		378	
Dividends & prepayments				
Cash	1,992		884	
Accured costs				
	27,088		38,672	
CURRENT LIABILITIES				
Bank overdraft	8,500		7,000	
Creditors	9,512		12,710	
Gov't buudget tax	1,055		6,215	
NHI not paid	395		974	
Other Creditors	1,328		1,298	
	20,790		28,197	
NET CURRENT ASSETS		6,298		10,475
		185,017		182,254
LONG TERM LIABILITIES				
Bank loan		(995)		(990)
TOTAL NET ASSETS		184,022		181,264
REPRESENTED BY:				
Shareholder's funds		40,585		40,271
Companies [illegible]		141,481		139,982
[illegible]		[illegible]		264
[illegible]		[illegible]		603
Welfare fund		[illegible]		144
Profit & loss in year		[illegible]		
		184,022		181,264

approximately 5.500 mln zloty (USD 550,000).

d Loans

507. The company has a one month revolving credit with the Pomoranian Bank of Credit currently standing at 7.000 mln zloty (USD 700,000). At a rate of interest in May 1991 approaching 100% per annum.

e Creditors

508. Total creditors by the end of May 1991 amounted to over 20.000 mln zloties (USD 2,000,000). Trade creditors overdue, since 1990, for payment amounted to nearly 11.000 mln zloty (USD 1,100,000). Similarly tax and national insurance in excess of 4.500 mln zloty (USD 450,000) was still outstanding from March 1991 in the May figures. The situation is exacerbated as penalties for not settling overdue accounts amount to 140 % per annum.

f Turnover

509. Each years' turnover has shown substantial rise. After stripping out inflation by converting the figures to 1988 prices, turnover actually decreased dramatically in real terms.

Turnover at 1988 prices	Actual	Fixed to 1988 prices	Percentage of 1988
Year ended 31.12.88	8.053	8.053	100
Year ended 31.12.89	19.626	6.923	86
Year ended 31.12.90	81.505	4.183	52
Year ended 31.05.91	29.209	448	6

Present products and markets

510. The products currently manufactured are the two types of cranes ZB 75/100 and the ZB 120/200. Also the prototype crane, the ZB 20 is in pre-production testing. In addition, two types of train bogies are manufactured and a number of specialist fabrication assignments have recently been undertaken ranging from the production of steel drums to a yacht trailer.

511. Brochures and specification sheets are included appendix L.

512. Poland and other former Eastern Block countries have been the traditional market for both the cranes and the train bogies. However, due to the change from a centrally planned market economy the domestic market has effectively disappeared, the reasons are discussed in detail in chapter eight on fundamental competitive analysis. The foreign market has been affected by fundamental changes in the economic structure in Central and Eastern Europe. Due to the low cost of labour the firm has now begun a number of smaller assignments for

specialist fabrication work mainly for clients in Germany.

Recommendation to keep the company operational

513. Without an injection of cash drastic and immediate steps will need to be taken to ensure the survival of the enterprise. It is unlikely Western banks will provide credit when they see the level of debt and the accumulating penalty interests.

514. To make the company's balance sheet acceptable to a Western bank or investor it should be restructured by a debt-equity swap. This would eliminate the debt from the balance sheet and the bank would be paid through dividends or the sale of its shares to an investor. This debt-equity swap therefore capitalises the current debt and stops interest and penalty interest accruing in the future. However currently banks do not appear to be looking in the long term and tend to reject debt equity swaps. In a liquidation situation, the order of payment is firstly the debts to the government budget, tax authorities etc. The likelihood of the banks recovering their loans secured on the assets is small.

515. A detailed restructuring plan is included in chapter 13. However a summary of the initial steps which the company needs to take, which was included in the interim report, not necessarily in the order of priority, is as follows :

- stop production of all cranes until customers found as there are over 15 cranes in work in progress and finished goods representing 3 year sales at current estimates, dispose of surplus raw materials, preferably after shot blasted to improve its sale ability
- sell cranes included in finished goods at a large discount. A 50% discount would not be unreasonable. After this short marketing drive any cranes not sold should be

scraped.

- sell for scrap all the waste material lying on the premises. This will have a two fold effect, generate cash and clear the factory premises thus encouraging good "housekeeping" and efficient production
- contact major manufactures of large and medium steel products for potential fabrication sub-contract work.
- all surplus land and buildings (Worker's hotel, Holiday centre in Dziwnowek and Sierakow and factory sites in the town, centre and Łobzie) should be sold;
- redress inappropriate staffing mix by reducing levels of administrative and indirect factory labour. Indirect factory labour should be reduced by making large staffing cuts in the maintenance secretarial and transport departments. Where a major task is required to be carried out in the future the work could be subcontracted to an outsider.
- review factory efficiency and direct surplus labour to other tasks such as reorganising the factory. This will be an efficient use of labour that is currently surplus.
- create a senior marketing post and employ senior managers with financial and marketing experience.
- revamp management accounts and standard costing system by dividing the factory into accountable departments such as production, maintenance, transport, administration etc. Costs are not distinguished between direct and indirect in the standard costing system. This should be done as a matter of urgency in order that selling prices can be calculated for different levels of production and to take into account opportunity costs.
- review and eliminate, as far as possible, all overheads not specifically related to production. This includes such costs as truck spares, machine spares, stationery, etc. This is a short term measure to release funds for production needs.

- set up implement short term plant to improve quality control and the eradication of bad factory practices. Quality control procedures have lapsed due to the long production runs of several years. With the charge in the product profile quality control documentation and its efficient use is required if export orders are to be produced to a constant high standard.
- set up formal review procedures with design, marketing and quality control. These review procedures will allow Famabud to learn and improve the quality output and deliver on time.
- obtain internationally recognised test certificate (DIN). This cannot be done unless the quality procedures are in place for the prototype crane ZB/20.
- reorganise the internal factory layout to improve production efficiency and control. At present production does not flow through the factory. Parts of the bogie are made wherever there is a space increasing inefficiency.

516. The firm should consider joining forces with another company, in the form of joint venture, partnership or technical collaboration, as long as the immediate result will be firm sales orders or the injection of outside capital. We made an initial contact for Zremb-Famabud by asking NEI-Clarke Chapman (a subsidiary of Rolls Royce to visit the factory). NEI Clarke Chapman designs and manufacture marine cranes and railroad equipment such as bogies, track laying cranes. They have been active in Poland for many years and are looking to increase their presence. The NEI technical appraisal visit was carried out in late November 1991 and an invitation to tender for large dock side cranes was sent to the Managing Director of Famabud. The commercial director of NEI informed us that the trend in the fabrication business is to sell off companies and not buy them. Most of NEI's and other large

engineering companies work is subcontracted out, thus reducing the burden on the group in times of recession

New markets

517. The company needs to diversify its product range. In the short term it should seek to carry out fabrications on a subcontract basis. Due to their very nature, fabrications are labour intensive and wage rates in Poland are low. In addition as the factory is very close to the border, hence Western Europe, it should be possible to find companies willing to order from Famabud. The company has already started along this direction and accepted a number of small orders including cable drums, boat trailers etc.

518. Initially was thought that quality control was more important than marketing. This conclusion was reached under the assumption that unless the quality of the final product was improved it would not sell. However the company has improved the quality of its products. That was amply demonstrated when it carried out subcontract work for a German company. The product was rejected by the Germans and returned to the factory. The product was eventually reworked to the quality required. Furthermore after further enquiries it was found that there is a quality control system designed for the factory but over the years slack practices crept in.

519. It has become increasingly important, due to the liquidity problems, to seek subcontract work as a matter of urgency. Marketing advice would help them to achieve this.

Product changes

520. The company does not have the skills or resources to develop its own products. At best it can change and improve current designs and specifications. In the short term the company

should complete the ZB 20 after considering the changes necessary to make it acceptable in the West.

521. It appears that a potential contract with Volvo (which Famabud's Managing Director informed UNIDO in July 1991) to make parts of a dumper truck, has been given to Bumar-Łabędy in southern Poland. The company should seek new product lines by contacting the large multinational heavy manufacturing firms in Western Europe.

PART II - MAIN STUDY

6. FINANCIAL CONDITION & PERFORMANCE

Analysis of financial statements, including ratio analysis and comments on present situation

601. The financial statements for the three years to 31st December 1990 and for the first 6 months of 1991 were summarised and analysed. Further details of this analysis appear in Appendix K.

602. An analysis of the financial statement was undertaken, however during the period examined Poland suffered from hyperinflation. Therefore our report tries to take this into account when coming to any conclusions. It should be noted that accounting for inflation is a complex subject and with many differing views. Therefore the amounts adjusted for inflation have only been used to identify a trend and its magnitude.

603. The first main point when comparing all periods is the substantial increase in net assets in 1990. This is practically solely due to the mandatory requirements by government to have buildings and machinery revalued mainly for fiscal purposes. This valuation method bears little resemblance to either the assets' economic or disposal value.

Balance sheet

a. Fixed assets and capital expenditure

604. Fixed assets have been revalued on 31st December 1990 in

accordance with government regulations which came into effect on 1st January 1991. A further more detailed revaluation took place in 1991. After these revaluations the value of fixed assets increased by a factor of 30. Fixed assets were not revalued in 1988 or 1989. Hyperinflation last peaked in January 1990 and has been reducing since.

605. Famabud's board of Directors of Famabud approved capital expenditure of 3,107 mln zloties in the 1991 budget when it was apparent that the company was in a liquidity crisis. The plan was not realised.

b. Stock of work in progress and finished goods.

606. As can be seen from the following schedule stock appears to have increased over 3 years however if inflation were to be stripped out the reverse situation will be seen.

6 H. SUMMARY OF STOCK, WORK IN PROGRESS AND FINISHED GOODS AT THE END OF THE YEAR (HISTORICAL COST)
(MLN ZL)

	31.12.88	3..12.89	31.12.90	31.05.91
Raw materials	1.765	3.676	10.487	6.749
Work in progress	635	1.871	5.517	13.821
Finished products				5.978
TOTAL	2.400	5.547	16.004	26.548

6 I. ANALYSIS OF RAW MATERIALS IN FAMABUD

item	31.12.88 mln zl	%	31.12.89 mln zl	%	31.12.90 mln zl	%	31.05.91 mln zl
materials from foundry	721	40,8	1.162	31,7	2.833	26,9	
other steel materials	300	17,0	639	17,4	1.795	17,2	
subassemblies	129	7,3	240	6,5	748	7,1	
transport parts	323	18,3	814	22,1	2.285	21,8	
electrical parts	104	5,9	151	4,1	1.191	11,4	
other materials	188	10,7	670	18,2	1.635	15,6	
TOTAL	1.765	100,0	3.676	100,0	10.487	100,0	6.749

607. Inventory turnover has fluctuated over 3 years but calculations based on the results for the first five months amount to 170 days. As production is low , in general terms, stock levels are sufficient to satisfy current levels of production for at least the next year.

6 K. SUMMARY OF MATERIAL TURNOVER
(mln zl)

period (year)	opening balance	income	consumpt.	closing balance	stock T/over in days
1988	959	5.256	4.450	1.765	145
1989	1.765	8.355	6.444	3.676	208
1990	3.676	43.388	36.577	10.487	105
31.05.91	10.487	10.736	14.474	6.749	170

608. It should be noted that in the above schedule stock turnover in days is probably overstated for 1989 (208 days) when inflation was increasing (70 % in December 1989 alone) and understated in 1990 (105 days) when it was on the decline. If the production profile is altered to any significant extent this will lead to the majority of stock being obsolete. During 1991 the value of stock scraped was 184 mln zloties

(USD 18.000). By May 1991 the substantial amount of work in progress meant that a large amount of working capital was tied up in this figure of was 13,821 mln zloties (USD 1 mln 300) or 47% of turnover. The factory had started producing 16 cranes which formed the bulk of the work in progress.

609. It should be noted that it was company policy to keep large stocks of materials because of unreliable suppliers. This is now not the case. Although stock values reduced in 1990 due to production utilising newly purchased items, there is a hidden value because slow moving items bought during the period of hyperinflation are shown at historic cost. If these items, which are slow movers, were sold they will realise a book profit many times their recovered value. For instance there are tonnes of steel-sheets, pipes and bars recorded in the books at between 5 and 20 % of todays purchase price. Therefore the stock turnover of 170 days is understated.

6 L. FACTORY WORK IN PROGRESS

at the day	amount mln zl	% of sale value
31.12.88	635	7,9
31.12.89	1.871	10,6
31.12.90	5.517	6,8
31.05.91	13.821	47,3

6 M BALANCE AS AT 31.05.91 WORK IN PROGRESS WAS AS BELOW

item	amount	value (mln zl)
Bogie frames 26TNa	200 pcs	4.462
Crane ZB-75/100	11 pcs	2.712
Crane ZB-120/200	5 pcs	3.712
Spare parts for cranes		84
Other work in progress		2.564
Other crane parts		287
TOTAL		13.821

610. There was a large increase in work in progress in 1991 being 47,3% of sales value. We advised the company's management to cease production of the cranes until customers were found. Material purchases were using up scarce working capital.

611. In addition further nine cranes valued at 2.978 mln zloties (USD 260.000) are included, at cost, in finished goods. This is the first time (1991) the company has produced cranes without firm orders.

BALANCE AS AT 31.05.91 IN FINISHED GOODS STORES

Cranes ZB 75/100	9 pcs	5.978 mln

c. Debtors

612. Debtors have steadily increased as a proportion of turnover and at the end of May 1991 amounted to 10.680 mln zloties (USD 1 mln) or 37.2% of turnover. It now takes the company an average of 56 days to receive the amount due. One debtor is Constall-Chorzów owing 6.579 mln zloties (USD 600.000) or 66,6 % of debtors. Due to the high costs of borrowing, if invoices are not paid within 14 days they are classified as overdue and charged penalty interest . Amount due after charging penalty interest for this period is 5.550 mln

zloties (USD 500.000) or 51% of total debtors. In spite of trying to collect these outstanding sums in the courts the collection performance of the company has, as compared with 1990, deteriorated.

6.P. MAIN DEBTORS (as at 31.05.91)

1. "Konstal" Chorzów	6.579 mln zl
2. "Mostostal" Słupca	1.049 mln zl
3. "Marzen Consultants"	1.242 mln zl
4. Biuro Zaop. i Zbytu Sosnowiec	689 mln zl
5. Total	
(88% of total amount of receivables)	9.559 mln zl

d. Debtors

613. The company is utilising the 7.000 mln (USD 700.000) loan issued to it by Pomoranian Credit Bank, which is renewable monthly . The interest rate on this loan is approximately 83% per annum as at July 1991. In addition the Bank takes a 1% per month commission making the cost of borrowing near 100% per annum. Poland's inflation rate has reduced dramatically making the real cost of borrowing unusually high. Interest rates are likely to fall as banks become more confident that it will not reach its previous levels. The enterprise also has an interest free loan of 950 mln zloties.

CREDITS AND LOANS
SFMB Famabud long-term credits at "0" % interest rate: 1. "Rafinery Czechowice-Dziedzice" (Bielsko-Biała district) - 940 mln zl - purpose: building of a canteen at the resort in Dziwnówek - annual repayments from 1991 amounting to 10 mln zl 2. "Polam" in Gostynin - 30 mln zl granted in 1987 - annual repayments from 1991 amounting to 10 mln zl 3. "Mostostal" in Poznań - 20 mln zl granted in 1987 - quarterly repayments form 1990 amounting to 2.5 mln zl

e. Creditors

614. As at 31st of May 1991 consisted of:

6 R. CREDITORS

	mln zl	USD
Trade creditors	12.710	1.200
Tax	6.215	600
National insurance	924	90
Other creditors	1.298	120
TOTAL:	21.197	2.010

615. Due to the difficult financial position creditors are not paid when due. About 85% or 10.822 mln zloties (USD 1.000.000) of trade creditors are overdue as well as 64% or 649 mln zloties (USD 60.000) of liabilities for tax and national insurance.

6 T. OVERDUE CREDITORS

SCHEDULE OF OVERDUE CREDITORS (LIABILITIES) ON 31.05.91	%	AMOUNT MLN ZL
from May 1991 (to 30 days)	1,4	149
from April 1991 (to 60 days)	28,4	3.078
from March 1991 (to 90 days)	19,2	2.079
from Feb. 1991 (to 120 days)	26,2	2.831
from Jan. 1991 (to 150 days)	20,1	2.178
from 1990 (over 150 days)	4,7	507
TOTAL	100,0	10.822

616. The current situation is exaggerated by the high interest rate penalties on overdue amounts. These currently stand at 140 % per annum. By May 1991 the firm in addition owed 7.000 mln zloties (USD 700.000) to suppliers and 2.000 mln zloties (USD 200.000) for tax and national insurance due to such penalties. The May balance sheet prepared by management only recognised 1.400 mln zloties (USD 140.000) of interest of penalties.

f. Profit and loss accounts

617. Starting from 1989 turnover in fixed price terms, has reduced together with the number of units sold

6 U. UNITS SOLD

	1988	1989	1990	1991
Cranes (units)	130	134	104	5
Bogie frames (units)	5.559	3.606	1.008	377

618. As a result of hyperinflation turnover has shown a dramatic rise from 8.057 mln zloties in 1988 to 81.505 mln zloties in 1990.

6 V. SALES (HISTORIC PRICES)

to 31 Aug 1991

	31.12.88		31.12.89		31.12.90		31.08.91	
	amount	value mln zl	amount	value mln zl	amount	value mln zl	amount	value mln zl
Crane ZB-75/100	94	2.305	107	6.851	94	44.155	5	5.935
export	30	816	40	3.138	91	41.429		
home	64	1.439	67	3.713	3	2.726	5	5.935
Crane ZB-W-75/100	14	281						
home	14	281						
Crane ZB-120/200	16	808	23	3.055	10	5.995		
export	5	244	4	269	9	5.015		
home	11	564	19	2.759	1	980		
Crane ZB-301	6	110	4	80				
home	6	110	4	80				
Bogie frame 25TNa	5.539	4.000	3.606	6.549	1.008	23.169	522	25.597
Other		549		1.091		8.186		10.272
Total		8.053		17.626		81.505		41.804
Compared to 1988 values		100%		219%		1.012%		519%

619. It should be noted that sales price has increased more than inflation. One ZB-75/100 in 1988 was sold for an average of 24.5 mln zl and in 1991 for 1.187 mln zl a increase in invoice value of 4,845 % .

620. The company's gross profit increased substantially due to inflationary stock holding profits. However net profit to turnover has decreased dramatically for the same period. This is due to the reduction in demand.

6 W. GROSS AND NET PROFIT PERCENTAGES

	Gross profit percentage	Net profit percentage
1988	17.2	5.0
1989	30.7	8.7
1990	15.1	0.9
1991	34.3	0.5

Summary

621. The foregoing is a schedule of the profit and loss accounts for the three years to 31st December 1990 and for the five months to 31st May 1991.

622. PROFIT AND LOSS ACCOUNT AND DISTRIBUTION STATEMENT

mln zl.

	31.12.88	31.12.89	31.12.90	31.05.91
sales	8.053	17.626	81.505	29.209
other income	33	197	1.421	711
production costs	(6.598)	(13.001)	(71.898)	(19.867)
finance expens.				(1.614)
extraord. profit	40	300	4.171	654
extraord. loss	(98)	(229)	(3.773)	(1.725)
turnover tax	(297)	(907)	(589)	(552)
gross profit	1.133	3.986	10.837	6.816
corporation tax	(646)	(1.432)	(4.471)	(2.910)
dividends		(550)	(5.415)	(3.692)
wage penalty tax	(82)	(474)	(259)	(70)
net profit	405	1.530	695	144
	====	======	====	====
profit distribut.				
shareholders fund	354			
welfare fund	49	1.527	685	
social	2	3	10	

622. One cannot look at the profit and loss accounts, when the company was trading in the planned economy, and make the same conclusions as a company in a market economy.

623. The profit figure for the first half of 1991 is a spurious one because :

1. A substantial amount of costs have been incurred in manufacturing cranes without firm orders. These costs have been rolled up in work in progress and finished goods.

2. The transfer to "total costs" was not only based on budgeted figures but also the transfer of such costs did not take into account any recovery of general overheads. In other words fixed overheads, not directly relating to production, were transferred to work in progress.

Adequacy and appropriateness of financial procedures, recording and reporting system.

624. Until 31 December 1990 the accounting coding structure was imposed on the company by the Ministry of Finance and the reporting, to some extent, by the statistical department (GUS). The main emphasis of the accounting system was to collect information in order to facilitate central planning by the government, and the calculation of the monthly tax liability by the 16 the day of the following month.

625. The monthly accounting process can at best be described as a paper collection exercise organised in such a way as to build up the required reports on a regular basis. There are no ledgers and day books as understood in the West. Most of the accounting paper work is processed in batches.

Identification of new financial and accounting arrangements

626. Bookkeeping in Famabud is carried out using different methods of recording. The main part of the document registration is conducted by hand: sales day book, costs ledgers, receivables ledgers, purchases day book, trial balance, etc. Analysis of some financial accounts is carried out mechanically. The tangible assets register and depreciation calculations are carried out by a computer company in Szczecin. The stock and work in progress is on a register updated on the factory computer (compatible with PC AT).

627. The financial information system is therefore not very useful for managing and decision making.

628. In addition to the above reports, Famabud's Economic Department prepares monthly economic information for the management, such as a trading profit and loss account. They also prepare reports on raw-materials, finished goods and work in progress, receivables (debtors) and liabilities, cash and loans and sales mix. Other information includes variance analysis of planned production to actual, costs of the transport services, maintenance , labour efficiency, number of employees, wages and salaries, and average wages.

629. Although the above information produced for management appears to be relevant for decision making, it is not. The main reason is the accounting convention imposed on Polish companies, examples include :

(a)The Bookkeeping Department does not record all costs i.e.: overdue interests for creditors, suppliers and budget. The information is not recorded on a proper accruals basis. These costs to 30.06.1991 were over 9.400 mln zl. In the fact

instead of the 8.200 mln zl net profit as reported to management there was a 1.200 mln zl loss (8.200-9.400) which is not highlighted in their reports.

(b) Work in progress and finished goods tend to have more costs allocated to them then is normal in the West. The result being, the company can manufacture solely for stock, sell only a minimum amount and still show a profit.

(c) The costing system does not differentiate between variable and fixed costs thus making it impossible to calculate true variances and different levels of production.

(d) The costs tend to be grouped together on the financial statements not allowing a proper breakdown between fixed and variable costs. To improve the MIS /management information system/ and DSS /decision support system/ it is necessary to create an information system which includes:-

- information about fixed costs
- break even point analysis
- marketing analysis of present and future conditions
- economic analysis of departmental costs in production (dept.W1,W2,W 3) and effectiveness of their utilization
- information about costs and effectiveness of tool shop, maintenance department, energy costs, etc.
- information about costs and effectiveness of the transport department and internal transport.

630. There is no reporting system available for calculating meaningful variances to budget. Whilst such a lack of a standard costing system would be regarded as a fundamental weakness in the West it is normal for such systems not to be present in Poland. This weakness hinders the management in controlling production efficiency, in direct costs

(transport, maintenance etc.) and administration expenditure.

631. A new system should be introduced to determine work effectiveness in production and supporting departments based on standard costs and the reporting of variances. Relevant information to management should be generated regularly to enable them to make the right decisions.

632. A finance act was passed late in 1990 stating in effect that all companies in Poland are to keep books of account, adopt the accounting conventions and report to relevant authorities in accordance with the EEC Fourth Directive. This freed companies to choose the own chart of accounts to suit their environment. Many companies have changed their ineffective MIS to a more meaningful one allowing for better informed decisions to be made.

633. Unfortunately due to the fact that the position of a finance director has been vacant for over a year, Famabud's bookkeeping system and reports are being prepared partly on the old accounting conventions. It appears that they have not fully made the change. It is therefore important that Famabud should appoint a finance director as soon as possible. By not adopting the new legislation the company's financial statements for 1991 need to be reworked before they comply with the act.

634. The company should have a new MIS, but before this can be realised the accounting system needs to be changed in order that the information required is automatically generated. The present accounting system needs to be changed as follows:-

a. fixed and variable costs are separately accounted for,

b. that the company should be divided into profit or costs centres i.e. transport, maintenance, production, administration.

c. the accrual method of accounting should be adopted fully.

d. day books and control accounts should be introduced so that, together with ledgers, they give a better control of the whole financial recording system.

e. setting up of accrual accounts for expenditure which relate to more than one month.

f. the accounting system should be integrated with production and stores so that information relating to stock levels, finished goods stock etc. could be generated as a matter of course.

635. Such a system will enable better management information to be generated as matter of course not requiring special exercises. Using such a financial system will allow the reports to be ready earlier and thus aid the decision making process.

Computers

636. The company has 4 IBM PC's (personal computers) which it is not utilising fully. A plan to computerise the accounting department and stock and work in progress records never materialised. With additional expenditure for items such as a PC with a large hard disk file server and networking hardware and software, off the peg integrated Polish accounting software could be purchased and installed.

637. As Polish computer software is only now being developed

giving the appropriate management information the company may need to spend additional amounts to developed the reporting module. Since Famabud is in severe financial difficulty and software packages are being currently developed it may be better for wait before expending funds in this area.

638. We advise against purchasing western software because firstly they are not designed for the Polish system and accounts need to be in Polish and secondly any subsequent changes in legislation may involve high reprogramming costs. Polish software houses normally update earlier versions at no extra cost.

639. The costs of computerisation should be compared to the saving in staff costs and the gains made enabling decisions to be made earlier.

Breakeven analysis

640. It is estimated that the company's fixed costs for 1991 will amount to 37.000 mln zl (US$ 3.7 mln) or 41 % of total costs. The break even analysis calculations on the sale of the most popular crane ZB 75/100 results in turnover at breakeven point of 74.000 mln zl (US$ 7.4 mln) or 67 units sold. The calculations also show that based on the cost/sales price structure for the first half of the year the breakeven point is only 20 units or 23.000 min zl (US$ 2.3 mln). This is as a result of using historical cost for materials and therefore the break even calculations automatically take into account this lower cost. Naturally using historic costs during an inflationary period to calculate break even point gives a false impression of the situation. It is appropriate to use current material purchase costs.

Current cost account and inflation

641. Poland has had hyper-inflation during 1989 and 1990. It is therefore difficult without adjusting for inflation, to make an accurate analysis between the years 1988 and 1991. The government in an attempt to produce current costs accounts issued fixed asset indices which were to be used in the financial statement. With hindsight it can be seen that these indices do not reflect inflationary increases between one year and the next. It should be noted that companies pay taxes on the book value (after indexation) of their fixed assets and therefore the indexation could be influenced by government budget requirements. Having said this they give a better indicator of the company's current cost book value than if no indexation was used.

642. The profit and loss account is shown at historic cost. Due to some of Famabud's material stock being old (more than 18 months) the costs of goods sold is understated in real terms giving an over inflated profit. In addition during the period of high inflation in 1989 and 1990 Famabud's trading result included the company's anti-inflation policy which was also practiced by many others. It was better to invest available money in purchasing materials and sell the finished product as late as possible at higher prices. The result being that the historic profit and loss accounts did not show a true view, but marked by stock holding profits. This concealed the underlying problems the companies were facing resulting from changing to a market economy and losing COMECON contracts.

643. The current cost profit and loss accounts using 1988 as the base year are as follows :

6 Z. TURNOVER FIXED TO 1988 PRICES

	Historic value	Fixed to 1988 prices	Percentage of 1988
Year ended 31.12.1988	5.053	8.053	100
Year ended 31.12.1989	19.626	6.923	86
Year ended 31.12.1990	81.505	4.183	52
Period to 31.05.1991	29.209	448	6

644. It can be seen, like many Polish companies, the Famabud's economic problems started in 1989 or earlier. Inflation hid the true results and eroded the purchasing power. The break up the COMECON market just added to the problems.

7. OPERATIONAL ANALYSIS

701. Additional details relating to this chapter are shown in Appendix I.

Assessment of plant, machinery and equipment

a. Level of technology

702. The general level of technology is not as high as that which would be expected in the West. The various machines in the factory are well used and there is very little sign of computerisation or latest technology on the factory floor.

703. An exercise was carried out to isolate machinery which is unique in the region. Whilst this does not show the use of high technology , it does show that the firm possesses machinery capable of specialist tasks and also the skills to use them. A schedule of these machines appears on the next page.

704. The other parts of the enterprise tend to rely on Poland's surplus of labour such as the design department which does not use a computer aided design system and the accounts department where most functions are carried out manually.

b. Condition of plant/ machinery

705. Only a handful of machines on the factory floor have more than 50% of their useful life remaining. The factory was built in 1956 and most of its equipment including overhead gantry cranes was new when installed.

c. Maintenance

706. Most of major repairs are carried out by outside contractors. Individual departments are required to:-

- report the damage ;make a periodic inspection, lubricate

BASIC CHARACTERISTIC DATA OF THE MACHINES WHICH ARE UNIQUE IN THE REGION

(6 FIRST POSITIONS)

		Table area	Revol.	φ spindle	max drill. depth	max.stretch	spindle shift on the column	column shift	precision of work (mm)	installed power kW	% of wear
Horizont.	W 160	2000x2000	360°	160	1600	1250	2500	3000	0.05-0.1	110	75
boring	WD 160 A	2000x2000	360°	160	1600	1250	"	3150	"	75	75
machine	WD-160	2000x2000	360°	160	1550	1250	"	3300	"	75	75
		φ table	max.turn. height	max.weight of worked objects	angle of supports turn	table revolut.					
Vertical	[illegible]	[illegible]	2000	45t	15°+40°	0.66 62.1(no degree)			0.05	63	55
boring											
mill	[illegible]	2800	1600	16t	± 30°	1.25-63(18°)			0.05	69	30
		centre height	centre distance	spindle internal grinding	centre cone MK	spindle revolut.					
Drum lathe S 601		525	2500	130	6	5.6-560(21°)	Drum lathe S 601		0.03	30	15
Casting cleaning plant Gietort		- passage of elements of the size 2300x480; weight 500kG/mb, - min. transport lenght = 2000, min.thickness of cleaning sheet = 3 mm.									60
Rolling mill HPV 36x1500		- max.thick.of coil.sheet 36; max.width of coil.sheet 1500; min.coil.diameter 600; roll pressure 194t; roll revolution - 2 rev./min.								22	50
Folding brake PPNMA 40/200		- pressure 200t; working table lenght 4000; slide pitch 250; stretch 300; table width 280; working speed 8mm/sec; return speed 60 mm/sec;								14.7	50

and adjust the plant as necessary;

- carry out minor repairs.

707. The periodic inspection is made superficially resulting in greater wear. This is partly due to the lack of working practice and partly due to the lack of technical education at shop floor level. Repeated visits to the maintenance departments confirmed a lack of organisation and repairs were not carried out when planned. In addition outside contractors often do not make correct repairs resulting in additional wear to plant.

Human resources

a. Labour market in Szczecin

708. The unemployment amounted to 2,5 % in Szczecin area on 31st August 1991.This is a very low rate in comparison with other areas in Poland; for example Suwałki Province having 16,2% unemployment. There is therefore a shortage of available well-educated workers in Szczecin.

b. Employment changes in Famabud

709. The number of employees has decreased to 506 by the end of August 1991. During 1988 the number of employees averaged 1,000. There are 33.8% of employees in direct manufacturing.The indirect manufacturing labour force is 39.5% exceeding the number on the shop floor.

c. Absenteeism and moral

710. Absenteeism has constantly been over 5% recently. However in recent months this has easily exceeded 6% with two months reaching nearly 10%. An analysis by department has been made for 1991 and shows absenteeism reaching 22% in the production department W1 and 17% in production department

W2. These production departments have felt the full force of the reduction in demand for the company's products and therefore with prospects diminishing absenteeism has increased and hence moral decreased.

Analysis of manufacturing process

a. Factory Layout

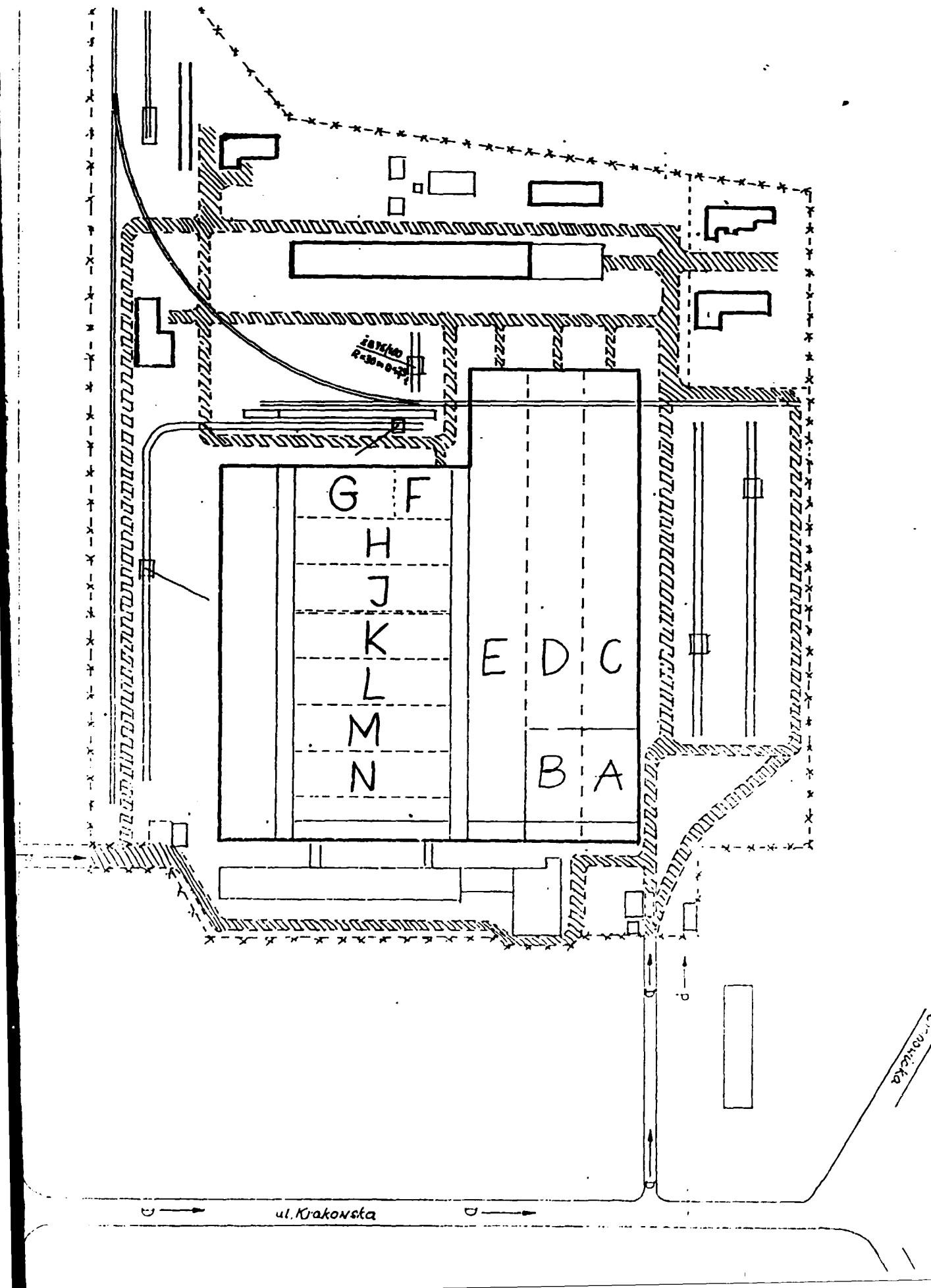
711. The initial concern must be the under utilisation of factory working area, a fragmented location of the various disciplines within production, the general disregard of safe working practice, and a general aura of clutter that detracts from a purposeful working environment.

712. Initially the layout of the production facility was, no doubt, instigated with a good working practice. During the passage of time the logical sequence of manufacture has been disregarded and this has resulted in "there's a space lets put it there" attitude. This inefficiency results in lost time, unnecessary material handling, lost components, and the need for additional work to be carried out. This lengthens the lines of communications, introduces the degradation of quality (i.e. where a cleaning operation requiring the use of 'off-hand' grinder is in proximity to finished parts). There are other examples of the layout effect but the foregoing illustrates the problem. With reference to the factory plan attached the following summarises the current position in the areas marked on the map.

-A. A fully enclosed cutter grinding area, together with a toolroom for the manufacture and repair of jigs and fixtures, plus a tool stores. This is probably a suitable location and the working areas reflect a reasonably disciplined situation. There was an absence of control documentation. The store area

PLAN OF FACTORY

Arnold Hill



could benefit from some reorganisation.

-**B.** This was a mixed bag of activities ranging from, constructing prototypes, crane manufacture to, other fabrications. Confidentiality would suggest prototypes be in a discrete area not mixed with production. Since this is an enclosed area, with the appropriate services, ideal for prototype activity plus any form of test & evaluation. There is sufficient room to layout a completely self contained area for prototype, test and evaluation.

-**C.** Material preparation, shotblast, guillotine, forming, flame cutting, fettling, plus some drum fabrication. In principle the action to contain preparation and forming in one area adjacent to raw material storage area is sound. The question however must be, can the shotblasting facility be reduced or disposed of if the action was taken to store materials under cover. It is suggested that by addressing the layout in this area the positioning of machines could be improved without detracting from 'safe and effective working' the shotblast facility reduced (to process castings/forgings only) and the 'freed' space be made available for vertical steel sheets racks plus section steel racking using the void space, above head height. The space outside the enclosed factory, if not totally but in substantial part, could be freed for disposal.

-**D.** Work-in-Progress storage, cab fabrication, main frame fabrication, finish part stores, tower and jib fabrication, assembly area, large fabrication storage. Again the initial idea must have been that a natural progression from material preparation would be to fabricate. There can be no criticism of this thinking, even to having a W.I.P. store to ensure control of issue for fabrication. The problem is that the

storage areas are not defined. They are interspersed with fabrication and assembly area. This area could be improved by concentrating the manufacturing activity on one side of a central gangway for the length of the area C. If this is not sufficient, cross the gangway and return up the opposite side. This then allows the holding and store areas to continue at the end of this flow and the area can be identified and controlled to better effect.

-E. General machine shop, tool store, gear cutting, W.I.P. stores, gear shaft sub-assembly, gear box sub-assembly, heat treatment. The machine shop has relied on similar machine grouping which is an accepted principle where there is no possibility of applying flow line techniques. The area then continues to the gear box machining, this is, interspersed and further interrupted by storage of raw materials, that is gear blanks, gear cases, pedestal castings, etc. This again could benefit in a progressive flow down the length of the area and planned in such a way that gears requiring a heat treat, and the operations prior to heat treat, should be in close proximity. Examples would be the subassembly areas for bearings to gears then gear assemblies to gear boxes. While the storage areas are better defined they may benefit by some relocation within the area. A principle for consideration for work flow could be a holding area either side of central gangway for material, progressive machining each side of gangway via heat treatment to assembly or subassembly.

-F. Induction Hardening. An investigation is needed to determine the feasibility of bringing the total heat treat facility including the support service together in one area.

-G. Power drum assembly and test. Main Ring Gear drive machining, rework area and storage. This area requires a

complete reorganisation and defined work stations. The impression was that this was an overflow section and not necessarily connected with activities in close proximity.

-H. Large capacity horizontal boring machines. Bogie frame machining, and although not defined, crane main frame machining. Any reorganisation of the shop layout would have to revolve around these machines. Their position is fixed and the disruption and cost to relocate would be disproportionate.

-I. Crane main frame fabrication, bogie frame fabrication and assembly interspersed with stores holding areas. This area would benefit by defining to better effect by some form of separation of the bogie frame and crane main frame manufacture.

-K. Tower and jib fabrication with storage of fabrication items. Not a problem except one of housekeeping.

-L. Bogie Frame Fabrication. This fabrication area split from area 'N' also producing bogie frame fabrication.

-M. Leased space for the manufacture and assembly of refrigerated containers. This are seems to be wrongly sited as it splits domestic (Famabud) manufacturing.

-N. Idler drum and bogie frame fabrication. Refer to 'L' for comments.

-O. Shotblast and Paint. By condensing the other areas of manufacture this could be relocated hence releasing the area for alternative use i.e. leasing. There would however be a need to some disposal of capital assets. There are two paint

chambers not fully commissioned.

b. Efficiency

713. There needs to be an urgent review of available hours matched against required hours. Surplus labour is a problem that has to be identified. The current shop efficiency (Yield) is less then 50% of attended hours. Because of the structure and employment legalisation there will be difficulties in reducing both direct and indirect labour. One of the alternatives already reported is to use the opportunity labour for alternative work. That is, the surplus labour can be used to assist with reorganisation of factory. During discussions with the Production Director and the respective subordinates there were some emphasis laid on the fact that the labour force is flexible within their individual skill band. The maintenance of plant and machinery could be improved by utilizing the appropriate available skills to greater effect.

c. Machine Tool Utilisation

714. With the present workload there is a large surplus of capacity of plant and machinery. This suggests a disposal programme for either trade-in against high technological equipment or to generate some revenue. Because of the present economic climate not only in Poland but further afield it may be prudent to keep the underutilized equipment. Thus, if the plant is taken and stored away from the production area it may ease the problems associated with factory reorganisation. A spot check on three separate occasions suggested an average utilization of 30% during the one shift working. Plant list is attached in Appendix A.

Technical Assessment of tower cranes

a. Supporting structure (chassis, tower)

715. The construction is based on traditional methods and does not take advantage of CAD aids to optimise the stress factors. Steel sections designed for strength without a weight penalty are available, for example T-sections and channel sections. However, Famabud's construction does not make full use of these improvements. Square section tubing is not used and Famabud's alternative is to weld tubing together resulting a 20 % heavier structure.

b. Mechanics

716. The drive train, engine, reduction gear box and brakes are supplied from different manufacturers, and not produced by Famabud. These are generally standard units and not specifically designed for the crane in question. As a result they only approximate to the optimum conditions. Therefore to compensate for this, the total is made larger resulting in a material cost and weight penalty. Lack of high power geared motors, generally over 10 kw, in Poland has forced Famabud to use planetary gears with two motors which complicate construction and make the product more susceptible to breakdowns.

717. Lifting cables produced in Poland have an endurance of 160 kG/mm compared with the West at 200 kG/mm. Therefore to compensate Famabud has increased the diameter of the cable. A number of cable sheaves are used on each crane and are generally 30 % heavier than the competition due to the construction. Competitors use welded sheaves while Famabud use cast sheaves.

c. Electrical equipment

718. To comply with Polish Safety regulations for heat transfer the company has to use thicker wires and larger steering elements with the resultant penalty of dimensions and weight. Control systems are dated in design relying on transmitters and conductors which have been superseded in modern steering units. Employing a synchronous slip sugs motors, dropping resistors are required which complicates the unit.

d. Control system

719. Control system consists of a weight limiter. This works, by measuring the tension of a guide-rope. In the driver's cab information for the operator is by a light system : green, yellow (90-100 % of permissible load); red (100-115% of permissible load) and a sound signal. There is a overload mechanism which freezes the crane movement.

720. Control systems in the West used in cranes, operate by comparing nominal (pre-programmed) values and actual values. Whenever actual values exceed nominal values, an overload warning signal is activated in the cab. The systems also provides a continuous display of suspended loads, height above ground, crane geometry and crane movements.

Production, planning and control

a. Present procedure

721. Formal production planning procedure has effectively ceased. An informal procedure is now in place ensuring that what little is produced is processed effectively.

722. The production planning and control procedures were in place last year. In the past management would agree on a production plan for the next year. On the basis of this plan the production office would prepare detailed hand written

schedules, first on an annual basis and then on a quarterly and montnly basis for the main production departments W1, W2 and W3. The foremen would receive monthly planning schedules for their individual departments.

723. On a daily basis the foreman would contact the distribution office for his department by internal telephone and inform them of his section's actual performance in relation to that planned. The distribution office is in charge of ensuring that the detailed allocation of materials and labour is appropriate and for ensuring an orderly flow of work in progress, for that particular department.

724. The distribution department would transmit their findings to the production office. The foreman's plan would be corrected on a daily basis after consultation with the department manager.

725. Twice a week meetings are held at the production managers office to discuss the problems of the last few days and how best to overcome them.

b. Effectiveness problems

726. Bearing in mind that the formal production planning procedures have now ceased we would conclude that such procedure worked reasonably well. The main areas reducing effectiveness are:

1. There was a lack of accountability. Whilst foreman had to account for themselves and their section verbally there was no system rewarding or penalising individuals apart from the wage bonus system which could be subjective.

2. Production planning was geared towards the yearly plan. This is now inappropriate and in future a major role needs to be given to the sales and marketing department for their input on what needs to be produced.

3. The distribution of this information appears by the distribution department to be an additional tier of reporting. It is suggested that this function be merged with the production department.

727. The company have now changed the system by not entering planned production but confirmed orders. Production planning now requires more skill because these new orders (relatively few at present) need the labour and material elements to be calculated, until these calculations are made correct materials issue cannot be made or production cannot start. Previously when the company was producing standard items every month to an annual plan, labour and material needs could be planned without too much effort.

Inventory control

a. <u>How records are kept</u>

728. The Factory keeps a card index system for accounting for its stock of materials. These card records show for each transaction either how much has been worked into stock including unit purchase price, or the quantities issued, and the balance remaining. Stock is issued when the appropriate form is produced. The card records are similar to those used in the West. In addition the stock records are kept on a computer. The printout, in the form it is in, is not useful and hence not used. The card system tends to be more accurate and is adjusted when errors are discovered. There is no computer system for ordering materials and for executing such

orders.

b. Ordering procedures

729. Stock is ordered by the Supplies Department and based on the plan of production for the following 3 months. When ordering materials, existing values on the card index system is taken into account and orders placed accordingly.

c. Level of inventories carried

730. The factory has no guide lines for the optimum level of stock or of minimum and maximum quantities . As a result a comparison cannot be made between the actual store turnover and the standard. In 1991 because of difficulties with the sales and the limited level of manufacturing,a substantial amount of materials has been excessive or superfluous (approximately 40% of the quantity of materials as at 30.06.1991). Since stock has been held for a long time the historical costs (6.445 mln zl), (USD 644,500) is substantially below their replacement value (19,900 mln zl, USD 2,000.000).Overstocking was a common policy because the supply of materials was uncertain in the past.

d. Inventory costs

731. As a result of the decrease in production, costs of keeping stocks have increased :

- wages of store-keepers, warehouse labourers and their supervisors
- interest on bank credit financing excessive stores

e. Recommendations

732. The organisation of materials control in the Factory can be improved by:

- currently computerising the stock control and recording process,
- this in turn can highlight excessive and superfluous stores

which enable such items to be either used more effectively or disposed,

- situate warehousing closer to production in order to reduce transportation costs,
- sell all excess materials at whatever price can be negotiated.

Raw materials

a. Sources

733. The factory sources foundry materials mainly from companies in southern Poland (Krakow, Katowice, Czestochowa). Drive and electrical materials, sub-assemblies and equipment are purchased throughout Poland. Many of those suppliers are local, but others again are many hundreds of kilometers away in places such as Bielsko-Biala, Cieszyn and Zywiec. More details of the suppliers are given in Appendix A.

b. Cost

734. Raw materials costs are either at West European prices or cheaper. The opening up of the borders has increased competition. In addition because of the downturn in the economy and previous policy of holding large stocks, there is a lot of surplus material available. This effect results in increasing the competition between suppliers. The main disadvantage from being in Szczecin (North Western corner of Poland) is that some suppliers are not able to deliver promptly because of the distances concerned and lack of good roads.

c. Quality

735. Previously Famabud had to accept whatever materials were delivered to them. It was rare for substandard materials to be returned. The situation has changed and the company can

now demand the materials to the required quality standards. Furthermore the rejection of substandard goods is now becoming more common.

d. Availability

736. At present the factory has no difficulties in obtaining supplies. Materials are ordered between one to three months ahead. Sub-assemblies for cranes are ordered from subcontractors some months ahead so that these items can be manufactured within an agreed timetable. Until a year ago there were difficulties in obtaining materials at short lead times, in the right quantity, the right specification and acceptable quality. The situation has now changed. Instead of pressing suppliers to deliver on time they are now contacting Famabud and asking why they are not ordering materials from them. The quality of materials is confirmed by quality certificates or in the course of inspection made by the factory. Defective materials are claimed with the suppliers and the factory does not bear any losses. All deliveries of materials are executed against cash payments or against certified cheques or are paid by remittance within 14 days. The suppliers do not grant credit.

Efficiency of raw material utilisation

737. The cost of raw material is the most important single item of cost in the whole enterprise. In previous periods they amounted to:

7 A

in 1988 - 4.450 million zl. i.e.	62.71% of all costs
in 1989 - 6.444 million zl. i.e.	45.05% - :: -
in 1990 - 36.577 million zl. i.e.	48.25% - :: -
till 30.06.1991-15.950 mill.zl. i.e.	40,42% - :: -
anticipated in 1991-42.156 mill.zl. i.e.	47,12% - :: -

738. In order to determine the selling price for each item in 1991 the Factory has calculated the cost of raw materials to be:
- crane ZB-75/100 - 515.034 thou.zl. i.e. 53,78%
bogie frame 26TNa - 15.431 thou.zl. i.e. 39,34%
bogie frame 3 TN-61 - 19.773 thou.zl. i.e. 38,56%

739. Production consumes a high level of raw materials. In 1988 when the Factory had many orders and was manufacturing near capacity, materials used as a percentage of all costs was 62,7%. In 1990 the output of the Factory dramatically decreased, and as a result fixed costs rose in relation to total costs, and therefore the proportion of cost of materials reduced. The consumption of materials, also reduced that year , because the factory decreased the input of foundry materials for manufacture of the ZB-75/100 crane from 32.256 kgs to 29.791 kgs, i.e. a saving of 7,4% in weight.

740. The level of waste in a production has been at a consistently high level. As illustrated in the subsequent photographs.

741. The losses suffered can be calculated as follows for each kilogram:
- at the average price of foundry materials 4.000zl/kg
- at the average price of scrap 945 zl/kg
- loss on materials 3.055 zl/kg

742. Therefore for the above products the loss amount to:

- crane ZB-75/100 - 7.186 kgs x 3.055 zl = 21.953.230 zl(USD 2.200)
- bogie 3TN-61 519 kgs x 3.055 zl = 1.585.545 zl (USD 159)
- bogie 26TNa 483 kgs x 3.055 zl = 1.475.565 zl (USD 148)

CONSUMPTION OF FOUNDRY MATERIALS

Specification	Crane ZB-75/100			bogie 3TNb/1 bogie26TN		
	1988	1989	1990	until 05.91	from 04.90	until 05.91
Foundry materials net consumpt. (kgs)	25.301	22.605	22.605	22.605	1.148	2.420
gross " "	32.256	29.791	29.791	29.791	1.667	2.853
Useful wastage "	6.955	7.186	7.186	7.186	519	433
Proportion of wastages in gross consumpt. (%)	22	24	24	24	31	20

743. The wastage level is high and can be reduced by better material ordering and improved product design which takes into account reduction of scrap. In addition more stringent quality control would also have an effect. Such a control would reject substandard deliveries and ensure that manufacture was to specification.

Quality control procedures in use and their adequacy

744. The quality inspection procedure as documented in Famabud can be summarised as follows:

1. State supervision by the Institute of Technical Inspection,
2. State supervision by "Polcargo",
3. The quality inspection service in the factory.

1. Institute of Technical Inspection has the following functions:

- approves construction documentation for the crane for production

- inspects at random the production process,
- inspects at random the final product.

This state organisation is more involved with the health and safety aspect of the factory and the product and its checks act more as a safety net rather then a viable system for maintaining quality.

2. "Polcargo"inspects products which are to be exported. As with the Institute for Technical Inspection such an organisation cannot be realised to help maintain day today quality procedures.

3. The quality inspection service in the Factory is maintained based upon the instructions provided by the production and design engineers and in theory should ensure:
   - raw materials are inspected when received ,
   - inspections are made at preordained stages in production.
   - comprehensive quality checks are made of final product.

The quality inspection laboratory and individual inspection should follow procedures written by the Institute of Technical Inspection (IDT).

745. In reality it could be seen that the quality inspection system was based upon passing all defects which would not directly relate to the breakdown of the product or affect the product performance.To illustrate this point the percentage of faulty production as stated by the Director of Quality Inspection Department is only 0,02% to 0,12%. But we observed during our frequent tours of the factory that there were many items that were marked for reworking. The resultant reworked items were probably not included in the defect statistic.

746. Such an attitude towards quality control has resulted in a corporate culture which is happy to supply goods as long as they work to fulfill the minimum specifications. Such a long term attitude has resulted in:

- lack of precision and diligence by the shopfloor workers, and results in design tolerances not being observed. In addition the overall workshop tolerance has also being considered unimportant.
- lack of care in handling finished goods, for example observing rope drums being left on concrete floor which results in the damage of the grooves guiding the rope
- lack of care in handling work in progress needing special care when taken from storage for assembly. For example bearings stored on the work stands without any protection against dust.
- lack of any criteria in maintaining the aesthetic quality of workmanship, for example welding and painting.
- frequent cases of technological parameters not being observed.
- careless transportation of items within the factory .
- lack of tidiness and cleanness on the work stand which would help precision work.
- liberal attitude in accepting sub-standard materials and assemblies from suppliers as a habit from the past when it was difficult to obtain materials in Poland.

747. The change of the current situation can only take place through fundamental change of the way the management and workers view the question of quality, and to this end the following areas should be considered:

1. The entire system of the quality inspection should be reviewed. To begin with the appropriate documentation should be prepared for each product, for example a "task

book" can be prepared which would include in a comprehensive manual description of all the characteristics of the products. The description should include all requirements of the customer as well as the organisation, and an outline of the specifications concerning production, delivery, preparation of the work processes, packaging, storing, assembly, transportation of the finished product, and service manual. The task book should be also used for all developmental work and on the introduction of changes. Such a book should be expanded upon by a team made up of employees from all appropriate sections of the organisation, under supervision of the Department of Construction Engineering.

2. Repeated thorough training of employees of the technical inspection department and of all other departments. Workers must be aware on each production stage of how the production quality has built up.

3. The workers in the Production Design Department should be specifically borne in mind since faults as a rule, originate in this area and any potential faults envisages are eliminated. The possibility of the appearance of a fault during the production process and the assembly should then be examined. This should be carried out during the Production Planning Stage and always before production is started. After such product and manufacturing design defects have been isolated, the remaining defects should only be due to the product process itself.

4. A daily spoilage report should be introduced to ensure a formal and speedy response in reducing spoilage.

5. The system of quality inspection should make it possible

to name the party responsible for the defects.

6. Employees in the Quality Inspection Department should be penalised if claims against product guaranties and warranties exceed a preset limit. This limit should also include claims concerning faulty sub-assemblies and the equipment delivered by the co-operating parties.

7. Similar financial penalties should also be made against the management or the appropriate section which has produced the faulty part.

8. The appropriate quality of the raw materials and sub-assemblies should be demanded from the suppliers and co-operating parties. The level of services provided by them should be reviewed periodically. In addition market studies should be carried out disclosing the best suppliers in price and quality.

Technological and R & D capability within the enterprise and their adequacy

748. The company has not designed its products. They were designed by a Polish project office, or institution Potain (under licence) or the customer. The main objective of the design office is to make changes or adaptations to existing product lines. Therefore there is no real R & D capability.

749. The company has the capability of using the latest crane and bogie technology in the manufacturing process. An example is that they could manufacture taller cranes, but do not have the designs and specifications to do so. Any structural weakness in the product is remedied by adding more steel rather than seeing how the design can be altered. Calculations appear minimal.

750. Taking the prototype crane as an example, its design was received 3 years ago from Zremb project office (the design office for the Zremb group of factories). The prototype was built and then tested. To date it has been strengthened several times resulting from visible weaknesses found during lifting tests. Each strengthening adds more steel and hence weight. Angled steel has been replaced by box sections (by welding angular sections together) or tubular sections.

751. We therefore recommend that the chief designer is sent to NEI - Clarke Chapman (a UK Subsidiary of Rolls Royce) which manufactures marine cranes, bogies etc. to learn CAD techniques and the latest crane technology. It is common in such companies to design a crane, test it by using calculations and computer stress and failure models (G T Strudel software package). The result being that the physical testing becomes a formality rather than an important part of design process. Famabud designers should appreciate this.

752. Until the company has the financial resources it is unlikely that any R & D can be carried out. In addition it needs young staff that are capable of such assignment including product development. This means that Famabud are incapable of designing the next generation of cranes. Until there is this capability they should produce under licence or to drawings given to them.

Work methods

a Assessment of present work methods

753. The company is in deep recession and therefore its workforce are not working under normal conditions. The result of this can be seen by increase in absenteeism and constant slippage in the production schedules. Any analysis of work methods will be negative and tell them what they already know. A proper assessment of work methods can only be carried when there are substantial orders for the company to produce and hence a future for the workforce.

b Ergonomic principles

754. Workplaces are not prepared according to ergonomic principle system. Working conditions are difficult and dangerous and the number of accidents has decreased substantially since 1988 as the table below shows. However this is probably due to the reduction of conditions that were available for accidents.

7 B ACCIDENTS

YEAR	NUMBER OF EMPLOYEES	NR OF ACCIDENTS	INCL. HARD	ABSENCE IN DAYS	AR
1988	997	80	17	1960	6,69
1989	891	34	11	1239	3,18
1990	623	18	6	623	2,41
8mths 1991	506	10	3		1,65

$$AR = \frac{\text{NR OF ACCIDENTS}}{\text{NR OF EMPLOYEES x NR OF MONTHS}} \times 1000$$

755. Using accidents to measure ergonomics is not totally satisfactory. Other factors should be considered such like the level of equipment and the arrangement of production flow. As stated earlier the level of equipment available to assist the shopfloor worker is very high. Not many western firms have this level of equipment available to assist in production and hence reduce the physical work and irritations. This equipment includes a small hoist by most machines and assembly areas, plenty of trolleys for transport, extractors for welding fumes etc.

Work environment: lighting, heating, ventilation, disorder

a Lighting

756. The main Factory at Cukrowa str. in Szczecin has a large number of windows but these are dirty and reduce the effectiveness of daylight. There are two systems of artificial lighting:

- top lighting with sodium lamps - again there effectiveness is limited by dirt.
- spot-lighting on work-places.

757. In general there is not enough light in the hall but it is possible to improve it easy by cleaning window and roof light panels and sodium lamps.

b Heating

758. There are 3 systems of heating but heating is not effective in cold winters. We have carried out a study of the heating

system and the long term remedies (see section 10.15 to 10.27). Since the factory is not being used to capacity a lot of heat is wasted on areas where there is no activity.

c Ventilation

759. There is exhaust ventilation in the factory and in some places such as in the prototype shop there is a spot system. In department W3 (mechanical) ventilation practically does not exist and air is badly polluted. Ventilation is only a problem in the cold winter months when the factory doors and shutters are closed. In the summer months, due to the high roof, ventilation in general is not a problem.

d Disorder

760. The work-place is generally not kept in order. There are a large number of unnecessary objects left on the factory floor. We pointed this out to management and they have instigated a general clean up. In addition there is work in progress from halted crane production lying on the factory floor. If this is cleared out there will be space for other production or for renting. There will also be less items to cause accidents.

Workers salaries & incentives, piece work rates, bonuses

761. Workers wages are based on agreement signed on 30 August 1985, which has been amended subsequently on a number occasions.

a Basic wages

762. Every shopfloor (blue collar) worker is paid an hourly rate depending on his employment category which depends on his profession, experience and additional qualifications. These categories are shown below. For example in August 1991 - the lowest category was II which was paid to charwomen and the highest was XV which was paid to welders.

7 C SCHEDULE OF HOUR'S WAGES RATES FOR LABOURERS

Category	Hours's wages rates (zl/h) from - to
I	3000 - 3200
II	3201 - 3400
III	3401 - 3600
IV	3601 - 3800
V	3801 - 4100
VI	4101 - 4400
VII	4401 - 4700
VIII	4701 - 5000
IX	5001 - 5300
X	5301 - 5600
XI	5601 - 5900
XII	5901 - 6500
XIII	6501 - 7200
XIV	7201 - 8000
XV	8001 - 9000
XVI	9001 -10000
XVII	10001 -11000
XVIII	11001 -12000

763. White collar employees are paid monthly, salary levels are dependant on their Employment Category. These categories and salary rates are shown below. For example in August 1991 the lowest category was III for young clerk, who was paid 850.000 zls whilst the managing director was on category XIV and paid 2.500.000 zls.

7 D SCHEDULE OF MONTH'S SALARY FOR WHITE COLLAR STAFF

Category	Month's wages rate (zl/month) from - to
I	550 000 - 650 000
II	651 000 - 750 000
III	751 000 - 850 000
IV	851 000 - 950 000
V	951 000 - 1 050 000
VI	1 051 000 - 1 150 000
VII	1 151 000 - 1 250 000
VIII	1 251 000 - 1 350 000
IX	1 351 000 - 1 450 000
X	1 451 000 - 1 550 000
XI	1 551 000 - 1 650 000
XII	1 651 000 - 1 800 000
XIII	1 801 000 - 2 100 000
XIV	2 101 000 - 2 500 000

b Bonuses

764. A bonus of the 30% of the basic wage is paid if the workers task is carried out to the supervisors satisfaction. For clerical staff the bonus is 30%. A second bonus is payable for administration staff and managers of up to 20% basic wages, and 50% for managing director. Additionally managers received extra-pay depending on position.

7 E BONUSES FOR WHITE COLLAR STAFF

Position	Extra-pay (% of the lowest official wages)
Deputy director	100 - 300%
Main specialist and chiefs(accountant, technical)	90 - 270%
Department manager, deputy chief accountant, deputy main specialist	80 - 240%
Section manager, laboratory manager, deputy manager of production dep.	70 - 210%
Shift manager, deputy section manager, foreman	60 - 180%
Switching station, store, lending shop managers,	50 - 150%
Hotel, holiday centres managers	40 - 120%

c Overtime hours

765. Additional salary for overtime work is a percent of basic wages and is calculated as follows :

7 F OVERTIME CALCULATION

50% - first two hours
100% - thereafter
100% - overtime hours at night and work on Sundays, and public holidays
150% - work in New Year, Easter and Christmas.

d Shift bonus

766. Workers employed in shift work system received an additional bonus for work into second and third shifts. Workers at night received 20% bonus.

10% - second shift
30% - third shift

e Bonus for work in harmful and/or dangerous conditions

767. There are 3 categories of harmful or dangerous work and connected with them additional bonuses:

7 G HAZARDOUS WORK BONUS

I group	14%	of double the official lowest wage rate
II -"-	10%	-"-
III -"-	7%	-"-

768. The Managing Director will agree the category of the hazardous conditions with Industrial Safety Specialist. In addition workers receive a bonus of 10% of double the official lowest wage for working at heights over 5m above ground. This increased to 15% if the height is over 10 m.

f. Bonus for additional skills

769. In addition skills bonus is payable to welders. Bonuses in August 1991 range from 300 to 800 zls per hour.

g Bonus for period of service

770. This bonus depends on length of service at both FAMABUD and at previous firms. The percentage bonus is equal to the total number of years the employee has worked and commences when 5 years service has been completed. Therefore after years a 5% monthly bonus is payable. The bonus is computed on his basic wage for the employment within Famabud and at the lowest grade of worker for the time employed by other firms.

h 'Jubilee' remuneration

771. This is a one off bonus based upon total years service and is calculated as shown below. The basis of calculation is similar to that of the previous section.

7 H JUBILEE REMUNERATION

150%	of monthly basic	after 15 years	of service
200%	- " -	20	- " -
300%	- " -	25	- " -
400%	- " -	30	- " -
500%	- " -	35	- " -
600%	- " -	40	- " -
700%	- " -	45	- " -
800%	- " -	50	- " -

i 'Coal ration'

772. A monthly amount is paid to employees to which is equivalent to the cost of 1.500 kg of coal for a single person and 2.500 kg of coal for a married worker a year.

j Director's fund

773. This is a discretionary fund which is at Managing Director's disposal and consists of up to 3% of all wages.

k Retirement

774. If a worker has worked in excess of 10 years before retiring, he received the following on retirement or dismissal.

7 I RETIREMENT PAYMENT

10 years worktime	-	100% of basic monthly salary
15	-	150%
20	-	200%
25	-	300%
30	-	400%
35	-	500%
40	-	600%
45	-	700%
50	-	800%

l Group dismissal

775. Group dismissal which is in effect a redundancy results in an additional salary of :-

7 J REDUNDANCY

Less than 10 years worktime	-	1 x basic monthly wage
More than 10 years worktime	-	3 x basic monthly wage

m Other form of remuneration

776. Additional remuneration is paid in respect of:-

- additional payments for holidays
- clothing allowance
- cheap loans
- cheap meals in the factory canteen
- low payment for accommodation in the factory hotel:
  - . 120,000zl. per month (a single room)
  - . 300,000zl. per month (a double room)

n Wages and salaries in Famabud in 1991

777. The average wages and salaries in Famabud is 1991 and their components were:

7 K AVERAGE WAGES AND SALARIES 1991

AVERAGE WAGES	31 JAN	30 APR	31 JUL
AVERAGE IN FAMABUD	1,876,976	1,813,273	2,096,344
- ADMINIST.& MANAG.	1,946,428	1,770,956	2,197,699
- INDIRECT PROD.	1,736,048	1,728,699	1,919,930
- SERVICE & NON-IND.	1,342,815	1,734,207	1,820,776
- DIRECT PRODUCTION	2,024,324	1,991,374	2,241,130

7 L COMPONENTS OF WAGES

(AVERAGE IN THE FACTORY)

August 1991

	zl
1.BASIC WAGES AND BONUS	1,446,980
2.OVERTIME HOURS	85,221
3.COAL RATION	98,868
4.PERIOD OF SERVICE	215,099
5.HOLIDAY EQUIVALENT	3,622
6.DIRECTOR'S FUND	1,708
7.JUBILEE REMUNERATION	141,286
8.RETIREMENT DISMISSAL	-
9.GROUP DISMISSAL	34,768
TOTAL	2,027,552

o Conclusions

778. The wage system is a cumbersome one and needs six full time staff to administer. The bonus system is based heavily on subjective assessments and not on results achieved. A simple and more flexible system needs to be devised in the medium term, rewarding employees achieving clear y defined pre-set targets. This system if it was computerized would save a lot

of time and reduce the number of staff required to calculate monthly wages and salaries.

Capacity utilisation, labour productivity, and analysis on sales/production plan for the period to 31.12.1991.

a Capacity Utilisation

779. The factory's capacity is seriously underutilised. Taking into account the sales to date for 1991 together with the production plan for the rest of the year and comparing this with sales/production in 1988 the results below are obtained. Taking into account the proposed introduction of the ZB-20 and the level of spares production, the capacity utilisation in comparison with 1988 has reduced to approximately 20%

7 M 1991 AND 1988 PRODUCTION IN UNITS

	1991 units	1988 units	percentage capacity decrease
crane ZE 75/100	22	108	80%
crane ZE 20	12	-	N/A
crane ZE-120	5	808	99%
bogie frames	524	5539	91%

b Labour productivity

780. A study was undertaken to establish the direct labour utilisation for the balance of 1991 (see paragraphs 782 to 783). Based upon the production plan the study calculated labour efficiency to be 42%. A typical labour efficiency rate in the west would be approximately 75%. In addition by combining administration (138 staff) ,plus indirect workers (211 staff) the result is as follows:

7 N NON PRODUCTION STAFF TO DIRECT PRODUCTIVE STAFF

349 non productive staff (indirect)
180 productive staff (direct)
1.94:1 in favour of non- productive

781. If Famabud was situated in western Europe this ratio would be reversed, implying a reduction in non productive staff by approximately 260. However it must be noted that employment costs in Poland are significantly lower therefore the effect is not serious. Certainly with the information reported to date the Famabud organisation should be reduced in terms of both direct and indirect labour. The question must be however, by how much? In order to present a more balanced appraisal, the initial sales/production requirements for 1992-1995 have been interpreted and converted on a pro-rata basis using 1991 information. An approximation using this method is not ideal, but it does present a comparison.

c Sales production plan (see Appendix G)

782. Subject to the accuracy of the sales/production forecast the initial conclusion would be to retrain the present direct manning levels and investigate the labour market to meet the upturn in demand. This situation would also temper any decision on planned disposal of assets. In fact it would be appropriate to construct a capital expenditure plan to secure manufacturing efficiency.

783. This argument is questionable when the move to a market economy accelerates and social demands increase the cost of both direct and indirect labour. Therefore it is proposed that labour costs are contained even though the immediate effect is relatively insignificant when compared with other costs of sales. It is essential, in an international context, that the adages of quality, price and delivery is paramount

to success, this is why the labour cost advantage must be maintained.

784. Using the data in the sales/production plan for the six months to 31 December 1991 we recalculated the labour hours required for the reduced production and concluded that the factory efficiency will be 42%. The calculation was based on present employment levels.

7 0 REQUIRED LABOUR HOURS FOR PRODUCTION

1 JULY - 31 DECEMBER

1 July - 31 December inclusive (given)	97. 271
	=======
Total production hours not required after considering W. I. P.	
6 - ZB75 - 100 cranes 75% complete	9. 537
3 - ZB120 - 200 cranes 60% complete	8. 521
48 - 26TNa. bogie frames 70%complete	4. 603
Spares & miscellaneous 40% complete	433
	-------
	23. 094
	=======
New production hours required	74. 177
	=======

7 F TOTAL DIRECT HOURS AVAILABLE

1 JULY - 31 DECEMBER

Total hours available 1 July - 31 December
132 days x 150 direct workers = 23 760 man days
considering holidays
5 statutory days
10 personal days
117 days x 150 direct workers = 21 060 man days
average working day 8.4 hours
21 060 x 8.4 = 176 904 man hours

7 R LABOUR EFFICIENCY TABLE

available hours at 100% yield	176,904
available hours at 80% yield	141,523
available hours at 75% yield	132,678
available hours at 70% yield	123,832
Factory yield (efficiency) to match produced hours required	
42%	74,299

785. Therefore the first conclusion is that by maintaining factory yield (efficiency) at 42% with the present labour force the new production hours required could be achieved.

786. By taking the initial sales plan prediction for 1992 to 1995 and their standard hours of production

7 S INITIAL SALES PLAN PREDICTION 1992 -1995
CONVERTED TO PRODUCED HOURS ON PRO RATA BASIC COMPARED WITH 1991 SALES PLAN

	1992		1993		1994		1995	
	QTY	Hours	QTY	Hours	QTY	Hours	QTY	Hours
Cranes	29	44917	41	62894	89	132211	89	132211
Bogie frames	1030	164900	1250	200500	1250	200500	1250	200500
Nivar HaCon Windhoff Retech Vol		127500		161925		215475		242250
Total hours		337,317		425,319		548,186		524,961

7 T DIRECT WORKERS REQUIRED TO FULFILL 7FF AT VARIOUS LEVELS OF EFFICIENCY

Direct labour @ efficiency %	1992 hours	1993 hours	1994 hours	1995 hours
232 @ 75%	337,629			
292 @ 75%		424,947		
377 @ 75%			548,648	
396 @ 75%				576,298
249 @ 70%	338,211			
314 @ 70%		426,499		
404 @ 70%			548,745	
424 @ 70%				575,910

787. The second conclusion is that by reducing direct manning and achieving a higher yield (efficiency) the net production hours could be reached. That is, reduce present direct manning by 75 to 105 people. Therefore available direct labour hours at 100% yield 103,194 hours and available hours at 72% yield 74,299 hours. The yield (efficiency) of a mixed economy manufacturing company should be approximately 75% (typical in UK). This would ensure a satisfactory recovery of overheads, when comparing this to a West European economy and structure.

788. The following table shows Famabud's 6 month labour plan to December 1991. This is included here because it can be used to check against actuals. It should be stated that at the time of writing the ZB 20, and ZB 75-100 and ZB 120 - 200 have not achieved their sales targets. In fact no cranes were in production in the last 6 months of 1991. The ZB 20 at the time of writing has not achieved its design specifications.

JULY - DECEMBER SALES\PRODUCTION PLAN

production	desc.	July	Aug	Sept	Oct	Nov	Dec	Total
detail ZB20	mobil				4	4	4	12
labour(hrs)1055	crane				4220	4220	4220	12660
material(zl)								
detail ZB75-100	tower	3	3	3	3	3	3	18
labour(hrs)2119,3	crane	6358	6358	6358	6358	6358	6358	38146
material(zl)								
detail ZBW75-100	tower							
labour (hrs)2551	crane							
material(zl)								
detail ZB120-200	tower	1	1	1	1	1		5
labour(hrs) 4734	crane	4734	4734	4734	4734	4734		23670
material								
detail 26TNa	bogie	48	48	47				143
labour(hrs) 137	frame	6576	6576	6439				19591
material(zl)								
detail 3TNb	bogie	2	1	1				4
labour(hrs)	frame	352	176	176				704
material(zl)								
detail spares	tower	20%			20%			40%
labour(hrs) 176	crane	523			523			1046
material(zl)	spares							
detail spares	bogie	35%			35%			70%
labour(hrs)	frames	55			55			110
material(zl)	spares							
TOTAL HOURS		18598	17844	17707	15890	15312	10578	95927

Part No. Depreciation		July	Aug	Sept	Oct	Nov	Dec	Total
Total hours brought forward		18598	17844	17707	15890	15312	10578	95927
detail Liebherr	drums							
labour(hrs)								
material(zl)								
detail Nivar	drums				100		100	200
labour(hrs)	&				45		45	90
material(zl)	reels							
detail	davits							
labour(hrs)								
material(zl)								
detail Sweden	gear							
labour(hrs)	wheels							
material(zl)								
detail HaCon	boat				3	3		6
labour(hrs)	trailor				420	420		840
material(zl)								
detail RFN	shredder	1	1		4	4	2	14
labour(hrs)		22	22		88	88	44	264
material(zl)								
detail Electrim	combust-							
labour(hrs)	ion gas							
material(zl)	control							
detail Euclid	bodies				10	10	5	25
labour(hrs)					60	60	30	150
material(zl)								
TOTAL REQ.		18620	17866	17752	16458	15925	10652	97271

d Commentary on unit cost of crane production

789. The most popular selling crane in the past has been the ZB 75/100. Therefore a detailed commentary has been prepared on this product (see Appendix L). Calculation on the cost or producing this crane has been made in three ways.

1. An estimate of costs in accordance with the factory's costing calculation prepared on 15.5.91.

2. Actual calculation of cost following the fulfillment of a production order (no.1/20/44) for which cranes will manufactured.

3. A calculation estimating the cost of producing 160 units.

790. It can be seen that the factory's estimated cost of production and our own give similar results, as expected, and are as follows:-

7 U PRODUCTION COSTING SUMMARY

	factory costing 15.5.91	our calculations
	000's zl	000's zl
Variable costs	614 426	567 987
Fixed costs	340 230	233 564
Total costs	957 656	801 556
Selling price	1 280 000	1 280 000
Contribution to overheads	662 574	712 013
Contribution to overheads as a percentage of selling price	51.7%	55.6%

791. The actual result based on the production of 9 units shows variable cost at only 219.800.000 zl with total costs at 714.451.000 zl, with a selling price of 1.280.000 zl. This gives contribution to overheads of 1.060.190.000 zl or 83% of the selling price. This is due to a hidden profit on historic cost of aged stock of raw materials being realized. With the impact of inflation on the actual results, these cannot be relied upon to give an accurate indication of the true unit cost of production. The comparison of the 3 calculations is shown in Appendix I.

Improvement Suggestions

792. We suggest the following improvements should be made in order to reduce costs:

1. Reducing consumption of foundry materials and reducing volume of waste of foundry materials (by ordering exact sizes requiring less machining). This will allow a saving in costs of materials. Moreover it is recommended to make some technical improvements in order to reduce the weight of the products, and to increase their strength. The consumption of foundry materials should be reduced by at least 10% on a unit of the product.

2. Reducing costs of thermal power heating by relocating heating installations in production areas and then turning down the level of heating.

3. Reducing labour costs by increasing efficiency of work. for example since at present the labour consumption for manufacturing 1 crane ZB-75/100 surpasses 2.550 hrs. New work practices, technology and machines fittings should be introduced in order to eliminate superfluous operations. The time of manufacture of a crane ZB-75/100 should be shortened by 10-15%.

4. Improving warehouse administration. Materials should be stored in production spaces near the preliminary processing. It will allow to eliminate some transfers from the materials yard to the production hall, thus eliminating needless handling. An example of material handling is firstly using a crane in the materials yard for loading onto a truck, then transporting by truck to the hall, unloading materials in the hall. The costs of internal transport related to production departments in the first half of the year 1991 reached over 380 mln zl, annually 800 mln zl. Together with costs of employed cranes and loading labour, these costs in a year could reach 1.500 mln zl and are quite unnecessary.

5. Improving machine and installation repairs and maintenance policy. Machines tend to be repaired when they break down A regular maintenance policy is not adhered to. The machines should undergo regular inspection and maintenance. The costs associated with the break-down of machines and installations would then be reduced. At the same time this will increase efficiency of the production departments. The cost of the maintenance departments is estimated to be 9,000 mln zl (1 mln USD) in 1991.

6. Improving the system of management and organisation of the factory's administration. In the first half of the year 1991 the wages of the Management together with employers costs (tax on wages and Social Insurance Rate) amounted to over 1.635 mln zl, and wages relating to administration were 1.511 mln zl, totalling 3.146 mln zl, i.e. 33% of the total wage cost. There should be a computer system introduced for personnel wages, materials supply, accounting, etc, in order to eliminate about 60% of the administration operations. It will allow a saving annually over 2.000 mln zl (200,000 USD) wage costs.

7. The welfare and social services should be privatised. The costs of social services in the first half of the year 1991 charged to the Factory's overhead amounted to 214 mln zl. This would reduce direct costs of social services and also overheads connected with administration of such facilities (hotel, canteen . The factory traditionally bears the costs of administration connected with weifare services rendered to personnel. As stated in other parts of the report holiday and recreational centres are financed from the factory's social welfare fund.

System of cost allocation in the SFMB "FAMABUD"

793. Costs in Famabud are allocated as follows:

1. The direct costs of consumption of materials, machine processing, production wages are directly allocated to production orders.

2. Costs of depreciation , power, transport services, repair services are allocated to the relevant production departmental costs.

794. The other costs related to auxiliary departments, insurance, management and administration is allocated to the relevant department. Costs of taxes, bank service deductions for welfare and housing funds, non-material services, assessments and surveys, security etc. are allocated to overheads. When calculating prices and allocating real costs, the costs of other departments are allocated to costs of production departments and in a part to overheads. Departmental costs (of production departments) are allocated to particular orders by using an average percentage index in relation to direct labour costs. The index of these costs is very high and at 30.06.91 amounted to 786,62%. This index should be approximately 300-400% assuming regular functioning of the factory and full employment of its productive resources.

795. Overheads calculations are made by percentage allocation in relation to manufacture costs. These costs are very high and on the 30.06.1991 amounted to 28.1% of total costs. These costs should be 10-13% in relation to the cost of manufacture, if the efficiency is improved and the actual productivity of the factory increased. The method of allocating costs and calculation is in accordance with the principles set by the Minister of Finance concerning calculation of prices of products and services and costs allocations.

8. FUNDAMENTAL COMPETITIVE ANALYSIS

Size & Nature of the Markets (domestic & exports)

a. Crane domestic

801. In Poland the lifespan of a crane is considered to be approximately 25 years. Calculations estimate that the total number of cranes still in use in the domestic market is approximately 4.000. Corsidering the size of Poland which has about 3.000 towns and large villages the requirement for 4.000 tower cranes is limited. This can be summarised as follows:

8 A. CRANES IN POLAND

Cranes produced by ZREMB-Famabud	UNITS
Between 1966 & 1991 (25 years)	4771
Less Exported	(840)
Add cranes imported	500
	4431
Less 10% scrapped	443
Total cranes capable of being in use	3988

802. The Famabud range of cranes have been designed mainly to satisfy the need of constructing large panel apartments blocks in Poland. It is anticipated such large panel (pre cast sections) construction in Poland will probably reach a level of eighty to eighty five thousand room equivalent in 1991. This compares with an average of two hundred thousand room equivalent per annum in the late 1970's. Due to the changing social climate this downward trend will continue and is supported by a Government decision to reduce the budget for apartment buildings and concentrate on low rise apartments and houses.

803. For low rise buildings alternative lifting methods can be used. These include an industrial lift attached to the wall of the building and mobile cranes which are easier to manoeuvre and have a greater lifting capacity. This means not only has Famabud's traditional market changed, but now it will have competition from other sources within Poland, ex COMECON countries and Western Europe.

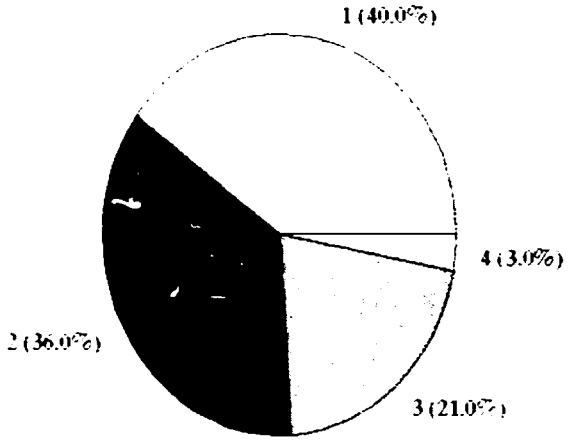
804. Industrial development directed by central planning and not market forces has caused the formation of oversized industrial plants. The present difficult financial position for the majority will affect future investment particularly in buildings. In addition there are many underutilised units for hire in a most areas of the country.

805. In the now defunct centrally planned economy the emphasis for most enterprises was to maximise the amount of money requested from central government. For building contractors to sell cranes that were surplus to requirements would have the effect of reducing the eventual sums received. Therefore once such enterprises were exposed to a market economy such 'surplus' cranes then found themselves onto the market. This is reiterated by the numerous advertisements offering such plant for sale or hire. In many such advertisements the price of a crane, only a few years old, can be less than one fifth of Famabud's list price.

806. In addition West European firms are offering to sale cranes under a finance leasing agreement by utilizing their own banking facilities. However such an alternative is not open to Famabud due to the prohibitive rate of interest in Poland and the difficult banking conditions.

EUROPEAN CRANE PRODUCTION 1990

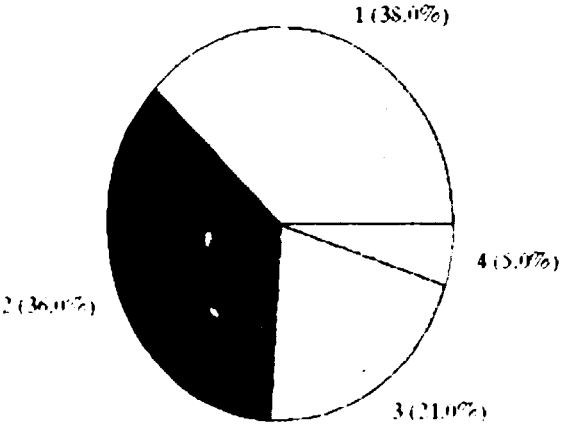
Total value $ 2,780 mln



1.Mobile Crane
2.Tower Crane
3.Knuckle Booms
4.Lattica Boom

EUROPEAN CRANE MARKET 1990

Total value $ 2,780 mln



1.Mobile Crane
2.Tower Cranes
3.Knuckle Booms
4.Lattice Boom

Source: ABH Partnership

807. Therefore the domestic demand for cranes like those produced by ZREMB-FAMABUD is extremely weak. This conclusion is confirmed by response to questionnaires issued by FAMABUD in 1990. In March 1990 the company sent offers of sale to a wide range of former customers and in November of the same year to 229 current users of building cranes. In addition sale offers were sent to 65 new companies. Eventually this resulted in 4 cranes being sold. Assuming the industry improves in the next few years as a result of an increased demand for domestic & commercial building, closer contacts with the West will result in companies purchasing equipment incorporating the latest technology.

808. From the above it can be concluded that in the Polish market place Famabud will no longer have a monopolistic role and will have to compete not only with other tower crane manufactures but also with other firms offering different types of lifting devices. In addition it is likely that most new large development in Poland (such as office and shopping complexes) will be project managed by Western firms. These Western firms will tend to use their own cranes. There is also evidence that Polish contractors that have traditionally worked on construction projects outside of Poland prefer not to use Famabud cranes.

b. Crane export

809. Total value of cranes sold to European users is estimated at nearly USD 2.800m in 1990, an increase of almost 15% over 1989. In value terms mobile cranes marginally outsold tower cranes although twice as many tower cranes as mobiles were sold.

810. There is every reason to believe that the market will continue to expand over the long term. The future for

self-erecting tower cranes - Europe's second most popular variety - looks bright in the long term, especially in eastern countries. Aided by innovative new product development, the larger tower cranes now dominate inner city development and major construction projects throughout Europe. This has been at the expense of the mobile crane. They are (mobile cranes) now virtually dependant on the crane rental market's shorter term and heavy lifting operations.

811. Famabud's dated design and the failure to comply with international standards limits size of the potential foreign market to other Eastern Block and Third World markets. However with many of these areas also undergoing economic structure changes short term prospects in this direction is also limited.

812. It is difficult to compare prices with competitors as specification and the level of technology differ. However after evaluating similar products made by such companies as Potain, Liebherr, Comansa, Rotain, it could be concluded that cranes similar to those produced in western european countries are some 30 % - 50 % more expensive as compared to the ZB-75 and 50 % - 80 % as compared with the ZB-120. Prices of 5 competitors are shown below in table 8 B.

813. Famabud's existing cranes may be able to find a market place in the former COMECON countries as their economies improve. Their present cranes even if they would comply with international standards are unlikely to be bought by Western companies with one exception. The exception is that Famabud at present can only compete on price. It was estimated that to compensate for all the disadvantages in a Famabud crane, the selling price would need to be at least 50% of the Western cranes.

COMPETITORS CRANE PRICES

Type of crane	Famabud Poland	Potain France	Peimer Germany	Liebherr Germany	Kroll Giant Crane Danmark	Record – Potain England
Self–erecting						
Type:	ZB–20	825	SMK 201	20 K		GMR 321 C
Max. load	2t	1110 kG	2t			2t
Height x Radius:	16m x 16m	25m x 25m	20m x 17m	24m x 20/27,5m		20m x 20m
Price:		364 300 FF	81 600 DM	94 980 DM		534 309 FF
Price in zl.:	380 mln	706 mln zl.	540 mln zl	628 mln zl		1 036 mln zl
Type:	ZB 75/100	E10.14C	SK 56		K –68	F15/15C
Max. load		6t	5t		6,5t	6t
Height x Radius:		30m x 30m	30m x 30,7m		36m x 32m	30m x 32m
Price:		986 920 FF	205 000 DM		1 059 mln DKK	1159 mln FF
Price in zl.:	1150 mln	1 914 mln	1 357 mln zl		1 823 mln zl	2 327 mln zl
Type:	ZB–120/200	G25.15C	SK 126	90 EC/120	K–160	G25/15G
Max. load	10t		8t	6t	10t	10t
Height x Radius:	40m x 51/78m	40m x 40/51,6m	40,4m x 70m	50m x 65,7m	42m x 70m	40m x 71,8m
Price:		2 001 370 FF	464 000 DM	469 980 DM	3 114 mln DKK	2 674 568 FF
Price in zl.:	1750 mln	3 882 mln zl	3 071 mln zl	3 111 mln zl	5 357 mln zl	5 188 mln zl

c. Other products and markets

814. The company has carried out subcontract work for the production of bogie frames and also specialist fabrications (the cutting and welding of sheet steel). The domestic market for bogie frames is dominated by the state run railway. And even though the company has only one major domestic competitor, PAFAWAG in Wroclaw, it is unclear what demand will be available in the foreseeable future. There has been speculation that a high speed railway network may be proposed. But if Famabud does eventually benefit from such developments these will be in the medium to long term.

815. The area of specialist fabrications is increasingly being exploited by the company, particularly with regards to assignments which :

1. are comparatively complex,
2. use a high proportion of labour time,
3. do not need complex or computerised machinery.

816. Examples of recent subcontract work :-

NIVAR (Germany) - Cable reels & drums for winding telephone cable, optical waveguides & plastic sheath tubes. A contract to supply large spools up to 3,5 m diameter is nearing completion.

HaCon (Germany) - lift trailers for yacht transportation. The design incorporates a hydraulic lift facility. A prototype has been sent to HaCon for evaluation. The first order will be for 4 units.

Windhoff AG (Germany) - Component supply for multi functional machines used in both rail traction & track equipment.

Volvo (Sweden) - component supply for open load carrying bodies. We were told that Volvo is planning to involve FAMABUD in the assembly of truck bodies (dependent on

quality & price). The initial plan under consideration was to assemble 150 vehicles per annum using the facilities at FAMABUD). We heard from another source that this work may have already gone to Bumar-Labedy.

817. When a customer wishes to purchase a spare part for a crane Famabud normally sends the client to the manufacturer of the spare part thereby missing an opportunity to not only sell to the client, but also to keep in touch these customers. Clients also do their own repairs as this has been the norm in the past. Famabud is again missing an opportunity in selling an additional service with little or no cost to itself apart from the marketing effort.

818. This market (the production of other fabrications to designs supplied by the customer) offers a good future for Famabud. Its position on the German boarder, the good infrastructure (motorway. rail and sea) and the cheap labour force (in comparison with Western Europe) could make the company look attractive to Western customers.

Assessment of markets (domestic/export)

a. Quality

819. This must be an area of particular concern. If Famabud intends producing for a wider international market, it would be subject to quality audits. The present situation would mean non-approval. They have the necessary plant and machinery to produce to a high standard of finish. There is clear evidence that they have achieved the appropriate standard when required. The whole standard is reduced by inappropriate storage, handling and identification. Damage was evident on finished parts because they were in direct contact with the floor. Bearings for gear boxes were left

ANALYSIS OF STRENGTHS AND WEAKNESSES FOR CRANES

Key: A - Arnold Hill O - Famabud	PERFORMANCE					IMPORTANCE		
	STRENGTH			WEAKNESS		HI	MED	LOW
	+2	+1	0	-1	-2			
MARKETING STRENGTHS								
1. Company is well-known and highly regarded						O	A	
2. Company has a strong relative market share			OA				OA	
3. Good reputation for quality	O			A		OA		
4. Good reputation for service	O			A		OA		
5. Low manufacturing costs			A		O	OA		
6. Low distribution costs			OA				O	A
7. Effective sales force				OA		OA		
8. Effective R&D and innovation					OA	OA		
9. Geographical advantage	OA					O		A
10. Raw material adventage			A	O		OA		
FINANCIAL STRENGTHS								
11. Low costs of capital				O	A	OA		
12. High availability					OA	O	A	
13. High profitability			A	O		A	O	
14. Financial stability					OA	OA		
MANUFACTURING STRENGTHS								
15. New, well-equiped facilities		A	O			O	A	
16. Strong economies of scale	O			A		OA		
17. Capacity to meet demand	A					O		A
18. Able and well-trained workforce				A		OA		
19. Ability to deliver on time		A				O	A	
20. Technical and material [illegible]				A		A	O	
ORGANIZATIONAL [illegible]								
21. [illegible] leadership					A	OA		
22. [illegible]				A		OA		
23. [illegible]							O	A
24. [illegible]				A		OA		
25. [illegible]				A		A	O	
26. Speedy response to changing conditions					A	OA		

exposed to the air which left them vulnerable to contamination. Machine finishes were not protected. Welded structures stored in a manner that would cause permanent deformation. Inappropriate manufacturing activities taking place side by side with the result that one of the products is damaged or contaminated. Little or no evidence of the appropriate control documentation with the work being processed. No identification of inspection approval during manufacture. No formal/acceptable identification of scrap and rejects. This situation is symptomatic of controls and procedures not being enforced.

820. The base rotating cranes produced by FAMABUD are dated in design. When comparing the FAMABUD fixed crane design (with designs typically found in the West) the following point are noted :

a) Requires a large assembly area on site.

b) Larger bearings, engines & transmissions are required to compensate for design inadequacies.

c) High energy consumption.

b. Design

821. Currently there are 3 crane designs in production ZB 756/100, ZB-W-75/100, ZB-120/200 in addition there is a further design ZB 20 built as a prototype waiting for testing and approval. Finally there is a design concept ZB-S-1000, which according to the Design Manager will take two years to develop.

822. It is evident that the current production range of 3 relies on past technology and FACTOR OF SAFETY which is achieved by maximising the size and hence weight of the structure and drive mechanism. By comparison competitors cranes have about 20% less weight than the equivalent FAMABUD crane. One effect of this is when a cost comparison is carried out. A crane

produced in Germany cost is USD 7 per Kg. The FAMABUD equivalent cost is USD 3 per Kg. The 20% weight differential reduces this price gap. The cost advantage while not totally lost is however somewhat absorbed.

823. Three other areas of note must be, the oversize of the gear train, non-automatic counter weight compensation and questionable electrical integrity. Unfortunately some of the questionable design features of the existing range are manifest in the ZB 20 prototype.

824. There must be some confidence in proceeding with the ZB 20. This is supported by the changing construction requirements in Poland. Subject to the time factor and to take advantage of the export potential the design concept should be reviewed to include technological advances. If this is delayed the market will be restricted to Poland and its near neighbours in the East. Realistically in the short term in order to maintain production and sales it may be necessary to move forward in two stages :-

1/ Complete the prototype evaluation and U.D.T. approval and produce a pilot production batch of units (quantity to be influenced by market intelligence). Launch the product simultaneously in the domestic markets and in the East.

2/ Review the design on a fixed time scale, obtain feed back from the pilot study and, incorporate new features which would either improve the design or manufacturing process.

825. The above would help to secure its short term competitiveness and act as a springboard for the future success of Famabud.

826. The Design department's ability to cope with design changes is poor as it still employs traditional work methods. There is a case for the introduction of a Computer Aided Design. After the normal learning curve, the time to complete original designs, make any changes and update design standards will dramatically reduce. A computer system complex enough to cope with such demands, including appropriate training can be installed for approximately USD 60,000. The system will have the facility to be interfaced with a Computer Aided Manufacturing (CAM) program in the future. We recommend that the chief design engineer goes on a course to the UK to learn CAD (Computer Aided Design) techniques.

c. Assessment of delivery

827. Due to the size of cranes the main form of delivery is by rail. Both sites at Szczecin have railway sidings linking them up to the main network. Once nearing their destination the cranes need to be unloaded and delivered to the construction site by road. If size was not a factor it would be more logical to deliver by road due to its flexibility and reduced costs. Having the facility to connect to the main rail network must be considered an advantage to the firm.

828. Delivery is not a critical point concerning the enterprises fundamental competitive position. However, when designing smaller cranes the possibility of transporting them by road should be explored.

d. Confirmation to standards

829. The standards present in the factory have been built up over time and have been dictated by the state. In addition the standard of construction is agreed in advance by the Polish safety inspectorate and each crane is examined by a government official. For the production of bogie frames these

standard of construction is agreed in advance by the Polish safety inspectorate and each crane is examined by a government official. For the production of bogie frames these have to comply with the "DIN" German safety standards before they are transported there.

830. Whilst the materials, and generally the parts for building a crane conform to international standards, cranes are not certified for use in the West and if the enterprise embarked on obtaining an appropriate certificate this would be relatively costly. The cranes normally comply to standards in ex COMECON and Third World countries.

831. There are international standards relating to the production process. These standards are encapsulated in the British Standard Institute on Quality Systems-BS 5750. The organisation does not comply with such standards but if it is to compete in the long term especially with countries in the West then the adoption of such standards should be its goal.

e. Raw material cost and availability

832. The main material components of manufacture are the iron and steel used to form the chasis of the crane and bogies. In addition there are specialist parts bought in such as gear boxes and engines which form the bulk of the rest of the materials used for manufacture. Both these elements are purchased from other Polish manufacturers.

833. The cost of the metal components are about 20% - 30% less than those from the West and are easily available. The other elements are also appreciatively cheaper than those in the West and again are freely available, with a delivery time of typically less than one month.

834. The quality of the metal components conform to recognised international standards nowever the other components are not built to a particulary high standard and due to the lack of their variety do not conform exactly to the specifications of the rest of the crane. There is therefore a hidden cost in using such components. However the only remedy to this would be to carry out a costly redesign of the cranes concerned.

f. Efficiency of Labour & Plant Utilisation

835. The Production/Sales plan is contracting and has been for the last four/five years. Whilst direct and indirect staffing has been reduced it is not in proportion to the reduction in demand. Thus there is surplus labour in terms of numbers and mix. No doubt the influence of the factory Council and Trade Unions have had an effect on the need to maintain manning levels. Another effect is the need to adjust management thinking to cope with the facility changing from large repeat orders to a number of small orders, some of which may not be repeated. In addition:

a) Under utilization of plant & machinery possibly in some instances as low as 20-30% on one shift

b) A number of machine tools are life expired

c) Underutilization of labour results in Yield or Efficiency being less then 50%

d) Quality of workmanship is adversely affected due to lack of co-ordinated control.

836. In the general terms labour productivity has been dictated by the work practices and traditions of the former socialist state. Jobs were guaranteed and incentives to increase productivity were barely present. Labour productivity is low for the following main reasons:-

- inefficient plant being used;
- lack of measurement of departmental and individual

- the organisation's previous goal was to meet production targets;
- gross overmanning in all areas;
- a high percentage of manpower being diverted to workers welfare
- general level of managerial skills below western standards;
- trade unions have major say in factory policy. Unpopular decisions have, in the past, been deferred;
- production area too large;
- far greater level of materials used and hence more labour time necessary;
- lack of major investment in machines or up to date working practices.

837. As can be seen by the following table showing labour productivity in Polish and foreign factories, Famabud compares reasonably favourably with other Polish companies though 'Zastal' can be described as nearly 6 times as efficient as Famabud. However when comparing Famabud's productivity with foreign companies even greater differences can be seen. 'Productivity' for this exercise is based upon the turnover generated by each employee.

8 C. COMPARISON OF FAMABUD'S LABOUR PRODUCTIVITY WITH OTHER ORGANISATIONS

Name of factory and location	Productivity of labour in 1990 USD	Ratio to Famabud
SFMB Zremb-Famabud Poland	14.590	1
'Zastal' Zielona Góra (goods wagons)- Poland	36.254	5.9
H.Cegielski - Poznań (marine engines) - Poland	14.100	1
Z.M. "Ursus" - Warszawa (tractors) - Poland	8.810	0.6
FSM Bielsko-Biała (cars) Poland	18.900	1.3
Fiat - Italy	157.400	10.8
Toyota Motors - Japan	660.000	45.2

838. Total wage costs represent 1/4 of the total amount of costs (8D below). An analysis of a wage costs for the first half of 1991 broken down by department is also attached (8E). This shows the surprisingly low proportion of direct production costs, as compared with other areas.

S D. WAGES AND SALARY COSTS

6 Months to 30 June 1991	'000	% of total costs
Wages	5.967	15,12
Charges (tax on wages and insurance rate)	3.562	9,03
Total	9.529	24,15
	=====	=====

8 E. ANALYSIS OF WAGE AND SALARY COSTS

Months to 30 June 1991	mln zł	%
1. Direct production	1.770	18,57
2. Indirect production wages	2.363	24,8
3. Costs of toolroom	484	5,08
4. Costs of wages in the dep. of chief mechanical engineer	600	6,3
5. Costs of wages in the dep. of chief power engineer	650	6,82
6. Costs in the transport dep.	406	4,26
7. Costs of wages of the hotel	67	0,7
8. Costs of wages of the dispensary	14	0,15
9. Costs of wages of the school	10	0,1
10. Costs of wages of the Management	1.635	17,16
11 Costs of wages of administration	1.511	15,86
12 Costs of wages for mandatory contracted works	19	0,2
TOTAL	9.529	100,0

839. Moreover, wages of the management, administration and welfare service (hotel, dispensary, school) amount together to 3.256 mln zł i.e. 34,17% of total wages.

8 F. ANALYSIS OF NUMBER OF EMPLOYEES

	1988		1989		1990		5 mths. 91	
Category of employees	No.	%	No.	%	No.	%	No.	%
1. Production	369	38,1	299	34,3	212	36,1	193	34,9
2. Maintenance	367	37,9	355	40,7	220	37.4	213	38,5
3. Administration	233	24,0	218	25,0	156	26,5	147	26,6
TOTAL	969	100	872	100	588	100	553	100

840. To compare labour efficiency we can recalculate turnover at 1988 prices for each year and divide this figure by the number of employees. In spite of a reduction in the number of employees the value of sales per employee calculated in fixed prices has reduced indicating a reduction in labour efficiency. The very low result of 0,81 for 1991 is because for the first time cranes were being produced for stock.

8 G. EMPLOYEE EFFICIENCY AT 1988 PRICES

Sale at fixed prices	1988 mln zl	1989 mln zl	1990 mln zl	1991 mln zl
from 1988 - total	8.053.0	6.923.0	4.183.0	448.0
Sale at fixed prices from 1988:				
- for 1 employee - total	8.31	7.94	7.11	0.81
- for 1 direct labour employee	21.82	23.15	19.73	2.32

Assessment of advantages/disadvantages for competitors of former COMECON, raw material suppliers. domestic customers.

1. Competitors from former COMECON countries

841. SFMB ZREMB-FAMABUD is the only domestic producer of building cranes. Within other former socialist countries there are producers of similar equipment i.e.Russia & Bulgaria. In 1990 Famabud was chosen to supply 60 cranes to Romania in competition with Bulgaria. As the Polish cranes were of superior quality, this made Famabud the preferred supplier.

842. There are two other self erecting crane manufactures in ex COMECON countries, these are, Vitkovice in Czechoslovakia and EPGEP in Hungary. Their products are in the middle and upper ranges of the self erecting crane market when comparing lifting height, load bearing capacity and reach. The division of the market can thus be seen. It was decided that Poland would produce for the lower end of the market.

843. Such cranes use similar technology to that of Famabud and cheaper than in the West. However it is probable that such competitors are designing improvements in order to complete with western designs. This means that Famabud is at least 2 years behind its competition in Central Europe. The Czechoslovakian company has several entries for self erecting cranes in the Cranes Today Catalogue. This means that these cranes are already in production and comply with the international standards.

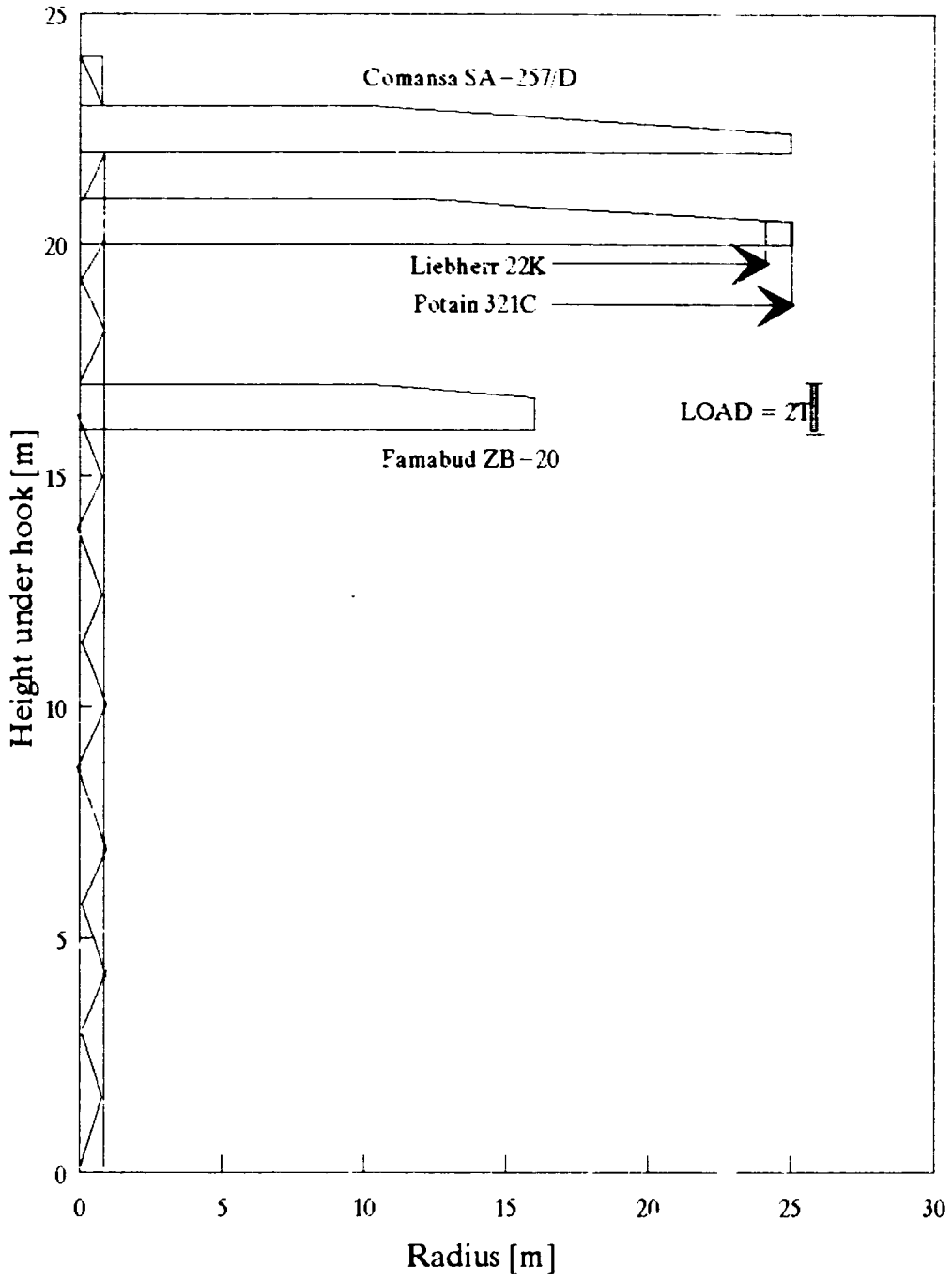
COMECON SELF ERECTING CRANES

	Famabud	EPGEP Hungary			Vitkovice Czech'	
	ZB 20 proto.	FT 40/50	FT 60.1	FTR 75	MB 1030.1	MB 0330
Max load @ t	2.00	4.00	4.50	12.50	8.00	4.00
Min radius m	2.50	2.00	3.00	5.00	15.60	11.10
Max load @ t	1.25	1.15	1.70	2.75	3.20	1.00
Max radius m	16.00	35.00	35.00	25.00	32.00	32.00
Max height under hook m	16.00	27.50	32.60	10.00	28.70	25.00
Max hoist speed m/min	18.6	50.00	80.00	8.00	60.00	48.00
Max slew speed rpm	0.75	0.80	0.73	0.84	0.90	1.00

844. Cranes manufactured in the former USSR and Bulgaria are cheaper than Famabud's but are of a lower quality and are known to fail. It is unlikely that these cranes will compete with other manufacturers.

845. Famabud's staff are unaware of such competition and therefore they should take the appropriate steps to find this out.

Comparison of height under hook and the radius based upon a maximum load bearing capacity of 2 tonnes between ZB – 20 prototype and other self – erecting cranes



	FAMABUD	POTAIN	LIEBHERR	COMANSA
	ZB – 20	321C	22K	SA – 257
Max. lifting speed [m/m	18.6	50	40	30
Max. slew speed [rpm]	0.75	1.0	0.9	1.0

b Polish Raw Material Suppliers

846. In 1990 Famabud used 87 domestic suppliers. These can be divided into two categories :

1. The quality and range of specification for raw materials matches the Western supplies but has the advantage of being 30% lower in Poland. Famabud orders from the cheapest supplier which is in Częstochowa.
2. The number of proprietary suppliers of electrical & mechanical equipment, is limited. This has resulted in Famabud being locked into single sourced supply. Whilst there is a price advantage, this is countered by the cranes being heavier and therefore adding to the cost of materials. This would result in western customer dissatisfaction.
3. Due to the down turn in the economy the Polish suppliers at first tried to recover their total overheads on a reduced turnover. They became uncompetitive, and in some cases, it was cheaper to purchase from the West. This has now changed, they have learnt their lesson and are competing against each other for business on an opportunity cost basis.

c Domestic Customers

847. These are generally large state-owned companies. At present these companies are generally in a very poor financial condition. Their stock of cranes is high and in a depressed market plant is underutilised. Some construction companies have contracted with the effect that surplus cranes are being sold off in an already depressed market.

848. It is unlikely that cranes will be required in Poland in the quantities that were sold during the past 15 years. The reason being, that even if the construction industry expands, the market for the taller crane is saturated. In addition

because building programmes will be carried out on competitive tender basis and site costs will need to be reduced. One way of reducing site costs is to shorten the construction time and hence the time the crane needs to be on site. Therefore the effect will be that the same numbers of cranes could be used on more sites within a given period of time.

d Assessment of advantages/disadvantages for new and/or improved products

849. SFMB ZREMB-FAMABUD has prepared and assembled a prototype new crane ZB-20 intended for constructing buildings up to 5 floors. This crane has its own trailer. It is not necessary to use other equipment to erect the crane and erection time is 3 hours. The selling price is estimated to be 380 mln zl . For comparison prices of other firms offering similar cranes:
a/ Peiner SMK201 for 81.600 DEM ~ 538 mln zl,
b/ Liebherr 20K (a little bigger) - 640 mln zl
c/ Comansa (Spain) HT 2692 - found in 1990 the best in this category (automatic erection - 7 minutes, a little bigger) - 925 mln zl.

850. ZB-20 has the construction and quality faults of the older Famabud cranes (ZB 75/100, ZB 120/200) except for a new, modern squirrel-cage motor which makes electric equipment and driving gear more simple. Sections of the crane have been damaged during testing and the prototype still needs improvement. Comparison of the ZB-20 specifications with other leading European companies are shown in table 8 B, earlier in this section.

851. It is recommended that FAMABUD concentrate on the production of the ZB 20 mobile crane in place of the dated tower cranes. The ZB 20 matches the new requirements for lower buildings and has a self contained transportable unit. The changing situation will favour smaller, privately owned enterprises and the ZB-20 is an affordable option.

852. The market potential was tested in September 1991 by a mail shot. To all 40 building firms in Stargard Szczecinski area plus a further mail shot to companies in Szczecin. The result was to be extrapolated to represent the whole domestic market. Only one firm responded to the questionnaire and was unwilling to buy the ZB 20. The only positive interest expressed to date to buy the ZB 20 was at one of Poznan's international fairs.

853. There seems every reason to believe that the crane market will continue to expand over the long term. The future for self-erecting tower cranes - Europe's second most popular variety - looks promising in the long term, especially in central and eastern European countries. Aided by innovative new product development, the larger tower cranes now dominate inner city development and major construction projects throughout Europe. This has been at the expense of the mobile crane, now virtually dependent on the crane rental market's shorter term and heavy lifting operations. Source: TCR Special Report on the European Crane Market 1990/91 published by ABH Partnership.

854. The ZB 20 prototype which, has its own trailer, is intended for use in constructing buildings up to 5 storeys. The crane can be erected in 3 hours and no other equipment is necessary to make it operational. The crane has been tested to destruction and currently modifications are being made to

ensure that it complies with specifications. Its construction and quality is similar to that of Famabud's existing cranes except that a new modern squirrel - cage motor has been added which makes the use of electrical equipment and gears easier. As a result of comparison with other cranes, we can say that ZB-20 has lower exploitation parameters:

- lifting height 25-37.5% lower
- max.radius 50-56% smaller
- slowing speed 1,2-1,33 times slower
- lifting speed 1,6-2,7 times slower

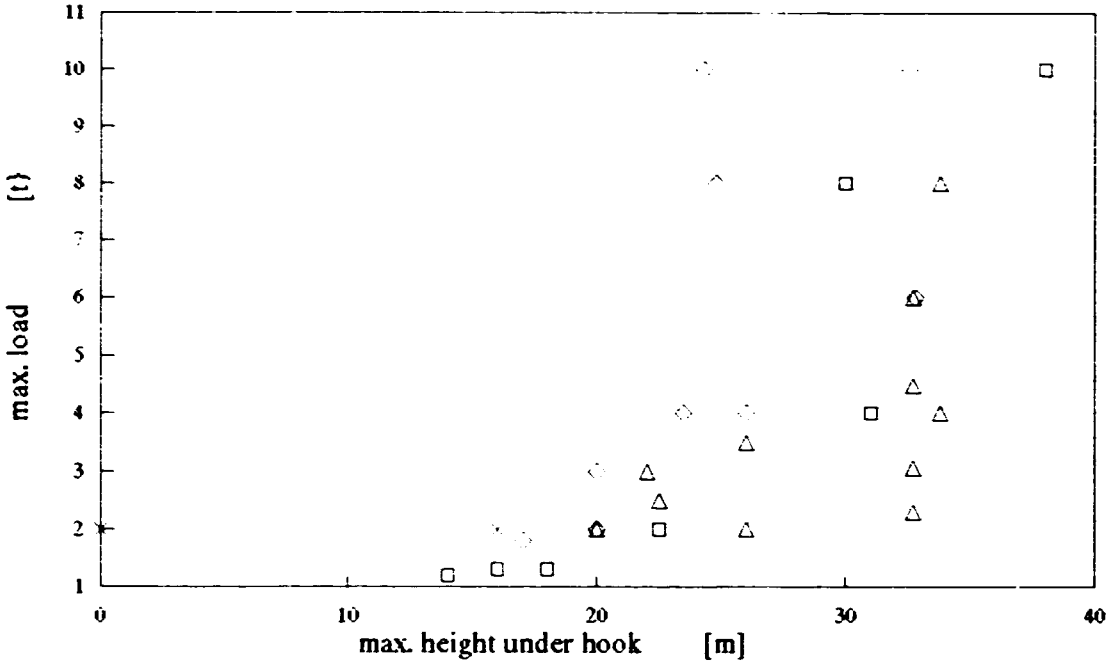
855. These parameters directly influence work efficiency and range of utilization. Table 8 B compares the specifications of the ZB 20 similar with products of other leading crane manufacturers in Europe. Only Comansa (Spain) produces cranes with smaller radius and lower height. In general ZB-20's height and radius is lower than the norm. For this reason the size of its export market will be relatively small.

Impact of any future changes in prices/Polish business environment on competitiveness

856. The present government has a rigid anti-inflation policy. Prices are mainly free to find their own level and the government encourages competition.

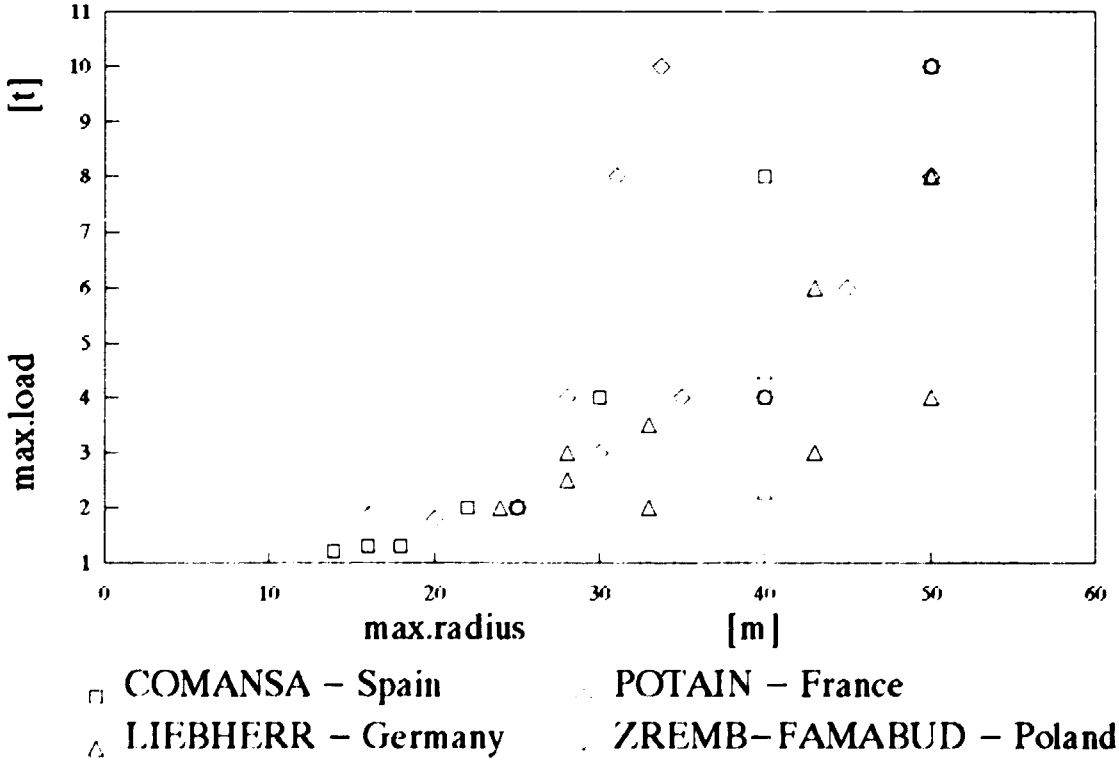
857. The Polish business environment has changed substantially in the last 2 years. The monopolistic/oligopolistic planned economy had difficulty fulfilling internal demand. In addition all exports were operated and controlled by government agencies. Factories did not compete with each other. Their product ranges were so planned that factories in the same industries produced similar items differentiated usually by size. At best the extreme ends of a product range

RANGE OF SELF–ERECTING TOWER CRANES



Source: Cranes Today Handbook 1990

RANGE OF SELF–ERECTING TOWER CRANES



Source: Cranes Today Handbook 1991

may have overlapped with another factory. In Famabud's case it is the only tower crane manufacture in Poland. It produces a luffing jib crane which is a specific type of tower crane. It's nearest rival in central and Eastern Europe is Vitkovice in Czechoslovakia which produces a saddle jib tower crane.

858. Polish industry did not produce the variety of products demanded. Consumers had to accept what was available. In Famabud's case their cranes were designed around the availability of such items as electric motors and wire rope. In reality there was no real business environment - what was produced was sold.

859. Prices did not matter to a great extent. The sales price was based on cost plus. There was no real market to keep the cost down. State and companies bought cranes not only because they required them, but also to satisfy their investment plan as dictated to them by the state. The economic need was not justified with regards to western criteria. In addition building programmes usually took more time to complete, requiring a crane to be on site longer, therefore creating an artificial demand. This has changed with the adoption of a market economy. Prices are now dependant on market forces.

860. These are currently main factors affecting prices in Poland.
   a/ recession in the economy
   b/ competition from the West
   c/ exchange rate pegged initially to the dollar and now to the dollar and a basket of european currencies
   d/ import duties
   e/ relative inflation

861. The recession is becoming increasingly severe due to the cancelled contracts and the lack of orders from the former

USSR. In addition western companies are becoming more increasingly interested in selling the products to central Europe. Customs duties for imports were increased this year to slow down the effect of this competition. With the recent devaluation and relatively low inflation rate Polish firms have recently had the opportunity to offer products at stable prices. Furthermore, many firms including Famabud are beginning to cost their products in relation to fixed and variable costs. In, addition by cutting overheads and reassessing their operations, such firms are becoming more efficient. Additional changes are being made to the products to comply with client wishes and their perception of what the market wants including the appropriate pricing levels.

862. In the future, if inflation remains at western levels, Poland should stay competitive due to its low wage rates and factories increasing efficiency. When the economy starts to improve, real wages will increase. Wages and hence prices will increase and the products will need to compete on other criteria. Such criteria will need to be developed during the period of low wage rates.

863. Future devaluation, if carried out, on the one hand will help the economy by keeping Polish goods competitive when exported. However the adverse effect is for imported goods to cost more forcing wages up and therefore fueling inflation. There will be a time delay before the inflation neutralises the advantages of a devaluation. Therefore devaluation may be used to assist in solving short term problems, but in the long run market forces will dictate price levels and hence Poland's competitiveness.

864. The Polish business environment is also affecting competitiveness. This is presently at the development stage.

Significant changes can be seen during the last year. New business are being set up all the time. Most new small businesses have been set up by locals who have seen a market potential. Western firms or individuals from developed countries are also beginning to make inroads into Poland's economy.

865. In the future Polish enterprises and the western counterparts will through their work change the business environment to be similar to any country in the West. This change will increase competitiveness within Poland.

866. Due to its large population, Poland as a market, in the long run, cannot be ignored and therefore the economic changes will probably occur through Polish industries fighting for survival. This will cause changes in Poland with western firms becoming increasingly involved in order to gain their share in a wider European market. In addition family businesses will develop to fill niche markets or fill local demands.

Environmental impact

a Air pollution

867. The company has been within the permissible level of air pollution set by the Environment Protection Department in September 1989, valid until 1999.
The factory uses two types of dust collectors:-
- cloth filter dust collector - 95% effective
- backfall dust collector - 92% effective

b Water and sewage

868. An agreement was reached between the factory and the regional water authority in October 1990 detailing the permissible

concentration of all kinds of pollutants in the factory's effluent. The majority of sewage is non-industrial and there is a water filtration system present.

c Noise

869. The environmental protection department has set the maximum permissible noise level for the factory. In theory by having all the plant and machinery operating at once this noise threshold can be breached. However in practice this is highly unlikely.

d Solid industrial waste

870. Scrap paper and ferrous scrap is collected and sold. Other solid industrial waste is collected in skips and removed by lorry.

Impact on market from demonopolisation

871. During the planned economy era Famabud was effectively a monopoly. It supplied its tower cranes not only to the Polish construction industry but also to other COMECON countries. The selling price was based on cost plus and they sold all the produced tower cranes under the plan which they negotiated with the government planning authority.

872. Under the planned economy system, the construction companies had no choice in what tower cranes they brought. This was dictated to them by government. Construction projects in Poland and the other COMECON countries were not run economically and efficiently. The construction companies usually required more cranes than was strictly necessary due to inefficiencies, bad planning and unnecessary capital investment.

873. Since January 1990, when the change to a market economy was instigated, construction companies have had to become more efficient. Together with the general recession in the construction industry there is no effective demand for tower cranes.

874. The major factor which will affect Famabud in the long run is that its monopoly status has been withdrawn with the change to a market system. This also means that western tower crane manufacturers can now openly sell to the old COMECON countries. Therefore Famabud is in direct competition with other crane manufacturers.

875. The effect of this open competition has been evident to Famabud. In the centre of Szczecin there is a new large construction project for a shopping and office centre. The tower cranes being used are not Famabud's but from western firms.

876. At present it is difficult to say what Famabud's future role will be in the crane industry for the following reasons.

a. The building recession in Poland has shown that there are too many tower cranes in Poland at present. Potentially there is a very large second hand or rental market.

b. In the future a lot of the large construction projects will be project managed by western firms. The construction site critical path will become crucial and probably dictate the need to use faster and more efficient cranes. Thus the western site project management team may specify the type of crane to by used by the main and sub-contractors. Factors which may determine what type of crane to be used includes erection and dismantling time, height, reach, turning and lifting times, dynamic lifting load and safety features. Most of these considerations may

eliminate the use of Famabud cranes.

877. Famabud's main advantage is that it can produce at a lower price than its western counterparts. Its main disadvantage is that the other manufacturers produce a better crane. Therefore to stay competitive it will need to manufacture and sell cranes at probably less than half the price of its major rivals. In addition it will need to compete with the Czechoslovakian and Hungarian crane manufacturers.

878. Due to the manufacturing technology used for making cranes, Famabud can manufacture other products, which are basically fabrications. Fabrications are labour intensive and therefore Famabud has an advantage in the open market because its workforce is paid less than in Western countries. Western companies, mainly from Germany, are ordering Polish fabricated goods. This is evident in Famabud's case where the company has received a number of orders requiring the cutting and welding of steel sheets. Therefore Famabud can be competitive in the situation where it is given drawings and has to manufacture to a given specification. The company should concentrate its marketing effort in this direction. This can be done by contacting western companies and asking them to include Famabud on their tendering list for future work.

9. MANAGEMENT & ORGANISATIONAL ANALYSIS

Analysis of organisational structure

901. As can be seen in diagram A the existing organisational structure consist of three executives which are the managing, technical, and production directors. Each director has a number of departments reporting to him with the production manager in turn having the various production supervisors reporting to him.

902. Such a structure is heavily biased towards the manufacturing process. Whilst this task is important it is considered inappropriate for the future survival of the company.

903. A more balanced organisational structure is proposed with a Board consisting of the managing, marketing, finance, production and personnel directors. The proposed organisational structure is attached as diagram B. In addition we have shown in table C how the different departments should be reduced.

904. The old structure is designed for a large administration oriented organisation rather than for a company changing to meet its future needs. The proposed new structure is far less bureaucratic and more responsive to changing circumstances.

905. The proposed organisational structure is designed to reduce the non productive workforce. By having 5 directors, decisions can be made at that level. By dividing the responsibility into marketing, financial production and personnel, the natural conflicting elements in an organisation are encouraged. These departments form the basis for the profit centres. This means that each departmental manager should be responsible for the costs incurred.

Diagram A. EXISTING ORGANISATIONAL STRUCTURE

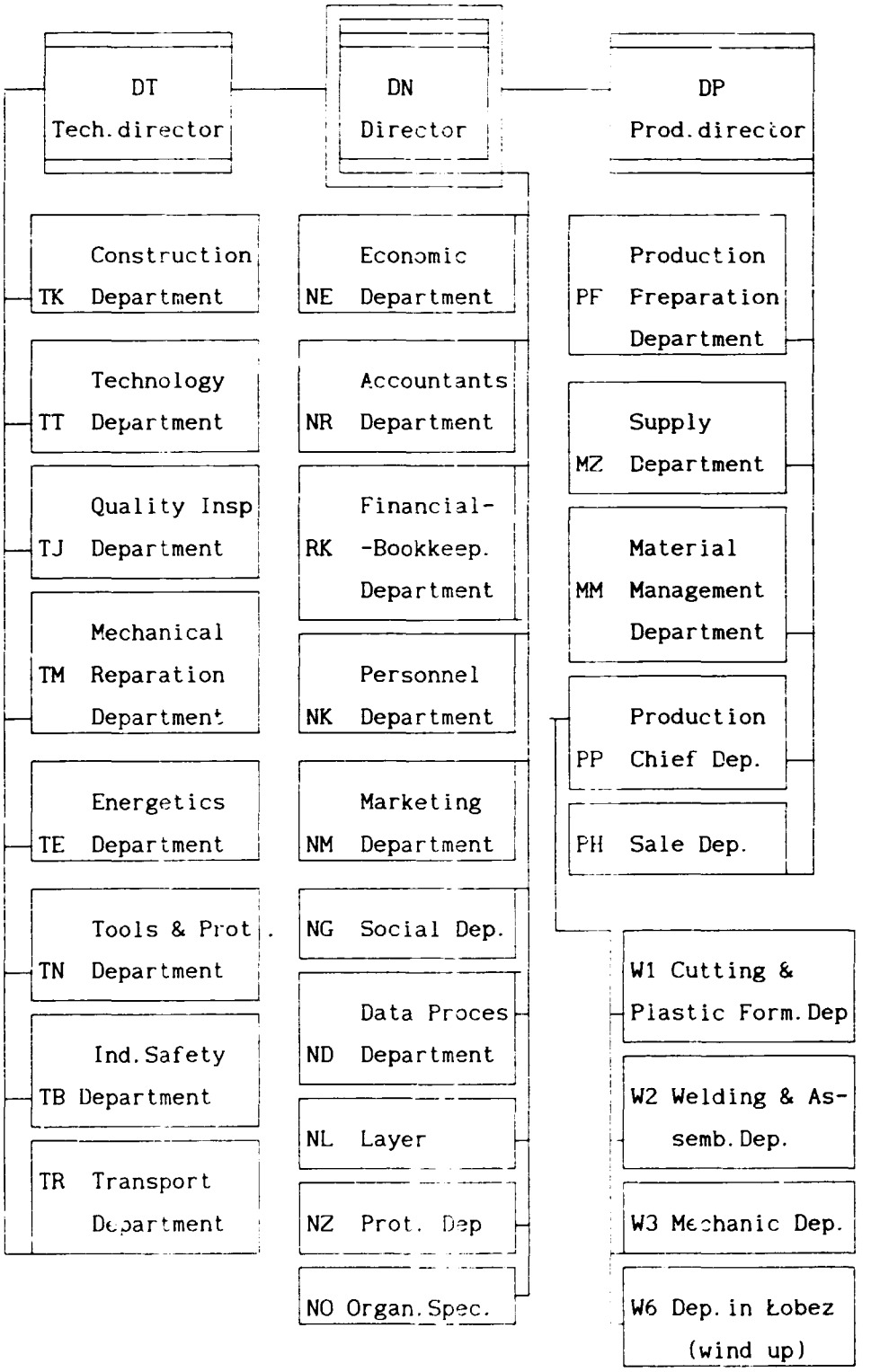
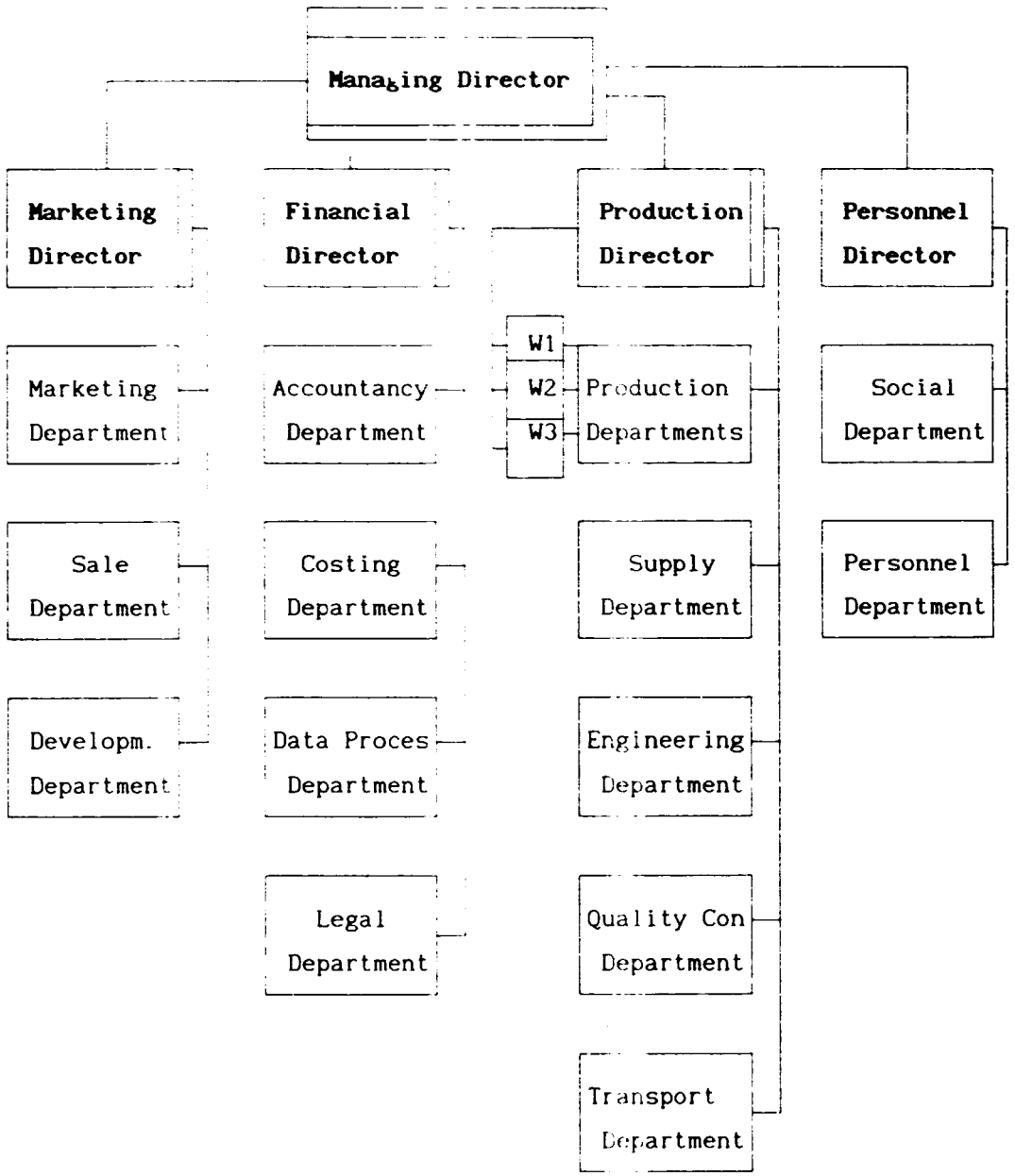


Diagram B. PROPOSAL ORGANISATIONAL STRUCTURE



906. The numbers of departments are reduced from 27 to 16. It appears that the Production Director has a greater workload than the others and that the Personnel Director the least amount of work. This is not necessarily true because the production process should work well within the organised system where responsibilities are known and the director should only be dealing with exceptions, that is problems. The

Personnel Director on the other hand deals with the "human" problems, of hiring, firing, personal matters, social activities etc. This involves a lot of personal attention. The Marketing Director has also to deal with many individual situations to ensure that customers are firstly attracted to Famabud and secondly that they then do not go elsewhere.

Table C. TABLE OF CHANGES IN STRUCTURE

New Structure	Old Structure
Marketing Dep. =	Marketing. Dep.
Sale Dep. =	Sale Dep.
Developm. Dep. =	Construct. + Technol. Dep.
Account. Dep. =	Bookkeeping Dep. + Account. Dep.
Costing Dep. =	Economic Dep.
Data Proc Dep. =	Data Proc. Dep.
Productin Dep. =	Prod. Plan. Dep. +Tools & Prototype Constr.
Supply Dep. =	Supply Dep. + Material Management Dep.
Engineer. Dep. =	Mech. Repair. Dep. +Energetic Dep.

Analysis of the decision making process.

907. The employees in the organisation seem to have substantially more meetings that would be expected in the West. This may partly be due to clumsy and overmanaged administrative structure but is probably also a symptom of overmanning.

908. The decision making process centres around the manufacturing process. Therefore irrespective of whether the organisation is making the right decisions they are guaranteed to be biased and therefore not taking the company in the appropriate direction. It should be noted that under the present structure the sales manager reports to the production director.

909. The decision making process seems to be carried out in an informal manner with decisions not written down. We were unable to see a system following up decisions made at an

earlier date.

Effectiveness of organisational structure and the decision making process

910. The current system probably served the company well when the emphasis in the planned economy was to meet production targets and little or no importance was placed on marketing or financial control. However the system in place now must at best prove clumsy and at worst result in the company making the wrong strategic decisions. It is therefore essential to change the organisational structure and hence the decision making process.

Assessment of the nature, volume of management information made available

a Adequacy of MIS

911. There is an MIS in operation with detailed information. An example of a monthly report translated into English is shown in Appendix D. This report gives potentially good information. It includes variance analysis. Unfortunately it does not give detailed information which will help to plan for the future. The main purpose of any good MIS system is to analyse what has happened and taking the known or projected information about future orders, problems etc.,to plan for the future.

b Additional information needs

912. The MIS system must firstly comment on the results and variances reported each month. It is only the exceptions that need to be commented upon. In addition these comments should include what action has been taken to correct the divergencies from the plan.

913. To illustrate the problem in the MIS system, the sales plan and variance report on the last page of appendix D was taken. This shows that in the first 6 months of 1991, Famabud's achievement was well below planned sales. No explanation are given and no action plan indicated to rectify the situation.

These figures show that the Managing Director (since there is no Marketing Director) should have been employing most of his time finding new customers as early as February 1991. If the 1990 management accounts were analysed and report prepared the problem would have been first noticed during 1990.

914. All senior management should provide input into the MIS system. Their written explanations on variances and problems will reveal the areas of conflict, bad management and where the problems lie.

915. Additional information that should be in the MIS system includes the following :

- report on new contacts made, orders received,
- report on next months marketing drive,
- report on planned sales to actuals,
- report on quality control,
- report on production scheduling and variance analysis,
- report on planned production in relation to delivery dates,
- report on variances to the cost budget,
- liquidity report including debtors and creditors turnover, cashflow for next month

916. In addition to the above the longer term goals should be discussed in relation to current trends. This should include product improvements, new opportunities etc. These discussions should be minuted for future reference and expansion. It is also very important to report on what the competition are doing and on the price of their products.

Assessment of knowledge, competence and experience of management

917. The cv's of the three main directors i.e. managing, production and technical, are attached in appendix B. In addition details of 22 of the enterprise's managers are also enclosed. These cv's were prepared in order to give an

insight view into the quality and qualification of the management. It can be seen that the management are highly qualified and training in modern management techniques and the market economy would be very beneficial to the company.

918. In the opinion of the management the factory worked effectively during the period of the planned economy when the main objective was to reach production targets, and items were priced on a costs plus basis. However the skills now required will be quite different.

919. On a production or technical level we consider management level of knowledge competence and experience to be good. However, there are skills which are lacking, such as marketing and finance. There are no individuals at a senior level at either marketing or finance and we consider this a major weakness.

920. The organisation has recently made concerted efforts to improve its marketing and selling departments but, without an individual at senior management level in this area, it will lack direction and, without a say at board level, this function will not be recognised as a part of the organisation by other departments.

921. Whilst in the West it would not be unusual to see a managing director with an engineering background because of the heavy bias within the organisation towards production, it would be more appropriate to have an individual with skills more associated with a managing director. Such skills would concentrate in ensuring balanced communication and cooperation between the various departments.

Consider feasibility of changing company structure. Privatise, joint stock, joint venture.

922. Inevitably the company structure would need to be altered. It cannot be expected to survive where the employees play the major role in choosing the directors and hence the direction of the company.

923. As detailed in the following section on the legal status of the company the major obstacle in changing the company structure will be the clarification of ownership of the buildings. However apart from the administrative delays we would expect the appropriate authorities to be flexible.

924. We would see the logical sequence as being seeking an investor for a joint venture, and with the possibility of the shares being floated, or privatise by the sale of shares (after the company becomes wholly owned by the treasury) in the medium to long term.

925. Before forming a joint venture or a company the legal title problems need to be clarified. But we recommend that this should be left until negotiations are well underway in order to reduce costs.

926. We would see going public as a long term aim and would consider the organisation too small to float by itself but perhaps with a basket of other similar entities.

Legal status of the company and its assets.

927. A comprehensive legal analysis was prepared on the organisation, the main body of which is contained in the appendix M.

928. The report highlights a problem over the buildings. These may have been constructed either from funds generated internally or from an injection of capital from the government. In order to obtain proper title, the source of funds to construct the

buildings needs to be isolated and the treasury compensated for the capital injection it made. In practical terms we do not see this is a major obstacle to any joint venture or other formal arrangements with third parties. If an arrangement was to be made we would expect the district council to grant (without any repayments due to investments made) title in order to ensure the future survival of the factory.

929. The report details shareholdings in various companies which we consider to be worthless.

930. The detailed legal analysis in appendix M has its own appendix , including copies of various legal document etc. Due to the volume of documents these have been excluded.

PART IV_ PERFORMANCE IMPROVEMENT POSSIBILITIES

10. COST OF PRODUCTION

Analysis of operations to reduce cost of materials

1001. There are a number of areas, which have been discussed in various other parts of the report which highlight opportunities to reduce the cost of material input. Most of the remedies suggested may require a little effort in implementing but as the resources needed are mostly in-house the actual cost is small.

Review of supplies

1002. In the past supplies were imposed on the firm without question. In Famabud's case they had to design the cranes to suit the ropes and motors that were available. This situation has now changed, companies, including Famabud, are free to source, their materials from Poland or abroad. A regular review system should be set up insuring that the criteria on quality as well as cost are met.

Storage

1003. The following comments relating to the input cost of material can be made with specific regards to the storage of such material :

1. There is a large amount of raw materials kept outside. As the space is made available such materials should be moved indoors as these are prone to deterioration. If tenants could be found it would be better to rent out the floor space.

2. The stock control system is weak. An appropriate system should be installed and such items as minimum stock levels and reorder quantities should be agreed in advance by production and finance departments.

3. There is a substantial amount of raw materials in the

factory which can be sold off immediately.

4. The factory is badly laid out. If it was reorganised storage areas would be more appropriately situated resulting in reduction in transportation costs and risk of damage of work in progress while being moved.

Quality

1004. Needless to say the quality of the final product is not to western standards. Introducing the appropriate procedures to improve quality will not only make the final product marketable, but also reduce the instance of wastage in overall terms. An efficient quality control system should be self financing. The extra cost is saved through the reduction of wastage, reworking etc.

Design

1005. The current cranes and also the prototype have material contents typically 20 % greater than those found outside eastern Europe. Design efficiency may be something that has to be learned by the organisation but it could well be brought in as a result of collaboration or joint venture. As the company does not have time or expertise to design their own products, partners must be found.

Standard Costing System

1006. There is no formal standard costing system. By introducing such a system material usage, price and other variances can be measured which is bound to have an immediate effect on material input costs. Improvement of work methods and work environment to reduce production cost and improve quality. Information regarding a standard costing system are discussed in other parts of the report. The price makeup of the crane is calculated by taking each production process in turn and working out its cost. The result is that direct and indirect costs are not separated completely. An example is that labour, materials, power and inspection by external inspectors are all direct costs. The inspection cost is added

at the end of the calculation. By having a standard costing system which firstly gathers all the direct costs and then by calculation determines the fixed costs at say 70% plant capacity a sales prices can be calculated which will give management information when negotiating contracts. Such information will be useful if contracts are for large quantities, opportunity cost of selling excess finished goods stock, giving discounts for off season sales etc.

1007. The work methods currently employed are highly influenced by the fall in production levels and an empty order book. The employees do not see a future in the company, therefore a standard costing system can only be implemented once the orders improve and an orderly flow of work commences. We propose that an improvement of work methods should be investigated. There is production on which a study could be done. For a standard costing system to work it must have a base of good working practices and achievable goods. Once these are calculated and used, then variances can then be analysed into normal and abnormal. The normal variances are those that the management can control such as work efficiency and costs. Abnormal variances result from events management cannot control, such as variances result from events management cannot control, such as strikes. The fixed costs will have a volume variance which will depend on plant utilisation.

Analysis of operations to reduce cost of labour

1008. Without a standard costing system it is difficult to gauge the efficiency of the workers on the production floor and hence the appropriate number of employees. However it is evident that with non production employees practically outnumbering those in production by 2 : 1 the level of the former needs to be reduced dramatically. The normal level is reversed in typical manufacturing company in the West.

1009. An exercise was carried, firstly to examine the proposed

changes in indirect shop floor labour and then secondly in management and administration. the results of which are described later on in this section.

1010. For production labour an exercise analysing the factory efficiency was undertaken, as described in section 7. With efficiency level of 42% based on the production plan to 31st December 1991 and bearing in mind efficiency rates in the West are at about 75%, the organisation could look at reducing its direct labour force of 172 by 76, to 96 and still meet its production targets.

1011. In a situation where the factory utilisation is very low the results of analysing standard costing variances will indicate that the work force should be reduced substantially. Before reducing the number of direct workers, the future labour requirements must be considered. It may be prudent to keep key employees and inform them that during this time of difficulty they may be required to carry out duties below their level of knowledge and experience.

Proposed changes in indirect labour numbers

1012. The proposed changes would reduce the number of indirect workers from to 201 to 96. This would be carried out by :

1. Combining such departments as mechanical and electrical.
2. Due to a reduction in production decrease the following principle groups :
   - drivers in Transportation Departments
   - crane operators. This can be achieved by reorganising factory area or the possibility of operating cranes by remote control.
3. Eliminate a number of job functions by combining them with others. An example of the type of function that has been eliminated from our proposal is :
   - Repairmen at the hotel
   - Xerox operator

- Crane mechanic

1013. The table below summarises our proposal for the reduction of indirect staff. This is the first phase. We believe that the indirect labour can be further reduced once an analysis is made of work practices under the revised levels in a restructured enterprise.

SUMMARY OF INDIRECT WORKERS
BY DEPARTMENTS at 23 Aug 1991
AND PROPOSAL OF CHANGES

				Pres. Nos.	Prop. Nos.
NG	20	Hotel(13):	charwomen	4	3
			receptionists	4	3
			cook	1	0
			aux.workers	3	1
			repairer	1	0
		Other (7):	sewoman	1	1
			aux.workers	4	2
			typists	2	2
Holiday centre					
	4	Sierakowo (2):	aux.worker	1	1
			administrator	1	1
		Dziwnówek (2)	administrator	1	1
			aux.workers	1	1
TK	1		xerog.operator	1	0
TJ	11		quality insp.	11	5
TM	28		repairers	19	6
			turners	3	1
			welders	2	1
			painter	1	1
			mason	1	1
			wireman	1	0
			maintenance tech	1	0

TE	25	repairers	1	0
		wiremen	9	3
		gas apparatus wor.	7	2
		assis. - " -	3	1
		plumbers	5	2
TN	26	fitters	12	6
		deliverers	4	2
		turners	2	2
		grinders	5	2
		mach.miller	3	1
TR	19	drivers	12	8
		wiremen	2	1
		repairer	1	0
		car mechanics	3	1
		crane mechanic	1	0
PH	9	locom. drivers	3	1
		transp.workers	3	1
		store workers	2	1
		crane operat.	1	1
W1	9	transp. workers	5	2
		crane operators	3	2
		deliverer	1	1
W2	24	transp.workers	10	4
		crane operators	12	6
		deliverers	2	1
W3	8	transp.workers	4	2
		crane operators	2	2
		deliverers	2	1
W6	3	caretakers	3	3
MM	12	store workers	10	5
		transp.worker	1	0
		crane operator	1	1
NR	2	inventary work.	2	1
		TOTAL:	201	96

AN ANALYSIS OF INDIRECT WORKERS

repairers	22	6
turners	5	3
welders	2	1
grinders	5	2
painter	1	1
mason	1	1
wiremen	12	4
gas apar. work.	10	3
plumbers	5	2
fitters	12	6
mach. miller	3	1
maint. tech.	1	0
cooker	1	0
	80	30

brought forward	80	30
deliverers	9	5
transp. workers	23	9
drivers	12	8
locom. drivers	3	1
crane operators	19	12
store workers	12	6
aux. workers	9	3
car mechanics	3	1
crane mechanic	1	0
quality insp.	11	5
xero operator	1	0
administrators	2	2
caretakers	3	3
typists	2	2
charwomen	4	3
receptionists	4	3
sewomen	1	2
inventary work.	2	1
	201	96

1. Indirect labour can be reduced from 201 to 96 by:
   - combining the mechanical and electrical maintenance departments,

   - transferring workers such as repairers, turners, fitters to direct production. Apart from this there are too many workers in in these departments in comparison with production scale,

   - drastically limiting the number of drivers in the Transportation Department due to substantially reduced transport needs

   - limiting the number of transport workers in the production

departments by reorganisation of the manufacturing process

- limit crane (over head crane) operator numbers by decreasing production area the the lower production scale

- decrease a number of workers like locomotive drivers, store workers. deliverers because they are not necessary in such amounts at present

- decrease a number of receptionists, charwomen, auxiliary workers and cook in the hotel

- limit of quality inspectors because of a smaller production scale

Conclusion

Proposed changes include :

1. Reduce a number of indirect workers in departments from 201 to 96 (see point 3)

2. Reduce a number of administration in such departments like bookkeeping, economic, financial by creating computer system

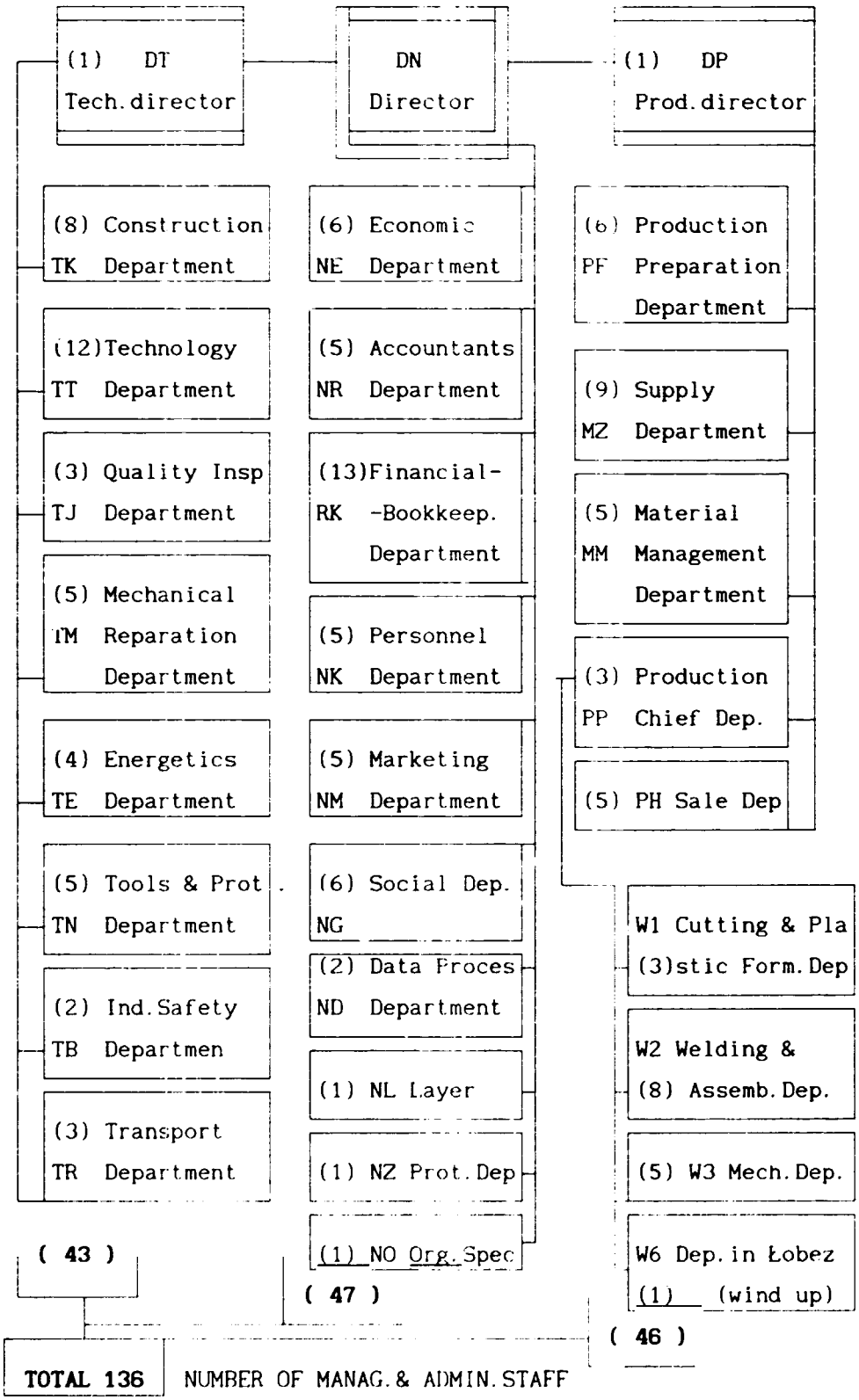
3. Separate social assets like hotel, holiday centres from the factory and reduce a number of employees in Social dept.

4. Introduce new sections:
   - Marketing Director Section
   - Financial Director Section
   - Transportation & Warehousing Director Section

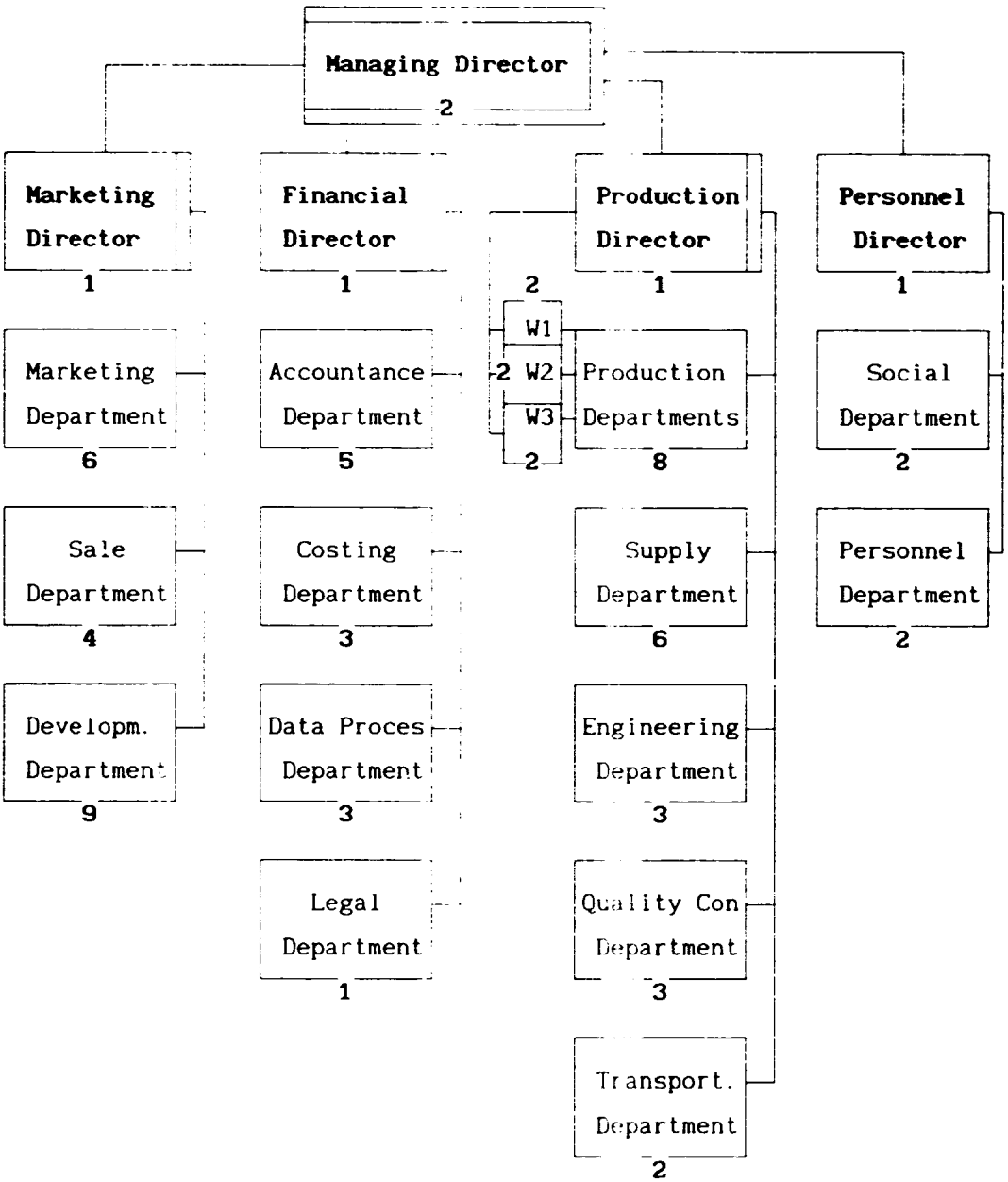
5. Connect Production and Technical Director's Section into one Production-Technical Section.

1015. The current and proposed restructured enterprise family trees are drawn below :

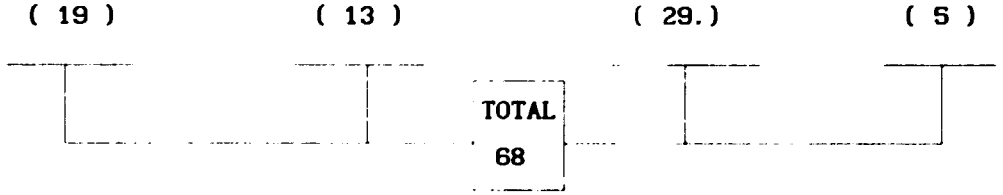
10 D. EXISTING ORGANISATIONAL STRUCTURE



PROPOSED ORGANISATIONAL STRUCTURE



PROPOSED NUMBER OF MANAGEMENT & ADMIN. STAFF



Analysis of operations to reduce power consumption

1016. In 1990, the costs of power as a percentage of the total cost of production was 7,27%, and amounted to 5,511 million zlotys (USD 550.000). In 1991 energy prices substantially increased with the charge to May being 3,096 million zlotys (USD 300.000) whilst production dramatically dropped.

1017. Power consumption as a percentage of total production costs and breakdown of the type of energy costs used are as follows:

10 F. POWER CONSUMPTION

TYPE	1988 %	1989 %	1990 %	1991-5 months %
Electricity	27.1	31.2	33.3	8.9
Thermal power (hot water)	70.1	65.4	62.5	89.1
Water	2.2	3.4	4.1	2.0
Compressed air	0.6	-	0.1	-
	100	100	100	100
Percentage costs of power in relation to total production costs	4.34	5.12	7.27	8.61

1. **Electricity**

1018. In the 1990 the cost of electricity was 2.42 % of the total cost of production but for the first 5 months of 1991 only 0.77% of the total cost of production. The charge is composed of a fixed and variable element.

1019. The fixed cost amounts to 10%. The variable charge is made of a number of tariffs and penalty charges which are designed to smooth out demand on a daily and seasonal basis.

1020. The possible cost saving is as follows :

1. As the value of production is well below capacity energy intensive machines and areas do not have to be used at peak times. For example the paint shop can be used at off-peak hours, and not effect work flow as the electricity furnace consumes 1/3 of the electric power.
2. If labour is reorganised it could be possible to only light up the appropriate section of the factory floor.
3. There should be designated persons responsible for switching off lighting after work.
4 Negotiations should be undertaken with the regional inspectorate for power administration for the fixed charge to be levied on a quarterly basis. This charge is based upon estimated future usage. A more accurate quarter, as opposed to annual, estimated of future consumption can lead to a lower overall charge.
5. Windows and lights should be periodically cleaned.

2. Thermal power

1021. Thermal power is essentially hot water mainly used for central heating and washing. The charge for thermal power is composed of :

1. A fixed charge dependent on the installation in the factory. This charge is agreed for the whole year with the Regional Enterprise of Thermal Power, and paid monthly. In 1990 this charge was over 39% of the total cost of thermal power.
2. A charge dependent on consumption.

1022. As shown in the proceeding table the proportion of thermal power represents the vast majority of energy costs. 70% of the thermal energy is used by the heating system installed in the production hall. The system of heating and ventilating the production halls is composed of :

- Central heating with radiators fitted only on the external

walls of the halls.

- Radiators hung under the hall roof.
- Hot air blowers situated on different levels. These are heated by the hot water system but the fan is powered by electricity.
- Exhaust ventilation with extractors situated on different levels varying from 0,5m to 3m in some areas.
- Gaps in the roof in the cutting shop and welding-assembly hall act as additional ventilation.
- Single ventilators placed at the external wall of the cutting shop.

1023. The heating and the ventilating system keeps the temperature between 14 C - 16 C and ensures 3 exchanges of air every 2 hours. What is regarded as typical of good system is as follows :

- Central heating heats the air at ground level.
- Hot-air blowers with grates at 3m and in the case of hot air tubing with ports directed vertically downwards, at a maximum height of 6m.
- exhaust installation with extractors at a height 0,5m placed in the wall opposite to the blowers.

1024. Blowing in hot air from the height of 3m, or 6m in the case of tubing, and directing it downwards and extracting the air at the other side of the factory at 0.5m forces the hot air to descend to the required level. This system is installed only in the prototype room. In other production areas the positioning of the items are haphazard with radiators under the roof, hot air blowers above overhead cranes and even hot air ventilation above overhead cranes.

1025. An assessment was made of the energy to heat the factory and this ranged from 14.5 Kcal\m3 to 12 Kcal\m3. In a factory in which the heating and ventilation is well planned, an energy requirement of 10 Kcal\m3 would be more appropriate with 10 Kcal\m3 being appropriate for a noxious

environment requiring the air being changed at least 5 times in 2 hours. It can therefore be concluded that the installation at FAMABUD exceeds twice the usual norm.

1026. The possible Cost Savings are as follows :

1. Abandoning the use of all radiators, which consume approximately 30% of all thermal power.
2. Sealing the roof in the cutting shop and welding-assembly shop.
3. Shutting off grates of extractors situated higher then 1m and lower than 0.5m.
4. In the main factory area adjoining the paint shop (bay E to L) the improvements would require small capital outlay.
   - the height of the hot air blowers situated above the overhead cranes at 12m should be reduced to 3m. We estimate the cost at 60 mln zloties (USD 6000).
   - only 50% of the exhaust stacks have been installed. As the system is mostly already in place, (underground extraction system), this should be a straight forward exercise and we estimate the cost at 10 mln zloties (USD 1.000).
5. Taking advantage of several days holidays and reducing temperature in the halls.
6. Reducing temperature in the heated stores and deciding which of them should be not heated at all.
7. In winter using curtains made of transparent plastics strips hung in the hall gates.
8. Improvements involving greater capital outlays are ;-
   - mounting a mechanical device for opening and closing factory shutters with a high volume of traffic, operated from a stand accessible to the driver without leaving the cab. With six gates this will cost 150 mln zloties (USD 15.000). The current system results in shutters having to be left open
   - replacing the single pane of glass with double or secondary glazing .Cost of exchanging glass, if own labour is used is estimated to be 1.000 mln zloties (USD 100.000).

3. Water

1027. The cost of water is only 0,1% of the cost of production. The main water consumer is the paint shop.

4. Compressed air

1028. The factory makes the compressed air at a cost of 250 zl per m3. Valves and fittings should be periodically checked for leaks.

Identification of non productive administrative activities to reduce overhead costs

1029. The two main areas of non-productive administrative activities is firstly, the cumbersome management and employee structure and secondly the social activities run by the firm. The first area was discussed in detail earlier in this section.

1030. The social activities are described in the following paragraphs :

1. Holiday centre in Dziwnówek

1031. Surprisingly enough due to the new multi-function building this activity is well in profit. with 282 mln zloties (USD 28.000) made in the first five months of 1991 alone. The building not only provides meals and other facilities for the holiday centre but also for the surrounding area. With 26 bungalows for 88 persons it would be best to sell the site to a holiday centre operator rather than for it to be sold piecemeal.

2. Holiday centre "Żuraw"

1032. This is a smaller site containing 7 bungalows and a small multi-function building.

3. Workers' hotel

1033. This is in effect a hostel for the workers and visitors to

the factory. Even though it only produces a small loss, for example 32 mln zl (USD 3.000) in the first five months of 1991, it is an asset surplus to requirements. The hotel should be sold off. A logical step would be to discuss with the local authority whether they are prepared to take on the asset in return for a reduction in the local rates paid to them.

4. Factory canteen

1034. The canteen only serves 200 meals a day and not only is it grossly underutilized but costs the enterprise approximately 350 mln zloties(USD 35.000). Prices should be introduced to recoup the running costs and if the result is large drop in meals served then the operations should be scaled down with the area being used for seating to eat packed meals and perhaps only hot and cold soft drinks being served.

5. Factory dispensary

1035. The dispensary is within the factory and the cost saving of closing this down will be minimal.

Detailed information on social assets

1036. The detailed information of the social assets is as follows :

a Holiday centre in Dziwnówek

1037. The centre is located 100m from the sea in the centre of Dziwnówek. The site consists of total land area - 6367m2. The object consists of:

A. 26 bungalows for 88 persons with:
- 2 rooms with wardrobes, sofa-bed, 1-person couch, table, chairs
- a bathroom with a shower, wash-basin, lavatory pan; running cold and hot water
- an antechamber

B. A new multi-function building
- kitchen - efficiency 280 meals a day

- dining-room (132 seats)
- TV-room (60 seats)
- club (44 seats)
- office
- store
- 8 habitats-20 places in 2,3 or 4-person rooms with bathroom and antechamber (equipment as in bungalows)

C. A house for the manager of this centre.

Utilisation in the summer season (15 June-31 August) 90-100%

b Holiday centre "ŻURAW" in Sierakćw

1038. The centre is found near the lake in Sierakćw small town 70km south of Szczecin. Total land area - 23.000m2. The site consists of:

A. 7 bungalows - each of them is composed of:
- 3 rooms each for 2 persons
- 1 room for 3 persons

  Equipment: wardrobes, sofa-beds and 1-person couch, night-tables, tables and chairs
- kitchen - equipment: 4-burners propane-butane cooker, double sink unit, refrigerator, table, stools, kitchen utensils and vessels
- bathroom - bathtub, shower, wash-basin
- WC

B. Multi-function building
- club-100m2
- store
- service quarters: 2 rooms, kitchen, bathroom
- reception

C. Shed

D. Pier

E. Parking

F. Technical objects:
- water-works pump with artesian well
- hydrophore

Utilisation (May-September) - 70%

c Workers' hotel

1039. The 5 storey hotel 50m from the factory.

Total usable floor area - 24.28m2

The hotel consists of:

- 120 rooms each for 1-2 persons (living area 12.5m2)
- 220 beds
- 18 flats with 2 rooms, kitchen and bathroom (area 30,3m2)

Equipment: wardrobes, 1-person couches, night-tables, tables, chairs. Rooms on the ground floor are equipped with carpets and 1-person rooms are equipped with armchairs and benches. Every 3 - 4 rooms have common bathroom with shower, 2 wash-basins and separate WC.

- club - 3 accommodation (total area 180m2)
- kitchens - 2 accommodations on the each floor
- laundry and drying room - on the each floor
- office, reception and stores

Utilization - average 80%

d Factory canteen

1040. The canteen which is within the factory consists of:

- dining-room for 100 persons
- bar with 24 seats
- kitchen background area
- office and store accommodations

Efficiency - 200 meals a day

Utilisation - 30-50%

e Factory dispensary

1041. The dispensary is located in the main factory office area.

Total usable area - 140m2. It consists of:

- 2 general study rooms
- stomatology study
- laboratory
- physiotherapy study

Dispensary is used by workers, retired workers and invalids connected with the factory.

Summary of social activity costs

1042. Summary of social activity costs is shown below :

10 C. SOCIAL ACTIVITY INCOME AND COST IN 1988 - VI 1991

(mln zl)

	1988	1989	1990	I-VI 1991
DZIWNÓWEK				
income	11.980	14.876	177.059	493.456
cost	16.135	25.474	222.802	230.788
result	-4.154	-10.597	- 45.742	+282.668
SIERAKÓW	======	=======	========	========
income	911	1.340	24.655	10.860
cost	4.724	11.037	77.170	56.418
result	-3.812	- 9.697	-52.515	- 45.557
HOTEL	======	======	======	=======
income	2.889	6.198	103.100	188.150
cost	18.944	57.641	360.885	221.084
result	-16.054	-51.443	-25.778	- 32.934
CANTEEN *	=======	======	=======	========
result	-13.237	-15.945	-254.047	-153.978
	=======	======	=======	========

* These objects are financed completely by the factory

	1988	1989	1990	I-VI 1991
DISPENSARY •				
result	-1.598	-5.970	-31.418	16.811
SCHOOL •	======	======	=======	======
result	-	-1.295	- 8.875	-10.346
HOLIDAYS IN		======	=======	=======
OTHER PLACES				
income	0.612	1.479	4.312	2.520
cost	2.817	6.640	4.312	0.0
result	-2.205	-5.161	0.0	+2.520
SUMMER CAMPS	======	======	===	======
income	1.044	0.559	0.007	-
cost	4.943	7.769	0.345	-
result	-3.898	-6.209	-0.338	-
EXCURSIONS	======	======	======	
income	0.387	0.458	0.553	-
cost	0.521	0.556	0.553	-
result	-0.134	-0.097	0.0	-
CURRENT ACTIV.	======	======	===	
income	0.329	1.814	3.166	9.160
cost	4.175	11.127	839.751	3.800
result	-3.846	-9.312	-836.584	+5.360
	======	======	========	======
TOTAL RESULT	-48.941	-116.231	-1255.251	+30.920
	=======	========	=========	=======

11. PRODUCTS AND MARKETS

Identification of new market possibilities

1101. The following have been identified as new market possibilities:-

- By far the most favourable new market possibility is work on specialist fabrications which capitalises on Famabud's main strengths. These are cost of labour and the collection of plant unique to the region (section 7). The fabrication service should be priced as competitively as possible. In other words assignments should be accepted as long as there is a positive contribution to overheads, until the first of either labour or machinery is fully utilised, at which point the price should rise to a competitive level within the market place. If in the medium to long term this results in a loss after taking into account fixed costs then it should be these costs that should be adjusted ie. reduced and not the selling price increased. Many organisations in Poland have taken the latter route.

- The company should also consider servicing existing cranes in use. Currently this service is not offered and most customers are expected to service and repair the cranes themselves. A service agreement should be offered.

- If the customers wish to repair the crane themselves, they are expected to purchase spare parts directly from a specific manufacturer. This is a service that Famabud can offer.

- There are a number of cranes which have been produced without any customer orders. Consideration should be made whether these cranes can be leased to customers requiring their use for only a limited time. An investigation should

be undertaken to see if such a market exists and if so whether the exercise will be viable.

Product improvement possibilities, new product development and changes in product mix

1102. The main stumbling block in improving the principle product, being the crane, is the lack of a strong design capability. The only realistic way to improve the product is by some form of collaboration with a foreign manufacturer.

1103. The main benefit would not only be a more up to date model but also a substantial reduction in production costs as the major production cost is material and due partly to outdated designs current models use 30% more materials than rival versions. Also as the company is not now in a state monopoly system it can source material and parts which are more suitable for new designs.

1104. The company's product in a wider sense is the fabrication work it carries out. Improvements in this area are as follows:-

- introduction of an appropriate job costing system to ensure firstly that individual assignments are properly priced and secondly that the costs can be properly monitored and finally to show the profitability per project.

- implement the recommendations on quality control as detailed in chapter 8

1105. The company's new product development effort is centered around the ZB-20. A comprehensive report on this crane is

detailed in chapter 8.

1106. The company has a very narrow range of crane models. This is as a result of the planned economy where the end user's preferences were barely taken into account. Most western crane manufacturers have a large selection sometimes well over thirty. With a narrow product range there is far less chance of selling the crane.

1107. Expanding the product range would only mean a slight increase in the number of components required for manufacturer. However as the design of say the ZB-75 is now out of date any technical or design input used to alter this crane would be wasted.

1108. To expand the product range will probably mean the introduction of electronics and hydraulics into Famabud's designs. It is therefore important that Famabud develops a relationship with Polish companies providing this manufacturing facility.

g Changes in marketing/ sales strategies

1109. The company must change its marketing and sales strategy. Until May 1991 (20 months after the change in government which introduced in January 1990 a market economy) it had no sales strategy as it was production led. We advised the company to stop production and find buyers for the stock of cranes which was accumulating. From May the company has looked for additional orders and work, but not within a planned coordinated marketing campaign.

1110. We therefore proposed and it was accepted that a Marketing Consultant be sent to Poland for two one week periods with a 2 month gap. His task would be to advise the marketing department of their plan of action and , set the tasks for

them to do. After 2 months he should return ,assess the work and advise further.

1111. The marketing effort should concentrate on generating fabrication work. Therefore one approach would be to put Famabud's name on many tendering lists. Another would be to contact companies which use fabrications (but do not manufacture themselves) and ask whether they can quote for future work.

1112. On a practical level the marketing personnel should carry out the following tasks which will help them to gain orders :

- attend industrial fairs and look for items which they could manufacture under their own name (i.e. look for ideas and market niche).
- attend industrial fairs with the intention of asking the companies on the appropriate stands whether they would like to source their components and subassemblies from Famabud
- visit the various embassies in Warsaw and extract information from the industrial index for these countries. Telephone the various companies in appropriate industries of the various countries for contact names and to check whether they subcontract work. Confirm the telephone conversation by letter and propose being added to their tendering list. Depending on response, make regular contact with these companies.
- visit the companies that have shown some interest. Develop the relationship until orders are placed. A detailed report should be kept on all places visited
- language problems must be overcome. The company should have at least a German and an English speaker in the marketing department.
- Famabud's geographical position dictates that the initial market to concentrate on are Germany, United Kingdom,

Sweden and Norway

- to provide a complete service the marketing department should contact companies in complementary fields such as electronics and hydraulics. These contacts will be essential when tendering for complete items and not just subassemblies.

Changes in production methods, technology

1113. The company has all the machines and technology it requires to make fabrications, gears etc, it does not need any new technology or production methods. This does not mean that manufacturing practice do not need to be improved and production costs reduced.

12. DISPOSAL OF ASSETS

Identification of Non Productive Assets for disposal

1201. The following assets have been identified as non productive as can be considered for disposal.

a Worker's hotel

1202. This is in effect a hotel for the workers, their families and visitors to the factory. Many of the residents are there on a permanent or semi-permanent basis. The hotel in effect supplements the local housing stock and alleviates the demands placed on the area authority. The hotel is run at a small loss. With a minimal amount of cost savings it could break even. We cannot see that property can have any value to the enterprise. It is using both the financial and managerial resources of the company and therefore it should be, disposed even for a low price. The only argument to keep it is that there is a shortage of accommodation locally and in order to attract workers from other parts of the country this facility needs to be offered. It was found however that most of the residents were from Szczecin.

1203. A logical purchaser would be the local authority. Approaches could be made to it on the basis that Famabud is facing severe financial difficulties and if it ceased to trade the residents would become the responsibility of the local authority anyway. The local authority probably does not have the resources to purchase the property. Therefore instead of purchasing it could be suggested, to the authority to take the property and forgive Famabud local taxes for a specific period, and negotiations could proceed on this line.

b Holiday Centre in Dziwnówek

1204. This centre has a multi function building which contains a 132 seat dining room together with other social facilities. There are 26 bungalows at the site which can contain a maximum of 88 people. The area is extremely popular with an occuparcy rate between mid June to the end of August of at least 90%. The multi function building attracts not only the individuals staying at the site but also in the surrounding area.

1205. As a result the site as a whole actually made a profit of 282 mln zlts (USD 28.000) in only the first five months of 1991. It is suggested that the site be disposed of to an operator rather than sold off piecemeal. A survey has been carried out which values the site at 10.947 mln zl (USD 980.000). A detailed valuation report is included in the appendix J.

c Holiday Centre "Żuraw" in Sieraków

1206. This is a smaller site and has been valued at 2.041 mln zlts (USD 180.000). The site consists of 7 bungalows and a small multi-function building.

d Major Factory Site at Szczecin

1207. The factory at Cukrowa Street has an area of 184.700 m2. There are two main productions bays. Appendix A has a map of the site together with pictures of views from different angels. Consideration was given to disposing of the site. Unfortunately the market for such a large unit is small and there is no guarantee that they would find a buyer at the asking price. In addition if it was decided to dispose of this unit. The only unit it could move to would be at the smaller factory at the dockside in Szczecin.

1208. The main arguments for and against the move to the smaller factory are as follows: -

For

-The factory size is better suited to Famabud's reduced size.

-The location of the smaller factory is better.

-The heating and running costs would be substantially lower.

-It will probably force management to look at staffing more closely.

Against

-The cost of transporting the plant and machinery will be high, especially for the specialist equipment. In fact some equipment is fixed to the factory floor.

-The smaller factory is currently being rented out. Factories of this size are in far greater demand from potential tenants and therefore there will be an opportunity cost of rent forgone if the move takes place. The current rental is 500mln zlts (USD 50.000) per month.

-The moving costs and disruption will be substantial.

-A certain amount of specialist fabrication work may have to be turned away due to the size or volume of the components.

-It will be easier to dispose of the smaller factory than the larger site thus generating cash.

1209. Due to stopped production an alternative solution would be to move the crane work-in-progress, that is cluttering up the factory outside. This would make further space available for rental. We estimate that a total of 30% of the factory could be rented out. As "Polarbox" has rented approximately 10% of the space, another 20% is available.

1210. On balance we recommend the existing factory be kept for the short term and the position reviewed regularly based upon future orders and the prospects for the firm.

e Second site at Szczecin

1211. The second site has a volume of 20.700.000 m3 consisting of production bays. An exercise was carried out to value the site. It was estimated to be worth 30,940 mln zloty (USD 2.780.000). There is some question mark over whether operations should be transferred from the main factory. This has been discussed earlier in this section.

1212. The property should be actively marketed up to the expiry of the tenancy next March. Prior to that date a final decision should be made whether this property should be sold, to ensure the period the property is left vacant is kept to a minimum. The decision should be based on current and future prospects in March 1992.

f Factory site at Łobzie

1213. This site has an area of 6.500 m2 and is valued at 2.673 mln zl (USD .240.000.). This factory is currently disused and should be disposed of immediately.

g Plant and machinery

1214. An exercise was carried out to identify plant which was surplus to requirements. A schedule of these assets are attached. An estimate of 1.841 mln zl is based on current use value. We would estimate the realisable value of the plant to be in the region of 500 - 750 mln zl (USD 50.000 - 75.000).

1215. The list which is attached represents machines which are not required for the production of cranes or bogie frames. Unfortunately it is unclear what machines will be needed for future fabrications. However the production of cranes and bogie frames is a typical fabrication and therefore the majority of machines that may be used for this work have been accounted for.

No.	Register No.	Pos.on Tab.VI	Name of the machine	Price for the new machine	Technical value of the machine	Sale price
1.	424-0004-244	1	Uiversal guillotine NU-25	43,458,447.-	25 %	10,864,610.-
2.	424-0000-202	2	Shear guillotine H 322	328,816,314.-	30 %	98,644,890.-
3.	424-0000-477	2	Shear guillotine NG 13	63,064,711.-	35 %	22,072,648.-
4.	424-0000-255	2	Shear guillotine NG 8	39,314,268.-	30 %	11,794,280.-
5.	403-0000-24[illegible]	[illegible]	Circular saw	42,686,871.-	55 %	23,477,780.-
6.	403-[illegible]-45[illegible]	[illegible]	Circular saw	131,492,354.-	50 %	65,746,175.-
7.	484-[illegible]	[illegible]	Automaton for oxygen-cutting YC-8	65,170,000.-	30 %	19,555,000.-
8.	484-0004 [illegible]	[illegible]	Automaton for oxygen-cutting YC-8	260,680,000.-	40 %	104,272,000.-
9.	401-0000 [illegible]	[illegible]	Drilling machine Ws-15	1,841,333.-	20 %	368,270.-
10.	424-[illegible]	[illegible]	[illegible] machine for sheet	17,690,229.-	25 %	4,422,560.-
11.	421-[illegible]	[illegible]	[illegible] press PRS 160P	125,810,611.-	40 %	50,324,245.-
12.	421-[illegible]	[illegible]	[illegible] press PRS 160B	24,341,629.-	50 %	12,170,814.-
13.	421-[illegible]	[illegible]	[illegible] press PRS 160B	143,258,371.-	40 %	57,303,350.-
14.	421-[illegible]	[illegible]	[illegible] press PRS 160B	173,216,534.-	30 %	51,964,960.-
15.	401-[illegible]	[illegible]	Multiradial drilling machine	44,113,311.-	55 %	24,262,320.-
16.	484-[illegible] szt.42	[illegible]	[illegible] welder	19,540,000.42	50 %	410,340,000.- for 42 pcs
17.	400-0000-465	4[illegible]	Turning lathe TZC-32 N1	349,100,256.-	100 %	349,100,256.-
18.	400-0000-466	43	Turning lathe TZC-32 N1	349,100,256.-	100 %	349,100,256.-
19.	400-0000-409	42	Turning lathe TUD-50	34,998,488.-	25 %	8,749,600.-
20.	400-0000-404	42	Turning lathe TUD-50	33,541,138.-	25 %	8,385,280.-
21.	400-0000-316	42	Turning lathe TUD-50	42,622,185.-	25 %	10,655,500.-
22.	400-0000-281	42	Turning lathe TUD-50	45,107,138.-	50 %	22,553,600.-
23.	401-0002-38	56	Multiradial drilling machine	78,083,418.-	30 %	23,425,000.-
24.	401-0002-39	56	Multiradial drilling machine	56,017,934.-	25 %	14,004,480.-
25.	401-0002-423	56	Multiradial drilling machine	35,721,241.-	25 %	8,930,310.-
26.	401-0000-425	56	Multiradial drilling machine	30,420,648.-	25 %	7,605,165.-
27.	762-0000-32,34, 397-46szt ,46	means transport	Battery electric fork truck 4 pcs	28,768,935.-	10 %	11,507,574.- for 4 pcs
28.	763-0000-14,18, 400-63.45,52,102	means transport	Fuel engine fork truck	39,542,907.-	15 %	35,588,620.- for 6 pcs
29.	730-0000-20,21, 26,40,58,29-6szt	means of transport	Platform battery elect.truck	20,397,759.-	20 %	24,477,310.- for 6 pcs
					Total	1,841,666,853.-

Arnold Hill

h Excess stock

1215. Due to past inventory policy and the plan to manufacture large quantities has left Famabud a large number of items which are unlikely to move for several years. The value of this stock is **3.106 mln zl** (USD **320,000**).

i Tools

1216. Famabud has many tools which are not used. These items valued at **509 mln zl** (USD **52,000**)These should be disposed of to other local factories.

Consider impact of selling non-production assets on:

a Enterprise's operations

1217. If carried out correctly the disposal of non-productive assets will have a neutral effect on the enterprise's operations. The suggested disposal of plant is designed to ensure that all possible operations needed to produce cranes and bogie frames are maintained. The production of cranes and bogie frames cover a good cross section of operations that will be required in carrying out future ad hoc fabrication work.

1218. The disposal of the social assets need to be handled sensitively. In the past the workers' council have had a say over most company policy, even to the extent of appointing the managing director. Their consultations will need to be sought but they must eventually accept the inevitable. It is important that moral is maintained.

1219. As suggested, the company should enter into negotiations with the local authority on the disposal of the hotel. This should be kept confidential until the position is clear and then consultations with the employees can commence. It must be borne in mind that even though unemployment in Poland is now

over 10% the rate is far lower in the Szczecin area. If as a result of the disposal of the social assets certain employees wish to leave, the staff with the appropriate level or skills should be encouraged to stay.

1220. If the principle factory closed and the operations moved to the smaller Szczecin factory this would cause substantial upheaval. However with the lower level of production it is estimated that with careful planning production losses could be kept to a minimum.

1221. This move is only feasible if Famabud ceases to make some of the sizable components which require the large bed machines. Moving and installing the very large machines would be costly.

b Comparative Advantages

1222. By disposing the non-productive assets (such as the holiday sites) there would be less time spent by management in what is in essence another form of administration. This would give management time to concentrate on areas that have the potential of generating income.

1223. A significant amount of administration costs will also be eliminated also increasing the organisation's comparative advantage.

1224. The organisation would however find it harder to recruit the appropriate staff. The social assets in all major industrial concerns are still the norm and no doubt a number of potential employees will be swayed by the fact that these assets do not exist. Unlike the west where the average working person takes a vacation independent to his employer,

in Poland due to cost constraints holidays are invariably taken domestically and in many cases are provided by the employer.

1225. This structure is fast changing and while this currently represents a disadvantage, in the future, due to changing social attitudes this should not be a disadvantage.

1226. Receipts from the disposal of non-productive assets will not be sufficient for the organisation to purchase additional capital goods and therefore improve its comparative advantage that way.

c Enterprise's financial condition

1227. As can be seen by the cash flow forecast in the following section the firm's financial condition is very poor. With the disposal of assets the company still requires additional funds in order to meet its debts as they fall due. In addition the capital base of the enterprise has deteriorated.

1228. The enterprises long term financial condition can not be solved by just disposing of the non-productive assets but by solving the core problem of productivity and hence profitability. It is likely that the receipt of money will be used to finance the short fall in working capital.

Programme for assets disposal

1229. The assets should be disposed of as quickly as possible. Purchasers for the sites should be sought immediately. The sites should be rented out if a purchaser cannot be found.

1230. Plant should be advertised for sale in Poland and abroad (i.e. Germany, Sweden, Norway) or an auction should be arranged.

1231. For raw materials the steel mills and other interested parties should be informed of the excess stock. As the steel mills sell at larger quantities than Famabud, they could be asked to refer customers when only a small amount is required. In addition Famabud could telephone suppliers and end users of such material for possible interest.

1232. Excess tools could be disposed of by producing a catalogue of items and circulating it to other local factories.

PART V STRATEGY FOR ENTERPRISE RESTRUCTURING & DEVELOPMENT

13. STRATEGIC PLAN FOR RESTRUCTURING IN SHORT TO MEDIUM TERM

General

1301. On the following pages there is a diagram showing the summary of the short to medium term restructuring timetable including individuals assigned to carry out the various tasks. Most importantly Famabud requires an injection of funds over the next two years. These funds as calculated in Chapter 14 and explained in chapter 1 should only be given if the company can show that it is implementing the restructuring programme as detailed in this report.

Redefine product focus

a Product improvement

1302. The company's products are not approved to international standards. They must bring their ZB-20 self erecting crane to international standards as soon as possible and be prepared to start manufacturing in the spring of 1992.

b New product

1303. The company does have the capability to design new products. Famabud should seek the introduction of new products from other companies by either licence, joint venture other forms of agreement.

1304. The provision of bespoke fabrication work should be considered as a new product. The company should then organise itself to cope with such work in :

- marketing : a specific marketing, drive should be undertaken promoting such work. For example companies requiring gears

Attached is formal restructuring plan detailing the individual tasks to be performed and a formal timetable of implementation

A separate schedule has been prepared showing which individuals have been assigned the task. This schedule also gives an appropriate narrative

Description of task Task Subtask	Short term			Medium term			Long term		
	up to 1 month	up to 2 months	up to 3 months	up to 4 months	up to 5 months	up to 6 months	up to 9 months	up to 1 year	up to 2 years
Introduction of new management information system (including Purchase of Additional Computer Software and Hardware)		A							
Introduce Standard Costing System			A						
Appoint Finance Director	B								
Appoint Marketing Director	B								
Review Quality Control Procedures									
Introduce Task Book								F	
Training				C					
Factory Floor	C								
Design Department					D				
Daily Spoilage Report	C								
Quality Inspection Procedures	C								
Link to Wage Bonus System			E						
Compliance With BS 5750							F		
Review of Supplies	G					G		G	G
Formalised decision making process									
At Board Level	H								
At Departmental Level	I								
At Shop From Level	J								
Search For Joint Venture Partner	H								
Change Company Structure			K						
Factory Layout									
Tidyness	C								
Short Terms		C							
Long Term						L			
Implement 'Human Recource Development' Programme									
Marketing Department – Introduction of Marketing Expert	B								
Design Department					C				
Quality				M					
Shop floor						M			
Review of Wages System									
Simplify			A						
Introduced Form of Piece Rate			A						
Computerisation				N					
Search For Fabrication Work									
Brochure			O						
Marketing		O							
Job Costing System		O							
Market Spare Parts		O							
Market Repair Service		C							
Develop ZB-20 (with improvements)					F				
Change in Organisational Structure	B								
Carry Out Asset Disposal Programme									
Holiday Centres		N							
Hotel		N							
Plants			P						

Task Subtask	Short term			Medium term			Long term		
	up to 1 month	up to 2 months	up to 3 months	up to 4 months	up to 5 months	up to 6 months	up to 9 months	up to 1 year	up to 2 years
Change in Organisational Structure	B								
Storage									
Location	C								
Stock Control System						P			
Raw Materials Sold Off		G							
Design Efficiency									C
Production Labour									
Production	Q		Q			Q		Q	Q
Indirect	Q		Q			Q		Q	Q
Administration and Management	Q		Q			Q		Q	Q
Combining Departments		N							
Introduction Wider Range of Cranes									
Conception						S			
Design							F		
Launch								F	
									O
Power Consumption									
Electricity									
Assets To Have Restricted Use –									
At Certain Times	C								
Factory Partially Lit	C								
Negotiations With Local Electricity Board		N							
Windows Cleaned	S								
Thermal									
Stop using Radiators	J								
Sealing Roof		C							
Extractors Shut off	J								
Height of Hot air blovers moved								C	
More exhaust stacks installed								C	
Holidays			M			M		M	M
Reduce Temperature in Stores	F								
Install Transparent Plastic Curtain								C	
Install Authomatic Gates							C		
Install double Glizing								C	
Leasing of cranes									
Marketing Exercise		O							
Implementation				O					
Feasibility study						O			
Reorganise Canteen		M							
Obtain additional finance & restructure existing debt	A								

FAMABUD restructuring plan

Key to personnel carrying out task

A. Finance Director after consultation with other main Board Directors
This task should preferably be done after appointment of Finance Director
B. Existing board in conjuction with outside consultant
C. Production Director
D. Production Director, but timing will depend on level and complexity of fabrication work received
E. Finance, Production and Personnel Directors
F. Production Director in conjuction with Technical Manager.
G. Production and finance departments
H. Managing Director
I. Individual directors
J. Department heads.
K. Finance Director Task should be delayed until negotiations for a formal arrangements, such as a joint venture, is well under way with third party
L. Production Director Should be left until a pattern of production has emerged and future can be predicted
M. Personnel Director in conjuction with Production Director
N Finance Director
O. Marketing Director in conjuction awith Production Director
P. Finance and Production Directors.
Q.Personnel Director after consultation with Production, Finance & Managing Directors
R. Existing board.
S Existing boards but will depend on current position of company

and large rings could be canvassed

- costing : the appropriate systems needs to be introduced to account for the profitability of individual assignments
- working practices : arrangements should be made in the factory floor to ensure the most cost effective methods are used.

Assessment of :

a Existing and new markets

1305. Existing markets for Famabud products are in recession. Penetrating the European market should be a major goal. Many large manufacturers of similar equipment have changed their philosophy by retaining a design office and a manufacturing centre. This was achieved by selling off other group companies. They subcontract their work to specialist firms including fabrications. Famabud should contact these firms and work to satisfy the minimum criteria to enable them to enter onto their tendering lists.

1306. Famabud also specialises in manufacturing gears, large rings (with teeth) and hardening processes. This service should be advertised in European trade magazines such as Cranes Today.

b Price

1307. Famabud's prices should be below market level in order to attract tenders from Western European companies. Knowledge on pricing policy could be gained by contacting other Polish firms, using similar technology, export agencies and reading trade literature. In addition a marketing consultant will indicate which organisations to contact in the West regarding guidance. These organisations will include, trade associations, trade advisory bodies, engineering consultations and main contractors.

c Competition

1308. In Poland Famabud is not alone in carrying out fabrication work. However the company is located being less than 200km from Berlin, and has German speaking staff.

1309. European competitors tender for complete packages on subcontract work, for example companies with both specialist mechanical and electrical skills can jointly tender for more complex assignments could forge links with other firms offering complementary skills.

1310. Famabud's competitors can be divided into two groups, those in former COMECON countries and those in Western Europe. Famabud's crane should be cheaper than western models. The reason being is that the cranes produced by western countries have a superior specification quality and reputation. Famabud should make enquiries regarding crane prices on a regular basis.

Maximise existing assets by :

a Increasing production

1311. Production can only be increased if the orders are there. Therefore Famabud's marketing department must monitor the orders and production capacity in various departments. It must then put more marketing resources into areas where machines are not occupied fully.

1312. Assets can only be maximised against a stable production plan. As the company is in a state of flux, it can not achieve maximum use of assets until the medium to long term future of the enterprise can be mapped out. It is suggested an asset utilisation programme should be further reviewed at this stage.

b Subcontracting

1313. By their nature subcontracting work can be labour intensive and the utilisation of the plant and machinery can not be predicted. However there is a substantial amount of specialist plant on site and it should be the full utilisation of such equipment that should be considered.

1314. Where bottlenecks appear or more orders are received for one type process than Famabud can cope with, it should subcontract the work. It should subcontract the part of the orders where there are bottlenecks in order to increase the utilisation of the other parts of the factory. Therefore Famabud must build up a relationship with other companies using the same processes.

Reduce production costs

1315. Initially it would be expected that most of the proposed cost reduction measures discussed in chapter 10 should be implemented as soon as possible, to reduce the input cost of materials labour and energy.

1316. In general terms the organisation should only use production labour on items it is sure will sell. All other staff should be used to carry out other tasks within the organisation such as reorganising and tidying the factory, and carrying out essential maintenance.

1317. Staff should be put on short time working and the wages system should be revamped to reward the most productive staff, remove most of its complexity and ensure that a form of piece rate is eventually introduced. This should be set in motion as soon as possible as there is likely to be strong employee resistance to the changes.

1318. No materials should be purchased until the factory manager

has confirmed that such stock is categorically not present either in stores or in the factory. Only stock directly relating to products with the certainty of customers should be purchased. In addition oversize stock could be machined down if it cannot be sold for a reasonable price.

Selling non productive assets

1319. Chapter 12 shows the method of disposing of the company's non-productive assets. Whilst this shows in detail what areas should be tackled it should be borne in mind that the remedies described only elevate the firms liquidity problem on a short term basis and do not bring the enterprises finances back into an even keel. In addition it exposes the company even further by eroding the company's asset base and doing little to its profitability.

1320. The possible problems relating to the land and building disposal programme, as a result of the major legal problems regarding the title of such assets, need to be resolved. The problems being that assets purchased through Government funding do not legally belong to the enterprise but to the state. We suggest immediate negotiations should commence with the local authority or government to ensure that title to all assets are transferred to the enterprise. This will speed up the signing of a formal agreement with any potential third party investor or joint venture partner.

Investments for debottlenecking, quality improvements, cost reduction and modernisation.

1321. Famabud does not have to invest in documentation on debottlenecking, quality improvements and modernisation. The company has internally all the components and systems available. Good production planning, using fully the quality control procedures as laid down in their manuals are

sufficient for the present. However the systems as laid down need to be implemented. The main constraint to this is the lack of motivation by staff to implement such a system and a sufficient level of production to ensure that such a system can actually operate effectively.

1322. Cost reduction can be achieved by implementing the various recommendations throughout the report on items such as manning levels, occupancy rate, inefficient production flows, design changes, quality control, and reduction in overhead spending.

1323. The company must manage its working capital using internal procedures laid down in other parts of the report including keeping lower stock levels, selling non moving or very slow moving item, ensuring debtors turnover in days is within the guidelines etc. This procedure will generate cash and reduce interest on borrowings.

Human resource development programme

1324. It is suggested that a western marketing expert visits the factory for one week as soon as possible. During that time practical instruction can be given and a marketing programme set up for the ensuing months.

1325. The marketing expert should then make a further visit giving the relevant staff as much feedback as possible. After this exercise the marketing and sales department should attend regular internal and external courses.

1326. It is advisable that a member of the design department attend a course in the UK on computer aided design (CAD). The cost of a CAD system has reduced steadily recently. As a medium term goal an appropriate individual should attend a course on

quality control again preferably in the West. There are many high quality courses undertaken in Poland conducted by organisations such as Solidarity. The Institute of Learning and many colleges. Many of these courses are geared to the workforce in general and a programme of courses should be devised for most employees.

Changing corporate structure, organisational structure

1327. Irrespective of the form any investment takes, the company's status needs to be altered. Technically it requires to be corrected into an entity that is wholly owned by the Treasury control would mean classification of the ownership of any assets or liabilities within the entity.

1328. A revised organisational structure is detailed in chapter 9 and should be instigated as soon as possible.

Assessment of social costs

1329. All social assets as detailed in chapters 10 and 12 should be disposed of as soon as possible. The canteen and other facilities should be made to breakeven. If they still make consistent losses, they should be subcontracted out or closed down.

Indication of whether further restructuring studies are required

1330. In our opinion we would expect a much smaller but still significant restructuring exercise to be carried out at a later date if the organisation has achieved a certain number of its major objectives. This would be because the organisation would need to refocus on a different set of goals.

1329. Once the firm has established:-

- a profitable production base
- adequate quality control procedures
- elimination of unwanted assets
- elimination of excess overheads
- restructuring of management and factory

1330. Resulting in:-

- financial stability
- reduced staff turnover and absenteeism
- additional restructuring

1331. This programme will help the organisation:-

- plan for growth
- focus on increasing profitability further, something which it will probably still find difficult due to the culture of the past
- review current and potential future areas of weakness
- look at the appropriate structure available in the light of new legislation

Restructuring plan

1332. Attached earlier in this section is the formal restructuring plan detailing the individual tasks to be performed and a formal timetable of implementation. A key has been prepared showing which individuals have been assigned the tasks and also gives an appropriate narrative.

14. LONG TERM VIABILITY OF THE RESTRUCTURED ENTERPRISE

Indicative financial projections of the restructured firm:

1. Assumptions of computer model

1401. The model has been prepared especially for the Polish situation. It has the following factors:

a/ Input is on a quarterly basis for 20 quarters, ie. 5 years. The model works for up to 10 different product groups.

b/ Sensitivity analysis can be carried out on most fields

c/ Different inflation rates can be entered for each quarter for sales materials, labour, fuel, overheads. It is important to have different inflation rates for the following reasons :

- government policy on wages is to limit item to 60% of inflation
- fuel prices are being increased step by step until they reach world levels.
- general inflation which is affected by the above and other factors giving different values

d/ Home and Export sales are treated separately. Sales are entered for each quarter. Debtors repayment period can be different for home and export. Sales price can be adjusted independent of inflation

e/ The model is sales and not production led. Therefore materials, labour and fuel are calculated on sales figure

f/ Materials, labour and power can be purchased, worked and consumed earlier than the recorded sale. The spread of costs incurred can be spread over time to a maximum of 2,5 years

g/ For the above items and taxation the receipt of money (sales) or payments can be, for each quarter, spread over a period of time. The maximum period is 2,5 years

h/ Overheads are paid for as they are incurred

i/ Tax on turnover, and income is calculated automatically and payments are spread over time, up to 2,5 years

j/ Other income is received as it is incurred

k/ The data when input results in quarterly balance sheets, profit and loss accounts and cashflow

1402. The model was built around the following assumptions and data :

a) Total manufacturing capacity is 20,000 tonnes per year (400 tonnes per week) working a full 2 shift system.

b) There are 5 categories of sales (see data tables - the same number sequence is used in the model)

- 1 bogie
- 2 new crane
- 3 old cranes
- 4 fabrications - based on materials supplied by the customer
- 5 fabrications - cutting and welding of sheet steel on materials purchased by Famabud

c) Assumes that :

- bogie market will revive due to infrastructure investment by Poland and other ex-COMECON countries. Also some exports to the West.
- new cranes will have high reasonable sales, once improvements are made in the design and fittings
- old cranes currently in stock will not have a high demand, assumed that only 7 sold next year and the rest scraped or used as spare parts for renovation of old cranes,
- fabrication and other services (materials supplied) relate to the refurbishment of old cranes and added value work such as railway carriage repair.
- fabrications using own materials relate to work subcontracted to Famabud. Mainly resulting from Famabud successfully tendering for fabrication work from western firms.
- home fabrication work relates to other Polish companies subcontracting some of their new product work to Famabud. With the changing market Polish companies will take on work for which they do not have all the facilities or manufacturing capability to complete. The work they cannot carry out themselves they will subcontract.
- fabrication work should become the major source of income in the coming years. We calculated that this work would be about 50% of turnover within a few years.

1403. The sales price has been calculated as follows :

- for bogies it is based on the current price
- for the new crane ZB-20 it is based at a price of less than 50% of its western competitors
- for the old crane it is based on 50% of current sales price
- for refurbishment of cranes it is based on an estimate of hours it will take to repair the major components
- for fabrication it is based on 2,5 DM for 1 kilo plus an estimate for material costs

1404. Material quantities were calculated by taking the current average for the bogie, the estimate for the new crane (plus 2 tonnes to compensate for current structure weakness). The fabrication unit quantity is the tone.

1405. Material prices are current estimates taking into account material mix.

1406. Labour hours for the bogies are the actual for each unit. For the new crane it is estimated from the old crane and adjusted for the weight reduction and the more dense structure.

1407. Labour costs are the current monthly salaries earned by the employees together with employers costs.

1408. Direct power and fuel is calculated by estimating the variable element and linking it to labour hours. It should be noted that the largest heating element is keeping the factory warm in the winter. This has been treated as a fixed cost.

1409. Overheads have been calculated from current expenditure. The model has a facility to reduce the real overhead element over time. This has been used to reduce the indirect labour, white collar and administration cost.

1410. Investments (fixed asset expenditure) has been estimated for the following:

a) To complete the large element painting booths 300 mln zl

b) To bring the heating ducts nearer the factory floor 60 mln zl

c) In order to be able to carry out the high quality work

from the west a CNC lathe (2.000 mln zl) and milling machine (2.200 mln zl) are required.

d) As many machines are reaching the end of their useful life and quality plant is required to carry out western subcontracts a replacement programme should be started in quarter 17. We estimate at todays real costs the replacement programme should amount to at least 2.000 mln zl per quarter

e) At present we have not included in the the cost of double glazing of the factory. This is necessary, but before it is the insulation qualities of the roof needs to be checked.

1411. Other income consists of :

a) the sale of the various properties and surplus fixed assets, stock and tools

b) the rental to Polarbox plus renting additional space until Famabud's production capacity increases

c) the rental of the factory site at Lady street., Szczecin : 402 mln zl monthly

Cashflow

1412. The cashflow is calculated automatically from the assumption tables which determine the spread of cash movements for each of the major items affecting contribution, taxation, bank interest etc. The last line of the cashflow shows the cash deficit or surplus at the end of each quarter.

Balance sheet

1413. The model shows quarterly balance sheets.

Ratio

1414. The following ratios were calculated :

Year	1	2	3	4	5
a) Gross profit (contribution)	33,11%	33,84%	36,07%	37,73%	35,41%
Operating profit	13,82%	25,78%	28,89%	30,16%	23,91%
Net profit	5,91%	11,11%	16,52%	18,18%	14,35%
		opening		closing (year 4)	
Current ratio		1,38		4,58	
Acid test		0,42		4,23	

Conclusion

1415. The company can be profitable and survive its liquidity crisis. It needs an initial cash injection of about 30.000 mln zl or USD 2,600,000 on the assumption Famabud can get a loan at a very low rate of interest. The cashflow shows the interest charged by Polish Banks. It can be seen that if Famabud do not receive a favourable loan they will need in the region of 70,000 mln zł.. This is in addition to the sale of the excess properties. If it cannot sell these assets it will need additionally USD 40,000 mln zł. The critical period is the first 12 quarters or 3 years.

1416. Further sensitivity analysis should be carried with the director of Famabud on a regular basis. This could be carried out as a part of a consultancy programme on behalf of the agency which has guaranteed the funds.

1417. It should be remembered that the model's main assumptions relate directly to the liquidity crisis. Once the company is on the road to recovery the model should be changed and the assumptions should then be based on normal operations. Assumptions that will change include repayment periods, increase in real wages etc. As long as the company is in difficulties and the Polish economy is in recession, wages and other costs will be lower than those in the West. As it is difficult to predict when there will be a general economic recovery in Poland we have assumed, for the purpose of the model, that there will not be one for at least 4 years.

1418. Therefore in reality the recovery by Famabud will not be as quick as the model indicates.

	Base units '000 meters	2 %	3 %	4 %	5 %	6 %	7 %	8 %	9 %	10 %	11 %	12 %	13 %	14 %	15 %	16 %	17 %	18 %	19 %	20 %
INFLATION percentage increase on preceeding quarte																				
Sales	100	7	14	10	11	8	10	7	7	6	7	5	3	2	3	2	2	1	1	
	100																			
Mat.import	100	not in use																		
Mat.home	100	8	15	12	13	10	12	9	9	8	9	7	5	4	5	3	2	2	3	2
Wages	100	4	8	6	7	6	8	6	6	5	6	4	2	2	3	2	2	1	1	
Energy	100	8	15	12	13	10	12	9	9	8	9	7	5	4	5	3	2	2	3	2
O'heads	100																			
Extraordinary	100	8	15	12	13	10	12	9	9	8	9	7	5	4	5	3	2	2	3	2
Capital expenditure	100	8	15	12	13	10	12	9	9	8	9	7	5	4	5	3	2	2	3	2
Sensitivity																				

PAYMENT ASSUMPTIONS

	1 %	2 %	3 %	4 %	5 %	6 %	7 %	8 %	9 %	10 %	Tot %
Opening export debtors	100										100
Export debtors	30	70									100
Opening home debtors	30	15	15	15	10	10	5				100
Home debtors	40	30	20	10							100
Turnover tax quarterly	70	30									100
Turnover tax opening	70	30									100
Debtor penalty payment	not in use										
Opening trade creditors	10	10	10	10	10	10	10	10	10	10	100
Trade creditors materials	70	30									100
Creditor penalty payment	not in use										
Wages opening creditor	100										100
Wages creditor	75	25									100
NHI/wage tax opening creditor	70	30									100
NHI & wage tax	70	30									100
NHI/wage penalty payment	not in use										
Power/fuel opening creditor	100										100
Power/fuel creditor	70	30									100
Power/fuel penalty payment	not in use										
Bank int. penalty payment	not in use										
VAT	not in use										

PURCHASE ASSUMPTIONS

	−9 %	−8 %	−7 %	−6 %	−5 %	−4 %	−3 %	−2 %	−1 %	0 %	Tota %
Materials									40	60	100
Labour									20	80	100
Power & fuel									5	95	100

	1 %	2 %	3 %	4 %	5 %	6 %	7 %	8 %	9 %	10 %	11 %	12 %	13 %	14 %	15 %	16 %	17 %	18 %	19 %	20 %
TAXATION & NHI percentage in each quarter																				
Turnover tax home sal	20	20	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
% tax home sales	10	10	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Wage	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
W–penalty	not in use																			
NHI	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
Unemployment	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Local	not in use																			
Vechicles	not in use																			
Income	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
VAT	not in use																			
Sensitivity																				
INTEREST RATES & PENALTIES																				
Annual base rates	31	55	43	39	36	32	30	27	25	21	17	13	10	9	8	6	4	4	4	4
Uplift	6	11	9	8	7	6	6	5	5	4	3	3	2	2	2	1	1	1	1	1
Interest rate	37	66	52	47	43	38	36	32	30	25	20	16	12	11	10	7	5	5	5	5
Bank interest	28	50	39	35	32	29	27	24	23	19	15	12	9	8.1	7.2	5.4	3.6	3.6	3.6	3.6
Penalty factor	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Pen. start months	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Debtor/creditor																				
Penalty factor	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Pen. start months	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Debtor % received	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Creditor % paid	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Sensitivity																				
MATERIALS VARIANCE & SCRAP																				
Variance				4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Scrap / wastage				8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
DIRECT LABOUR VARIENCE & HOLIDAYS ETC																				
Varience	10	10	5	5	2	2	1	1	1	1	1	1								
Holidays / sickness	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
STD hours / month	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173
DIRECT POWER / FUEL VARIENCE & WASTAGE ETC																				
Varience																				
Wastage																				
DEPRECIATION per qi																				
Investments	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Factory Land & Buildr	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Plant & Machinery	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Transport	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Capital assets WIP	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Other fixed assets	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Sensitivity																				

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Base units items per quarter																			
EXPORT SALES UNITS																				
1			10	30	50	50	50	50	50	50	50	50	50	100	100	300	300	300	300	300
2			10	20	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
3																				
4																				
5	50	100	150	225	275	350	450	550	700	700	800	1,000	1,200	1,400	1,600	1,600	1,600	1,600	1,600	1,600
6																				
7																				
8																				
9																				
0																				
	100	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Sensitivity																				
HOME SALES UNITS																				
1	130	130	0	100	100	200	200	200	200	200	200	250	250	250	250	350	350	350	350	350
2			10	20	25	25	25	25	30	30	30	30	30	30	30	30	30	30	30	30
3	1	1		3	3	1														
4			5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
5			10	10	15	20	20	20	20	30	45	60	75	90	100	100	125	125	150	150
6																				
7																				
8																				
9																				
0																				
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Sensitivity																				

	Base price '000 zloty	2 %	3 %	4 %	5 %	6 %	7 %	8 %	9 %	10 %	11 %	12 %	13 %	14 %	15 %	16 %	17 %	18 %	19 %	20 %
EXPORT SALES PRICES - EXCLUDING INFLATION																				
1	50,000																			
2	400,000																			
3																				
4																				
5	55,000																			
6																				
7																				
8																				
9																				
0																				
Sensitivity																				
HOME SALES PRICES - EXCLUDING INFLATION																				
1	50,000																			
2	400,000																			
3	800,000																			
4	17,000																			
5	55,000																			
6																				
7																				
8																				
9																				
0																				
Sensitivity																				

Material types

	A	B	C	D	E	F	G	H	I	J

MATERIAL QUANTITIES PER PRODUCT UNIT – STD COST

	A	B	C	D	E	F	G	H	I	J
1	2.0	1.0								
2	14.0	1.0								
3	1.0									
4										
5	1.0	1.0								
6										
7										
8										
9										
0										

MATERIAL PRICES PER STD PURCHASE – '000's zl FIRST QUARTER

	A	B	C	D	E	F	G	H	I	J
1	4,900	10,000								
2	5,100	245,000								
3										
4										
5	6,500	6,500								
6										
7										
8										
9										
0										

Direct labour processes

	A	B	C	D	E	F	G	H	I	J

DIRECT LABOUR IN MINITES FOR EACH PROCESS – STD COST 1ST QTR

	A	B	C	D	E	F	G	H	I	J
1	9,300									
2	84,000									
3										
4	19,200									
5	24,000									
6										
7										
8										
9										
0										

MONTHLY WAGES IN '000'S ZL EXCLUDING TAX & NHI 1ST QTR

	A	B	C	D	E	F	G	H	I	J
1	2,125									
2	2,250									
3	2,250									
4	2,250									
5	2,250									
6										
7										
8										
9										
0										

Power & fuel for various processes

	A	B	C	D	E	F	G	H	I	J

POWER & FUEL UNITS OF ENERGY PER PROCESS – STD UNITS

1	1,000									
2	1,000									
3	1,000									
4	1,000									
5	1,000									
6										
7										
8										
9										
0										

POWER & FUEL UNIT COSTS OF ENERGY / PROCESS – STD COSTS 1ST QTR

1	203									
2	1,842									
3										
4	126									
5	504									
6										
7										
8										
9										
0										

CHANGE IN REAL COSTS	Base price '000 zloty	2 %	3 %	4 %	5 %	6 %	7 %	8 %	9 %	10 %	11 %	12 %	13 %	14 %	15 %	16 %	17 %	18 %	19 %	20 %
OVERHEADS																				
Wages	2,251,000	−3	−3	−5	−5	−5	−3	−3	−3	−3	−3	−2	−2	−2	−2	−2	−2	−2	−2	−2
Materials sundry	312,000		5	5	5	10	10	15	15	20	20	20	25	25	20	20	20	20	20	20
Power fuel	2,739,600		−9		2	2	4	4	4	8	8	8	8	8	8	8	8	8	8	8
Plant costs	336,000		5	5	5	5	5	8	8	10	10	10	15	15	15	20	20	20	20	20
Rep. s	300,000		5	5	5	5	5	8	8	10	10	10	15	15	15	20	20	20	20	20
Other costs	374,400		5	5	5	5	5	8	8	10	10	10	15	15	15	20	20	20	20	20
Variance wastage																				
STAFF OVERHEADS																				
Administration	1,964,000		−8	−8	−5	−5	−5													
Selling costs	40,000		10	10	30	60	70	70	70	70	50	50	40	30	10	10	5	5	5	5
Bank charges	1,020,000		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Other costs	890,000		5	5	5	5	5	8	8	10	10	10	15	15	15	20	20	20	20	20
Variance																				
DIVIDENDS EXTRAORDINARY																				
Income extraordinary			2,000	30,000	1,000	1,000	1000	1000	1000											
Expenses extraordinary																				
Dividends																				
Variance																				

	1 mln zł	2 mln zł	3 mln zł	4 mln zł	5 mln zł	6 mln zł	7 mln zł	8 mln zł	9 mln zł	10 mln zł	11 mln zł	12 mln zł	13 mln zł	14 mln zł	15 mln zł	16 mln zł	17 mln zł	18 mln zł	19 mln zł	20 mln zł	Total mln. zł
TANGIBLE ASSETS INVESTMENT EXCLUDING INFLATION																					
Investments																					
Factory Land & Buildings																					
Plant & Machinery				50	350	1,500		1,500		2,000		2,200	1,500		4,000	6,000			4,000	4,000	27,100
Transport																					
Capital assets WIP																					
Other fixed assets																					
Total				50	350	1,500		1,500		2,000		2,200	1,500		4,000	6,000			4,000	4,000	27,100
LOANS & REPAYMENTS																					
One																					
Two																					
Three																					
Four																					
Five																					
Opening repayment				(198)	(198)			(198)	(198)	(198)											(990)
Total				(198)	(198)			(198)	(198)	(198)											(990)
OTHER INCOME																					
One																					
Two	1,200	1,284	1,464	1,610	1,787	1,930	2,123	2,272	2,431	2,577	2,757	2,895	2,982	3,041	3,133	3,195					36,682
Three			1,464	1,610	1,787	1,930	2,123	2,272	2,431	2,577	2,757	2,895									21,846
Four				1,610	1,787	1,930	2,123	2,272	2,431	2,577											14,730
Five																					
Six																					
Total	1,200	1,284	2,928	4,830	5,362	5,791	6,370	6,816	7,293	7,730	5,514	5,790	2,982	3,041	3,133	3,195					73,259

QUARTERLY PROFIT & LOSS ACCOUNT

	1 mln zl	2 mln zl	3 mln zl	4 mln zl	5 mln zl	6 mln zl	7 mln zl	8 mln zl	9 mln zl	10 mln zl	11 mln zl	12 mln zl	13 mln zl	14 mln zl	15 mln zl	16 mln zl	17 mln zl	18 mln zl	19 mln zl	20 mln zl	Total mln zl
Export sales	2,750	5,885	15,552	29,351	44,123	54,288	69,448	84,722	107,365	113,807	134,411	167,669	200,032	238,250	274,114	306,224	312,349	315,472	318,627	318,627	3,113,068
Home sales (+tax)	7,446	7,967	6,639	22,927	29,041	37,630	39,893	42,685	49,968	54,218	60,022	71,526	75,845	79,578	83,488	99,271	105,215	106,267	111,368	111,368	1,202,362
	10,196	13,852	22,192	52,279	73,164	91,918	109,341	127,408	157,333	168,025	194,433	239,195	275,877	317,828	357,602	405,495	417,564	421,739	429,995	429,995	4,315,430
Turnover tax	(146)	(156)	(376)	(1,298)	(1,644)	(2,130)	(2,258)	(2,416)	(2,828)	(3,069)	(3,397)	(4,049)	(4,293)	(4,504)	(4,726)	(5,619)	(5,956)	(6,015)	(6,304)	(6,304)	(67,488)
TURNOVER A	10,050	13,696	21,816	50,981	71,520	89,788	107,083	124,991	154,505	164,956	191,035	235,146	271,584	313,324	352,876	399,876	411,608	415,724	423,691	423,691	4,247,942
Direct materials	3,224	4,184	10,935	28,487	42,123	51,661	60,079	68,477	83,498	90,530	103,091	122,264	137,648	156,210	173,909	201,287	206,549	210,680	218,300	222,666	2,195,800
Direct labour/tax	1,047	1,650	2,808	5,310	6,991	9,029	11,128	13,293	16,765	17,741	20,807	26,012	30,498	35,636	40,903	43,959	45,359	45,812	46,801	46,801	468,349
Direct power/tax	52	93	152	306	439	588	756	930	1,209	1,318	1,594	2,049	2,481	2,955	3,455	3,767	3,886	3,964	4,129	4,212	38,321
DIRECT COSTS B	4,323	5,917	13,894	34,103	49,552	61,277	71,962	82,700	101,472	109,589	125,492	150,325	170,626	194,801	218,266	249,013	255,794	260,456	269,230	273,678	2,702,470
CONTRIBUTION A−B=C	5,727	7,779	7,922	16,878	21,967	28,510	35,120	42,291	53,033	55,368	65,544	84,822	100,958	118,523	134,610	150,863	155,814	155,268	154,461	150,013	1,545,472
OTHER INCOME	1,200	1,284	2,928	4,830	5,362	5,791	6,370	6,816	7,293	7,730	5,514	5,790	2,982	3,041	3,133	3,195					
Salaries +tax/NHI	3,714	3,754	3,947	3,975	4,025	4,069	4,263	4,366	4,472	4,546	4,657	4,746	4,763	4,761	4,806	4,804	4,802	4,753	4,705	4,611	88,541
Maintenance	312	312	328	344	361	397	437	500	578	694	832	999	1,248	1,561	1,873	2,247	2,697	3,236	3,883	4,660	27,500
Power/fuel	2,740	2,740	2,433	2,433	2,543	2,594	2,698	2,805	2,916	3,151	3,403	3,675	3,969	4,287	4,630	5,000	5,400	5,832	6,299	6,803	76,473
Plant costs	336	336	353	370	389	408	429	463	500	550	605	666	786	880	1,013	1,215	1,158	1,750	2,100	2,519	17,106
Repairs	300	300	315	331	347	365	383	414	447	491	540	594	684	786	904	1,085	1,302	1,562	1,875	2,250	15,273
Other costs	374	374	393	413	433	455	478	516	557	613	674	742	853	981	1,128	1,354	1,625	1,950	2,340	2,807	19,061
	7,776	7,816	7,829	7,926	8,099	9,288	8,687	9,067	9,472	10,046	10,712	11,423	12,283	13,256	14,353	15,705	17,284	19,083	21,209	23,650	243,955
Depreciation	2,809	2,809	2,809	2,812	2,834	2,937	2,937	3,064	3,064	3,263	3,263	3,518	3,700	3,700	4,232	5,053	5,053	5,053	5,640	6,239	74,790
FACTORY OVERHEADS D	10,585	10,625	10,638	10,737	10,933	11,225	11,624	12,131	12,536	13,308	13,975	14,940	15,984	16,957	18,585	20,759	22,337	24,136	26,841	29,888	318,745
FACTORY PROFIT C−D=E	(3,658)	(1,562)	212	10,971	18,397	23,076	29,866	38,976	47,789	49,790	57,083	75,671	87,956	104,607	119,157	133,300	133,477	131,132	127,621	120,124	1,299,985
Administration	1,964	1,964	1,807	1,662	1,579	1,500	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425	30,430
Selling costs	40	40	44	48	63	101	171	291	495	841	1,261	1,892	2,649	3,443	3,787	4,166	4,375	4,593	4,823	5,064	38,187
Bank charges	1,020	1,020	1,122	1,234	1,358	1,493	1,643	1,807	1,988	2,186	2,405	2,646	2,910	3,201	3,521	3,873	4,261	4,687	5,156	5,671	53,202
Other costs	890	890	935	981	1,030	1,082	1,136	1,227	1,325	1,457	1,603	1,763	2,028	2,332	2,862	3,218	3,862	4,634	5,561	6,674	45,311
STAFF OVERHEADS	3,914	3,914	3,907	3,926	4,030	4,176	4,375	4,750	5,232	5,910	6,695	7,726	9,012	10,402	11,416	12,683	13,923	15,340	16,965	18,834	167,131
TOTAL OVERHEADS F	18,822	20,456	28,439	48,767	64,515	76,679	87,961	99,581	119,241	128,807	146,161	172,991	195,622	222,160	248,268	282,455	292,054	299,932	313,035	322,401	3,188,346
OPERATING PROFIT E−F=G	(7,572)	(5,476)	(3,695)	7,044	12,366	18,900	25,491	32,226	42,557	43,880	50,388	67,945	78,944	94,206	107,741	120,616	119,554	115,792	110,656	101,290	1,132,854
Taxation					1,067	7,560	10,197	12,890	17,023	17,552	20,155	27,178	31,578	37,682	43,096	48,246	47,822	46,317	44,262	40,516	453,142
Interest received	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Interest paid		5,096	6,074	4,031	5,058	5,403	5,855	5,448	5,177	4,117	2,905	1,924	1,373	863	123	(319)			(12)	(12)	53,105
TAXATION/INTEREST H		5,096	6,074	4,031	6,125	12,963	16,052	18,339	22,200	21,689	23,061	29,102	32,951	38,545	43,219	47,927	47,822	46,317	44,250	40,504	506,247
NET PROFIT G−H=I	(7,572)	(10,572)	(9,769)	3,013	6,241	5,937	9,439	13,887	20,357	22,211	27,328	38,843	45,993	55,661	64,522	72,689	71,733	69,475	66,405	60,786	626,607
Income extraordinary		(2,000)	(30,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)													(37,000)
Expenses extraordinary																					
Dividends																					
DIVIDENDS/EXTRAORDINARY J		(2,000)	(30,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)													(37,000)
RETAINED EARNINGS I−J=K	(7,572)	(8,572)	20,231	4,013	7,241	6,937	10,439	14,887	20,357	22,211	27,328	38,843	45,993	55,661	64,522	72,689	71,733	69,475	66,405	60,786	663,607
	(7,572)	(16,143)	4,087	8,100	15,341	22,278	32,717	47,605	67,982	90,172	117,500	156,343	202,337	257,997	322,519	395,208	466,941	536,416	602,821	663,607	

RATIOS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Contribution/Sales %	56.99%	56.80%	36.31%	33.11%	30.72%	31.75%	32.80%	33.84%	34.32%	33.57%	34.31%	36.07%	37.17%	37.83%	38.15%	37.73%	37.85%	37.35%	36.46%	35.41%
Operating P/Sales %	−75.34%	−39.98%	−16.94%	13.82%	17.29%	21.05%	23.81%	25.78%	27.54%	26.60%	26.38%	28.89%	29.07%	30.07%	30.53%	30.16%	29.05%	27.85%	26.12%	23.91%
Net Profit/Sales %	−75.34%	−77.19%	−44.78%	5.91%	8.73%	6.61%	8.81%	11.11%	13.18%	13.46%	14.31%	16.52%	16.94%	17.76%	18.28%	18.18%	17.43%	16.71%	15.67%	14.35%

Arnold Hill

QUARTERLY CASHFLOW

	1 minzl	2 minzl	3 minzl	4 minzl	5 minzl	6 minzl	7 minzl	8 minzl	9 minzl	10 minzl	11 minzl	12 minzl	13 minzl	14 minzl	15 minzl	16 minzl
Export sales	825	3,691	8,785	19,692	33,783	47,172	58,836	74,030	91,515	109,298	119,988	144,388	177,378	211,498	249,009	283,747
Home sales + tax	2,978	5,421	6,535	13,501	20,619	29,014	35,347	39,472	44,534	49,204	54,536	62,458	69,222	74,892	79,590	88,255
Other income	1,200	1,284	2,928	4,830	5,362	5,791	6,370	6,816	7,293	7,730	5,514	5,790	2,982	3,041	3,133	3,195
Cash recieved	5,003	10,395	18,248	38,023	59,764	81,977	100,553	120,318	143,342	166,232	180,039	212,636	249,582	289,431	331,732	375,197
Expenditure																
Turnover tax	9,316	4,102	310	1,021	1,540	1,984	2,220	2,369	2,705	2,997	3,299	3,853	4,220	4,441	4,659	5,351
Direct materials	3,815	5,901	14,634	29,146	42,339	52,301	60,915	71,171	82,763	92,781	106,198	123,120	140,076	157,825	178,389	07,832
Direct labour	7,572	1,032	1,789	3,068	4,218	5,416	6,687	8,110	9,829	10,913	12,712	15,542	18,407	21,453	24,429	26,399
Wage tax & NHI	404	657	1,135	1,948	2,707	3,480	4,305	5,224	6,330	7,066	8,194	10,002	11,874	13,843	15,784	17,106
Power & fuel	1,394	76	138	266	406	551	714	890	1,133	1,297	1,531	1,934	2,374	2,838	3,323	3,682
Materials sundry	312	312	328	344	361	397	437	503	578	694	832	999	1,248	1,561	1,873	2,247
Power/fuel	2,740	2,740	2,493	2,493	2,543	2,594	2,698	2,805	2,918	3,151	3,403	3,675	3,969	4,287	4,630	5,000
Plant costs	336	336	353	370	389	408	429	463	500	550	605	666	766	880	1,013	1,215
Repairs	300	300	315	331	347	365	383	414	447	491	540	594	684	786	904	1,085
Other costs	374	374	393	413	433	455	478	516	557	613	674	742	853	981	1,128	1,354
Salaries	2,251	2,275	2,392	2,409	2,440	2,466	2,583	2,646	2,711	2,755	2,822	2,877	2,887	2,886	2,913	2,912
Tax/NHI salaries	1,463	1,479	1,555	1,566	1,586	1,603	1,679	1,720	1,762	1,791	1,835	1,870	1,876	1,876	1,893	1,893
Administration	1,964	1,964	1,807	1,662	1,579	1,500	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425	1,425
Selling costs	40	40	44	48	63	101	171	291	495	841	1,261	1,892	2,649	3,443	3,787	4,166
Bank charges	1,020	1,020	1,122	1,234	1,358	1,495	1,643	1,807	1,988	2,186	2,405	2,646	2,910	3,201	3,521	3,873
Other costs	890	890	935	981	1,030	1,082	1,136	1,227	1,325	1,457	1,603	1,763	2,028	2,332	2,682	3,218
Taxation					1,067	7,560	10,197	12,890	17,023	17,552	20,155	27,178	31,578	37,682	43,096	48,246
Income extraordinary		(2,000)	(30,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)								
Expenses extraordinar																
Dividends																
Capital expenditure				70	550	2,594		3,166		4,970		6,376	4,565		13,292	20,536
	34,191	21,499	(259)	46,371	63,958	85,350	97,098	116,637	134,487	153,530	169,496	207,155	234,388	261,740	308,742	347,541
Net cashflow - quarter	(29,188)	(11,104)	18,507	(8,347)	(4,194)	(3,373)	3,455	3,681	8,855	12,702	10,542	5,481	15,194	27,691	22,990	27,657
Opening cash	590	(30,886)	(47,086)	(34,653)	(47,230)	(56,680)	(65,456)	(67,857)	(69,822)	(66,342)	(57,955)	(50,317)	(46,760)	(32,939)	(6,111)	16,757
	(28,598)	(41,990)	(28,579)	(43,001)	(51,424)	(60,053)	(62,002)	(64,176)	(60,967)	(53,640)	(47,412)	(44,836)	(31,566)	(5,248)	16,879	44,413
Interest received	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Interest paid	(2,288)	(5,096)	(6,074)	(4,031)	(5,058)	(5,403)	(5,855)	(5,448)	(5,177)	(4,117)	(2,905)	(1,924)	(1,373)	(86)	(123)	319
Loans & repayments				(198)	(198)			(198)	(198)	(198)						
Closing cash	(30,886)	(47,086)	(34,653)	(47,230)	(56,680)	(65,456)	(67,857)	(69,822)	(66,342)	(57,955)	(50,317)	(46,760)	(32,939)	(6,111)	16,757	44,732

Bilans według wzorów zachodnich	English Balance Sheet	1-7-1991 mln zł	3/91 mln zł	4/91 mln zł	2/92 mln zł	3/92 mln zł	4/92 mln zł	1/93 mln zł	2/93 mln zł	3/93 mln zł	4/93 mln zł	1/94 mln zł	2/94 mln zł	3/94 mln zł	4/94 mln zł	1/95 mln zł	2/95 mln zł
MAJĄTEK TRWAŁY	TANGIBLE ASSETS																
Inwestycje	Investments	16	15	15	13	13	12	12	11	10	10	9	8	8	7	6	6
Budynki i budowle prod	Factory Land & Buildings	134 227	132 885	131,542	128,858	127,516	126,173	124,831	123,489	122,147	120,804	119,462	118,120	116,777	115,435	114,093	112,751
Maszyny i urządzadzenia	Plant & Machinery	35 028	33,627	32 226	29,490	28,615	29,676	28,149	29,659	28,002	31,117	29,262	33,528	35,800	33,507	43,974	60,865
Transport	Transport	1,008	968	927	847	805	766	726	685	645	605	564	524	484	444	403	363
	Capital assets WIP	601	577	553	505	481	457	433	409	385	361	337	313	288	264	240	216
	Other fixed assets	10	10	9	8	8	8	7	7	6	6	6	5	5	4	4	4
		170 890	168,081	165 272	159 722	157,438	157,094	154,157	154,259	151,195	152,902	149,640	152 498	153 362	149,662	158 721	174,204
MAJĄTEK PŁYNNY	CURRENT ASSETS																
Materiały	Raw Materials	6 445	6 445	6 445	6 445	6 445	6 445	6 445	6 445	6 445	6 445	6 445	6 445	6 445	6 445	6 445	6 445
Produkcja w toku	Work in Progress	17 574	17 574	17 574	17,574	17,574	17,574	17,574	17,574	17 574	17,574	17 574	17 574	17 574	17 574	17 574	17 574
Wyroby gotowe	Finished goods	5 314	5 314	5 314	5 314	5 314	5 314	5 314	5 314	5 314	5 314	5 314	5 314	5 314	5 314	5 314	5 314
	Purchases for resale																
Należności ze sprzedaży wyr	Debtors export		1 925	4 120	20,546	30,886	38,001	48,614	59,306	75,156	79,665	94,087	117,368	140,023	166 775	191 880	214 357
Należności ze sprzedaży wyr	Debtors home + tax	11 296	8 417	7 014	16,545	24,967	33,583	38,129	41,342	46,776	51 790	57,275	66,344	72 967	77 653	81,551	92,566
Inne należności	Other Debtors	1 051	1 051	1 051	1 051	1,051	1,051	1,051	1,051	1,051	1,051	1 051	1,051	1,051	1 051	1 051	1 051
	Dividends & prepayments																
Rachunek bankowy	Bank	590														16 757	44 732
Kasa	Cash in Hand																
		42,270	40,726	41,518	67,475	86,237	101,969	117,126	131,032	152,315	161,839	181,747	214,096	243,374	274,812	320,571	382,040
PASYWA PŁYNNE	CURRENT LIABILITIES																
Pożyczka bankowa	Bank overdraft	8 613	30 886	47 086	47 230	56 680	65 456	67,857	69 822	66 342	57 955	50 317	46 760	32 939	6 111		
	Bills of exchange																
Zobowiązania z tytułu dostaw	Trade creditors	13 163	1 082	2 065	10 182	13,781	16,508	19,031	22 346	25 893	28,666	33 228	38 525	43 522	48,987	55,458	61 018
	Turnover tax		3 993	47	389	493	639	677	725	849	921	1,019	1 215	1,288	1,351	1,418	1,686
	Govt budget tax	6 914	6 914	6 914	6 914	6 914	6,914	6,914	6,914	6,914	6,914	6,914	6 914	6 914	6 914	6 914	6 914
	Wages not paid		177	285	856	1,121	1 432	1,752	2,119	2,570	2,781	3 310	4 077	4 777	5,559	6,290	6 703
	NHI & tax not paid	1 354	138	222	667	874	1 117	1,366	1,653	2,004	2,169	2,582	3 180	3 726	4,336	4,906	5,228
	Power & fuel		16	26	94	134	179	229	283	364	400	485	621	751	894	1,041	1,132
Pozostałe zobowiązania	Other Creditors	674	674	674	674	674	674	674	674	674	674	674	674	674	674	674	674
		30 718	43 880	57 319	67 006	80 672	92 919	98 501	104 536	105 610	100 479	98 530	101 966	94 591	74 826	76 701	83 354
MAJĄTEK PŁYNNY NETTO	NET CURRENT ASSETS	11 552	(3 154)	(15 802)	469	5,565	9,050	18,625	26,496	46,705	61,359	83,217	112,130	148 783	199,986	243,870	298,686
		182 442	164 927	149 471	160 190	163,003	166,144	172 783	180,755	197,901	214,262	232,857	264,628	302 145	349,648	402 591	472 890
PASYWA TRWAŁE	LONG TERM LIABILITIES																
Pożyczka bankowa	Bank loan	(990)			198	396	396	396	594	792	990	990	990	990	990	990	990
AKTYWA NETTO OGÓŁEM	TOTAL NET ASSETS	181 452	164 927	149 471	160 388	163 399	166,540	173,179	181,349	198,693	215,252	233,847	265,618	303 135	350,638	403,581	473,880
POKRYTE	REPRESENTED BY																
Fundusz założycielski	Sholders funds govt	40 271	40 271	40 271	40,271	40,271	40,271	40,271	40,271	40,271	40,271	40,271	40,271	40,271	40,271	40 271	40,271
Rezerwy	Reserves	141 054	124 529	109 073	119,990	123 001	126 142	132 781	140,951	158,295	174,854	193,448	225,220	262 737	310,240	363,183	433,482
Zysk netto	Profit & loss a c	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127
		181,452	164 927	149,471	160,388	163,399	166,540	173,179	181,349	198,693	215,252	233,847	265,618	303,135	350,638	403,581	473,880

Current ratio		1 38	0 93	0 72	1 01	1 07	1 10	1 19	1 25	1 44	1 61	1 84	2 10	2 57	3 87	4 18	4 58
Quick ratio		0 42	0 26	0 21	0 57	0 71	0 78	0 89	0 97	1 16	1 32	1 55	1 81	2 26	3 28	3 80	4 23
Creditors t over days			23 61	17 23	22 06	24 34	25 07	25 36	24 42	26 10	25 37	24 80	25 54	25 42	25 70	25 14	26 96
Trade Debtors t over days			68 90	46 57	47 32	56 78	61 00	63 33	59 44	67 45	62 79	58 74	61 73	62 03	63 21	62 40	68 04

(3 of 4)

RESTRUCTURING STRATEGY ACTION PLAN

for

ZREMB - FAMABUD

UNIDO

PILOT RESTRUCTURING PROJECT

project No TF/HUL/[illegible]

Arnold Hill Sp. z o.o.
Chartered Accountants

REPORT TO UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION ON THE PILOT RESTRUCTURING PROJECT ZREMB-FAMABUD

FINAL REPORT

PART VI APPENDICES

A/ General information on Company
1. Plan of factories, social facilities
2. Summary of plant and machinery
3. Sample of process planning sheets
4. Typical organisational chart

B/ Curricula vitae of management
1. Managing director
2. Production director
3. Technical manager
4. Department managers c.v.

C/ Initial schedule of companies which were circulated.

D/ Financial report to management for the month of June 1991

E/ Report of make up of cost of sales figure in June 1991 management accounts

F/ Internally generated forecast for the period to 31.12.1995

G/ Analysis of sales/production plan for the period 1st July 1991 to 31st December 1991

H/ Report on cost analysis for the three years to 31st December 1990 and for the five months

I/ Notes made by Mr Anstiss. the senior engineer on the assignment. Assessment of the manufacturing facility, supporting services and operational analysis.

J/ Summary of valuation of land and buildings
1. copy of valuation of second site at Szczecin - at Łady
2. copy of valuation of site at Łobzie
3. copy of valuation of site at Dziwnówek
4. copy of valuation of site at Sieraków

K/ Financial condition and performance - further detailed analysis

L/ Specification sheets
1. specification sheet for ZB-75/100
2. specification sheet for ZB-120/200
3. specification sheet for prototype ZB-1000
4. specification for prototype, ZB-20
5. extract from Cranes Today handbook - Other manufacturers with similar cranes to the prototype

M/ Legal analysis on Zremb-Famabud

N/ Copy of application to the Minister of Trade and Industry to guarantee financial help.

Appendix A

The attached photographs were taken from the following viewpoints

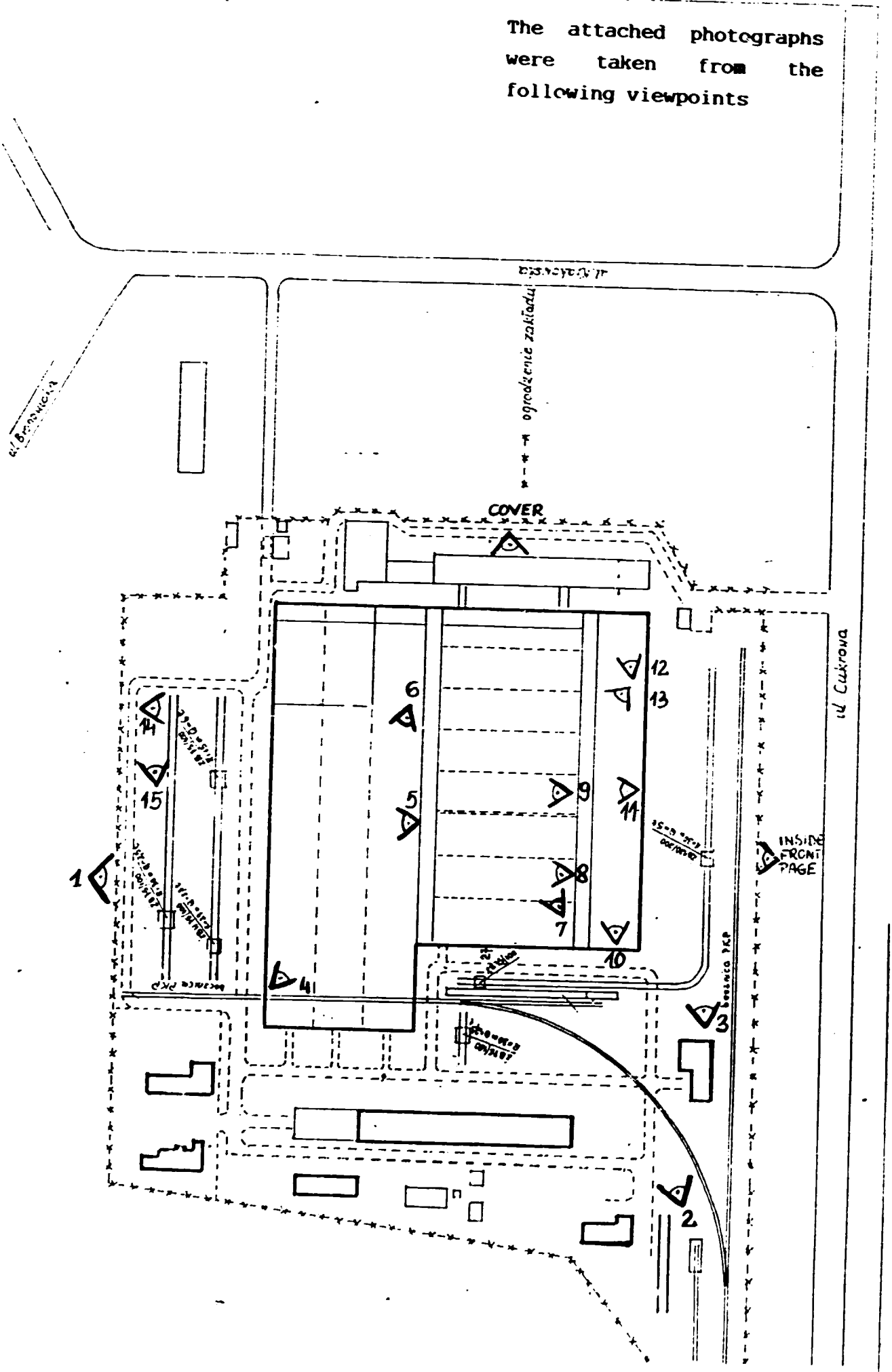


Photo 1

FAMABUD's Main Factory site
at Cukrowa Str. SZCZECIN

original contains
color illustrations

original co
color illus

The factory as seen from the front of the factory complex. The photograph shows in the foreground part of the tower crane finished goods stock. Between the building and finished goods is the raw material stock mainly of metal, pipes and angle iron. The one crane in the photograph was made by Famabud and adapted for handling the raw material and finished goods stock.

Photo 2

Shows the back of the factory complex. The chimneys are part of the paint extraction process. On the extreme left is the store and on the extreme right the transport and maintenance sheds. In the fore ground is a rail spur which is used for loading and unloading wagons. There is also a platform /ramp to assist in the loading and unloading.

Photo 3 Taken from the corner of the factory building showing the fume extractors for the paintshop and one Famabud crane which is used for loading and unloading from trains. This side of the building has the paint spraying and drying bays. It also has a multilevel store for tools equipment etc.

Photo 4 Shows the first bay in the production process. At the far end is the shot blast machine, in the middle the gilotine to cut the sheet steel and in the foreground is part of the forge.

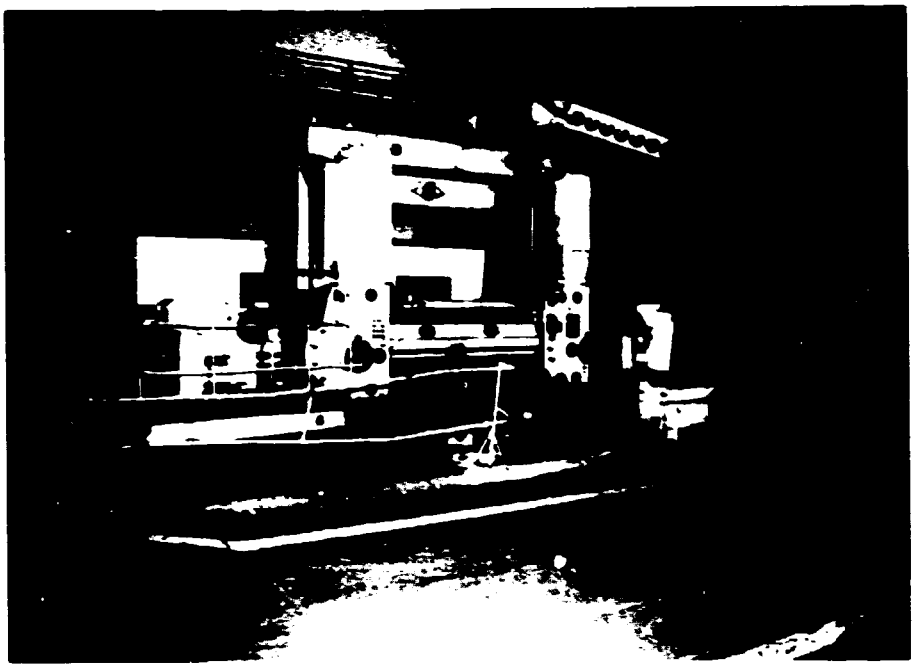


Photo 5 Shows the ring cutting machine which is in the third hall which has the most of the small and medium sized milling machines.

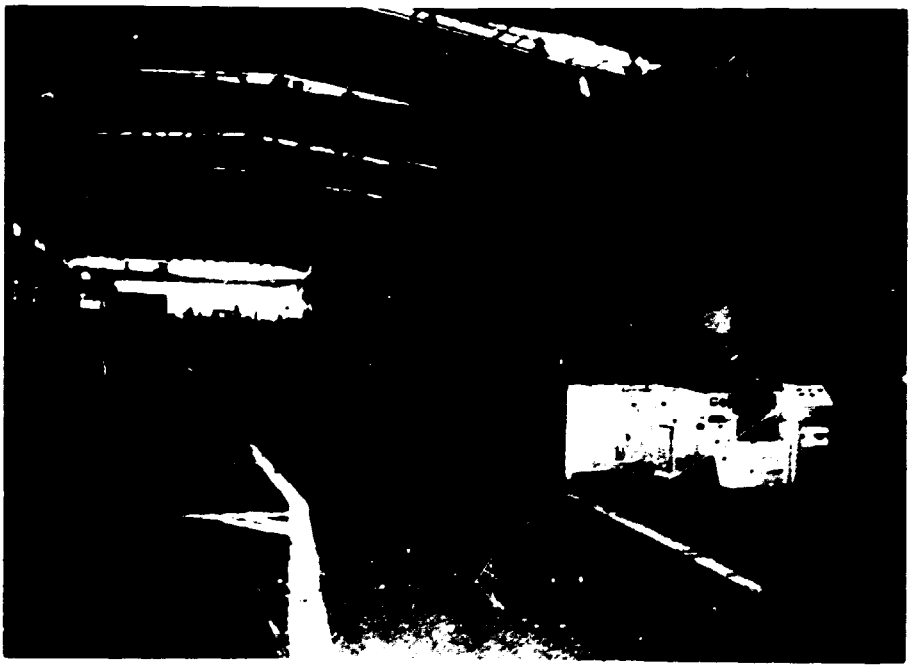


Photo 6 Shows the third hall in more detail. The photograph was taken from the centre of the hall. The ring cutting machine is in the centre of the photograph. On the right is a thread cutting machine for bolts and screws.

Photo 7 The main hall with 8 bays.

In the foreground the main milling, turning and gear ring cutting machines. This bay is shown in more detail in photograph 8. On the left in the above photograph in the glass booth is the gear cutting machine for the large rings. Next to it is the teeth cutting machine for the large rings. Futher the main hall are the welding and assembly areas. Photograph 9 on the next page shows one of these bays which is used for finishing the bogies.

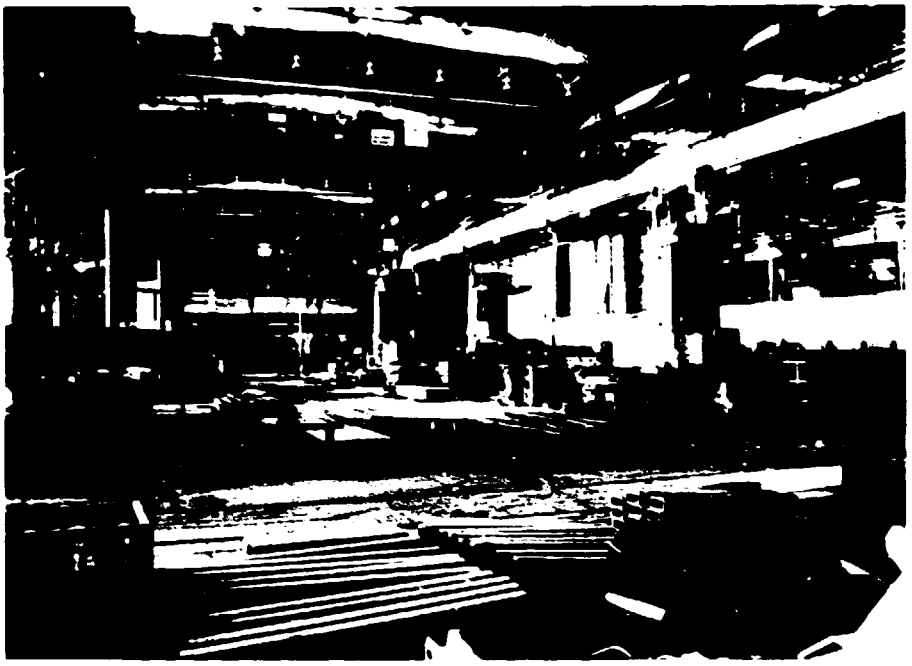


Photo 8

Shows the area where the heavy machined components are prepared.

Photo 9

Shows the main bay where the bogie welding is completed and the special machine which "faces" all the critical parts in one action.

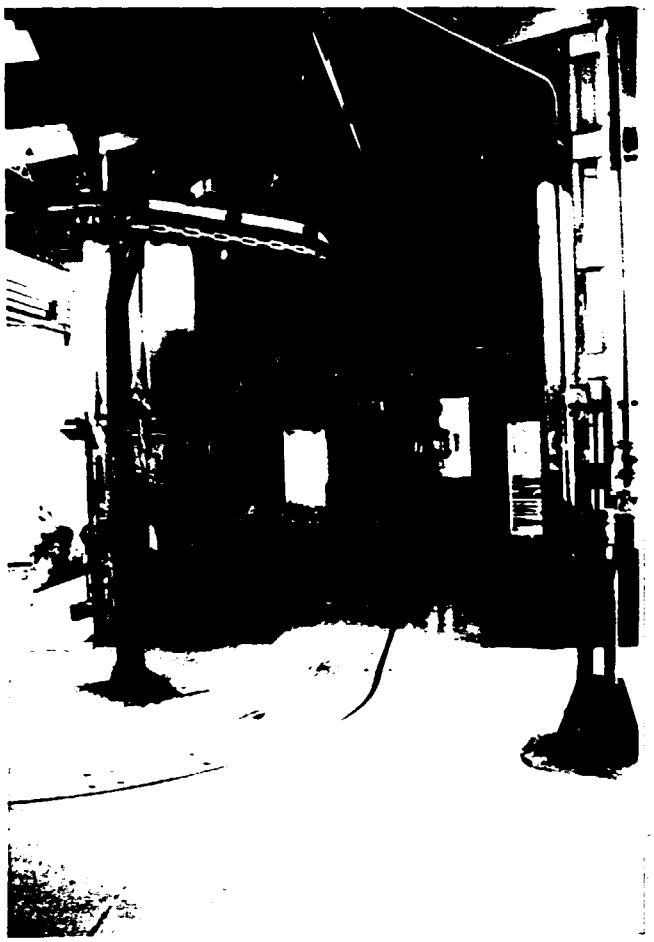


Photo 10

shows the first spraying booth. It has both overhead and floor system for a continuous flow of work. In the background is the first drying bay. Its doors are open to show the hall behind it.

Photo 11

shows the second paint booth which is just after the first and to the left of it. The overhead and floor conveyor system show the left and turn from one booth to the next. In the background can be seen one trolley which runs on the floor conveyor system.

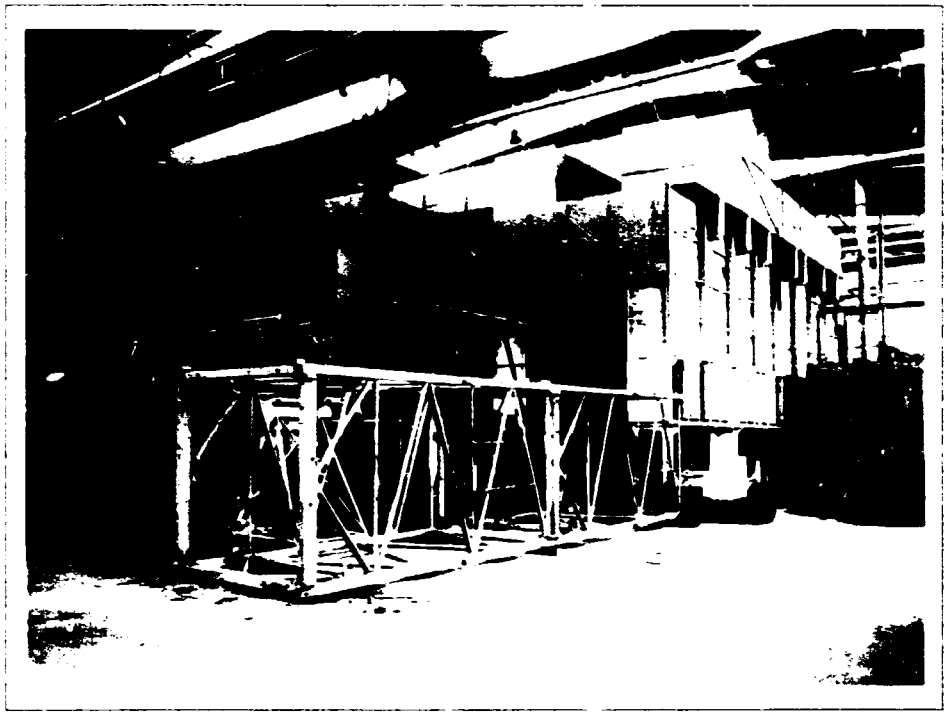


Photo 12 Shows the two paint booths for crane sections which have not been completed.

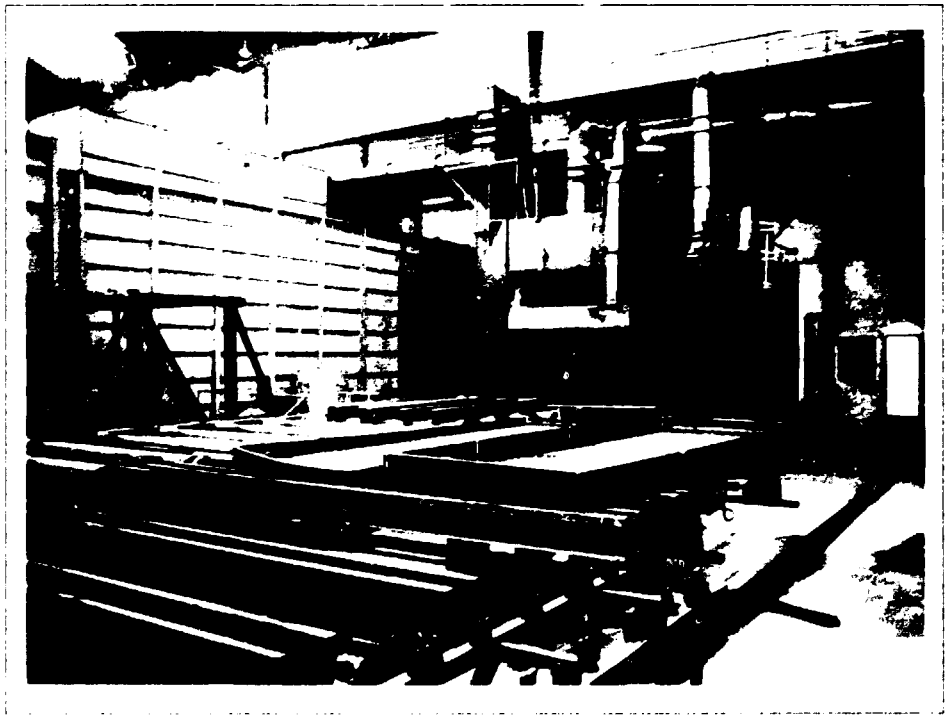


Photo 13 Shows the second shot blast machine in the main paint shop. It is used for cleaning items prior to painting.

Photo 14 Shows part of the prototype self-erecting crane with the jib and the central vertical moving section of the tower removed. Behind the prototype is a corner of the factory building. The canteen facilities can be seen on the left of the photograph.

Photo 15 Shows the jib of the prototype self-erecting crane. Behind the crane is the main gate and in the centre is workers hostel. On the right of the photograph is a standard residential block of flats which Famabud cranes were used to erect.

FAMABUD site at Lady str. in SZCZECIN

Photo 16 Shows the front of the factory. The entrance gate which is not in the photograph is on the left. Part of Szczecin can be seen on the left which indicates that the factory is in the centre of the town.

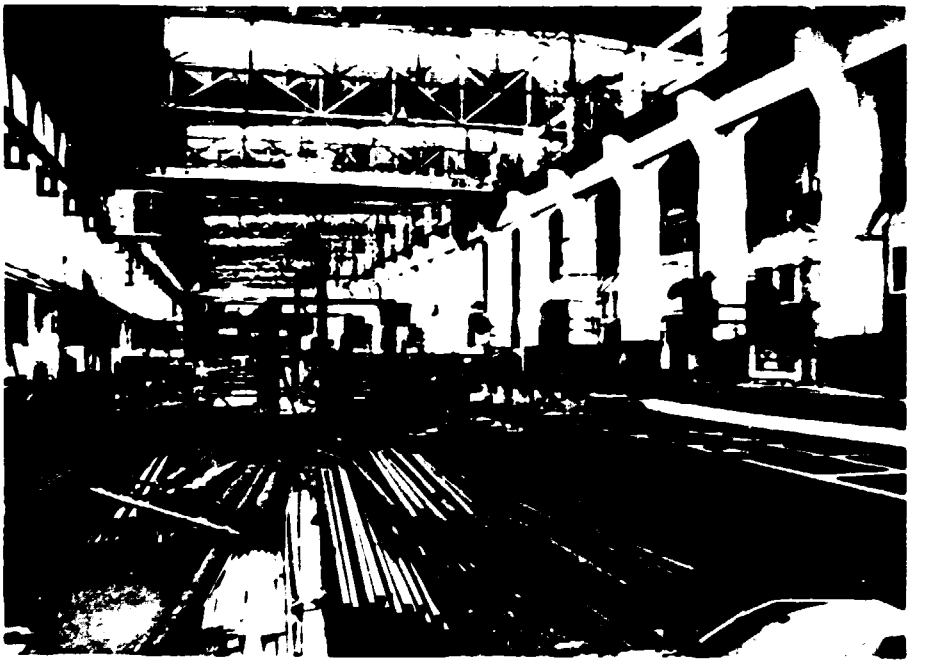


Photo 17 Shows one of the two bays. The second bay can be seen on the right of the photograph. The photograph was taken from the near end of the factory, see 16

FAMABUD site at Lady str. in SZCZECIN

Photo 18 Shows the land belonging to the factory with a Famabud crane on it. Right of photograph (not seen) is a dock yard with access to loading facilities. The river and the dock are to the right of the photograph.

Photo 19 Shows the outside of the office and store facilities which run along the side of the second bay. The internal windows can be seen in photo 17. The land in front of the building is part of the site. The photo was taken in front of the dock.

FAMABUD factory site at LOBEZ

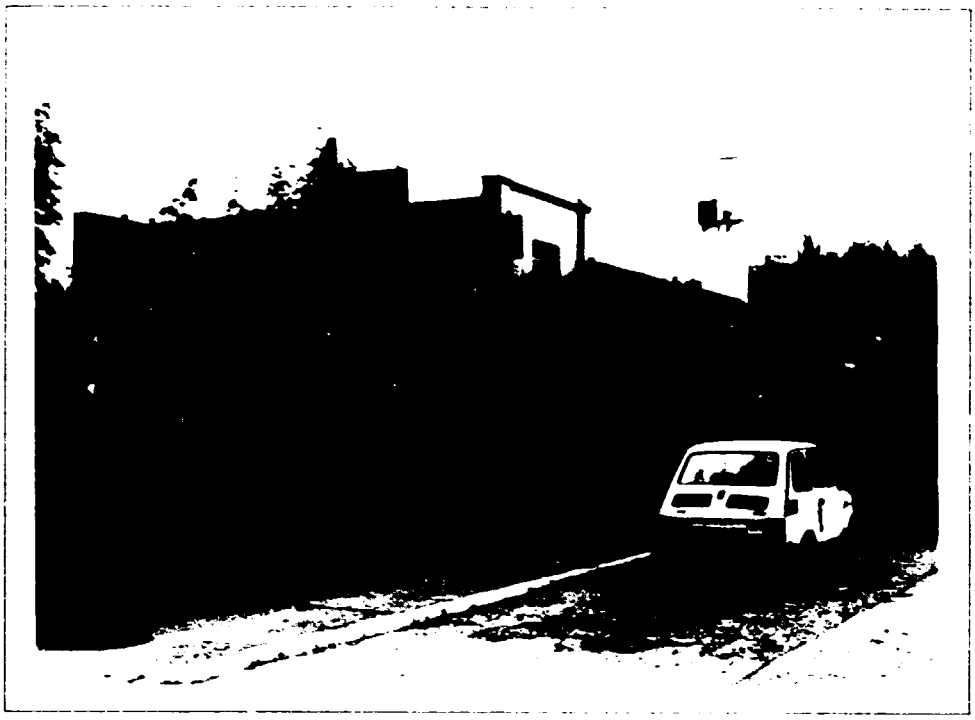


Photo 20 Shows the main gate at the factory site in LOBEZ

Photo 21 Shows a view from the back of the site looking at the main gate.

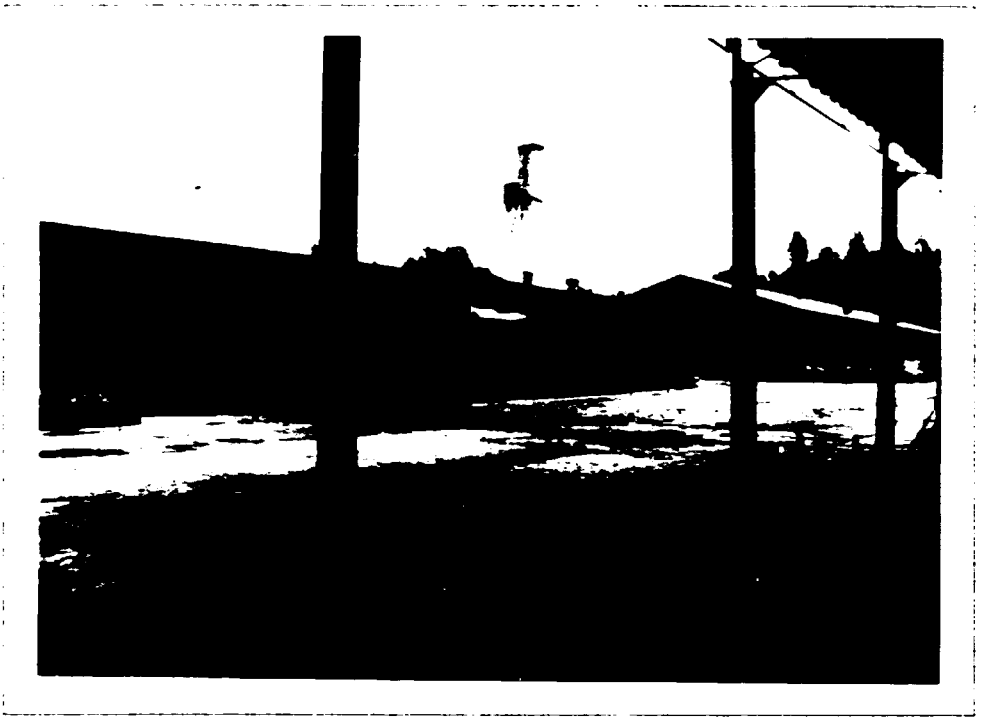
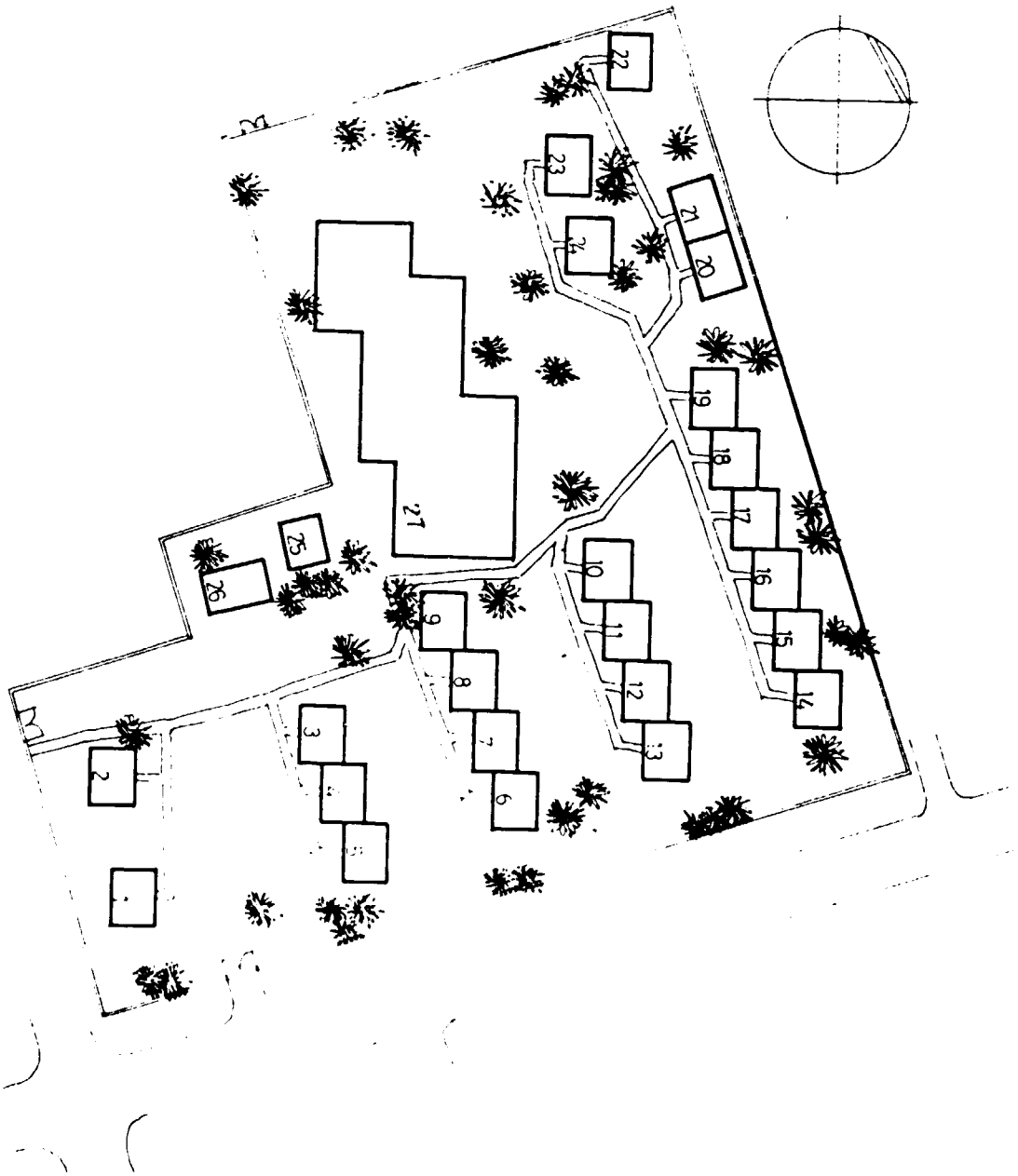


Photo 22 Shows a view of the main buildings taken from near the gate.

Photo 23 Shows the building which is on the right on photograph 22

1 – [illegible]
[illegible] – [illegible]
3-24 – [illegible]
25-26 – STORAGE
27 – CANTEEN



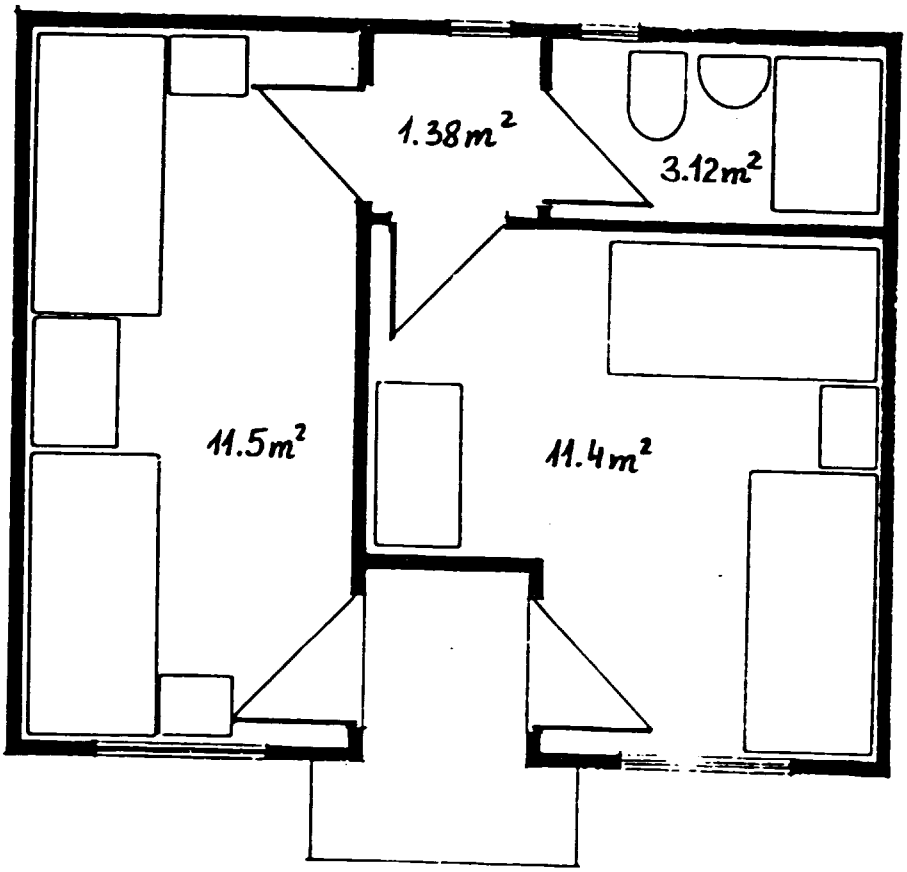
Recreational centre at DZIWNOWEK

Photo 24 Shows the new canteen, entertainment hotel and social facilities on the site. These facilities are also open to the general public.

Photo 25 Shows some of 2 bedroom holiday chalets. In the foreground is part of the children play facilities and in the background is the new social centre

App. A

PLAN OF THE CHALET AT DZIWNÓWEK



LEGEND

1-7 - BUNGALOWS
8 - WATER SUPPLY STATION
9 - MULTIFUNCTION BUILDING
10 - TOOL SHED
11 - GARDEN SHED

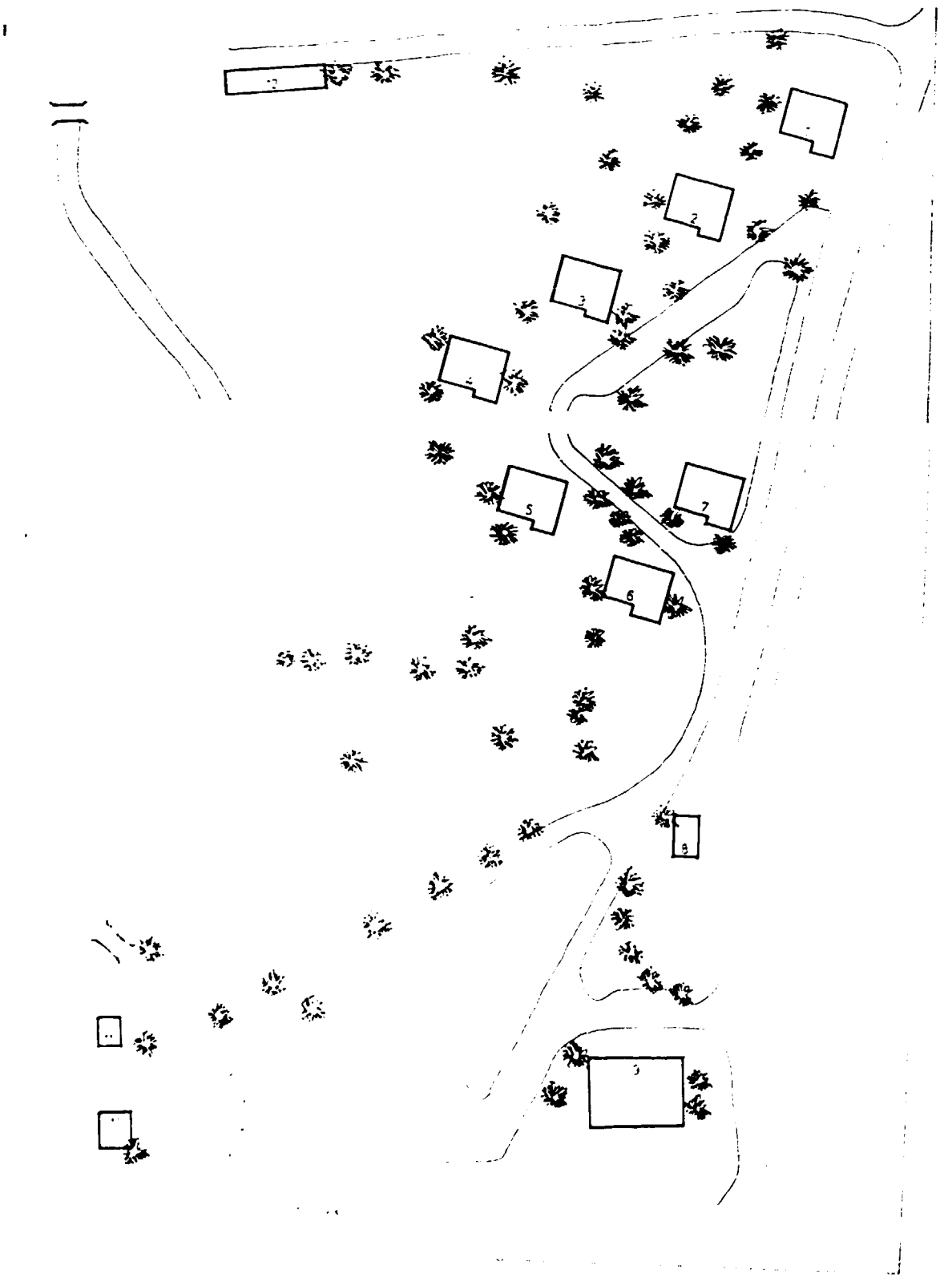


Photo 26 Shows the view from forest. The site is in the forest by a lake. Most of the homes can be seen in the photograph.

Photo 27 Shows the lake which is to the left of photo 26. The view was taken close to the photo 26 position.

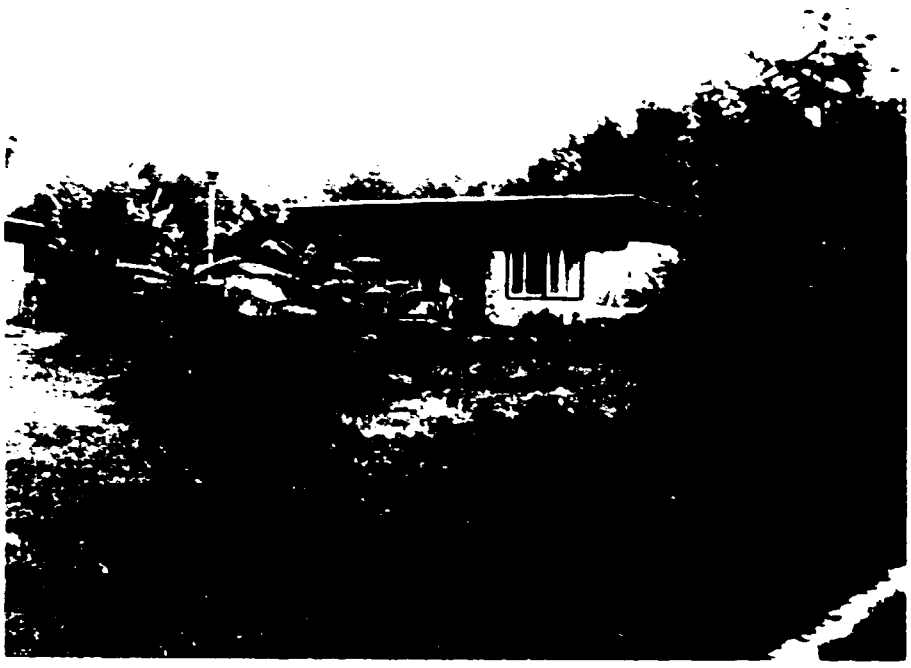
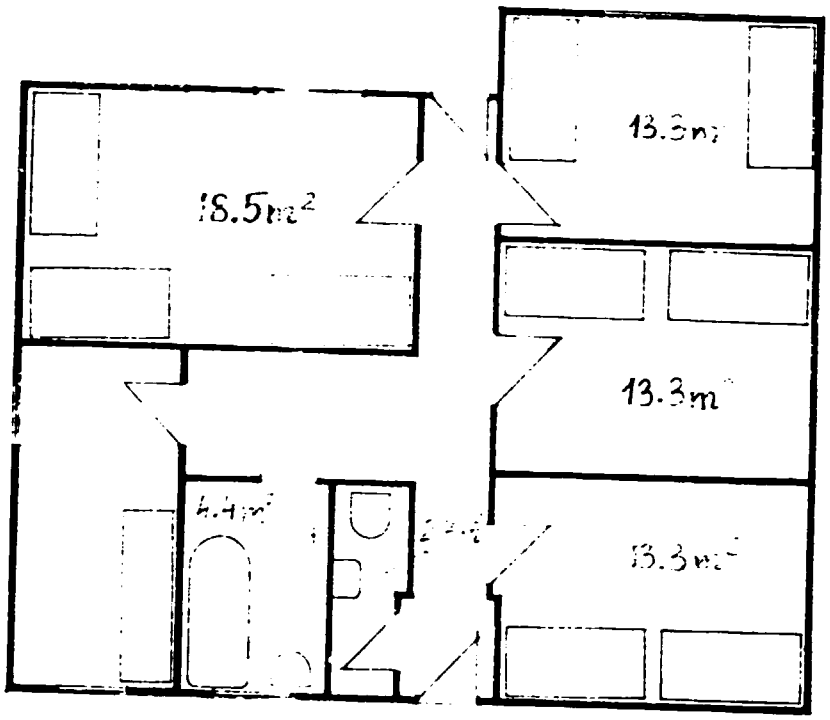


Photo 28 Shows a close up of one of the homes

Photo 29 Shows a view of the lake

PLAN OF THE HOLIDAY BUNGALOW AT SIERAKÓW

APPENDIX A



3. SUMMARY OF PLANT AND MACHINERY

APPENDIX A

Załącznik nr 10.

PODSTAWOWE ŚRODKI PRODUKCYJNE I TRANSPORTOWE ISTNIEJĄCE W SFMB "ZREMB-FAMABUD"

/wykaz zgodnie z przebiegiem technologicznym/

Skala ocen: a/ stan techniczny: ś - średni, d - dobry, b.d. - bardzo dobry

b/ wykorzystanie na 2 zmiany: 0 - do zainstalowania lub uruchomienia

m - małe, ś - rednie, w - wysokie
low medium High.

Nazwa maszyny lub urządzenia /grupa rodzajowa/	Ilość	Dane charakterystyczne	Ocena: stan techniczny	Ocena: wykorzystanie na 2 zmiany	Uwagi
2	3	4	5	6	7
Zakład przy ul. Cukrowej /macierzysty/					
Magazyn mat. hutniczych i półfabrykatów					
Żurawie wieżowe	5	udźwig 2,3-6 t. wysięg 15-30 m	(d)	m-ś	w tym: 1 szt. d zainstalowania
Krajalnia i przygotowalnia materiałów		max. parametry:			
Nożyce uniwersalne do profili	2	grub.blachy 25 mm, pręt ø 65 mm kątownik 150x150x18 mm	ś	m	-
Nożyce gilotynowe do blach	5	max.grub.cięcia 16 mm max.szer.cięcia 3 mm	(d)	m	
Piły tarczowe	7	max.wys.cięcia 300 mm	ś-d	m	-
Wypalarki gazowe półautomatyczne do blach	7	max.grub. 100 mm max.szer. blachy 2500 mm	(d-bd)	ś	
Zwijarka do blach	1	max.grub. 36 mm max.szer. 1500 mm	(d)	m	
stowarka do blach	1	grub. blachy 6-16 mm szer. " 2500 mm	(d)	m	
Wiertarki lekkie	2	max.średnica wiercenia 15 mm	ś	ś	-
Nakiełczarki	2	max.dł. wałka 1000 mm	ś	m	
Ukosowarki do blach	2	kąt ukosowania do 45°	(d)	m	
Oczyszczarka komorowa śrutowa przelotowa	1	przelot komory 600x2500 mm	(d)	w	
Oczyszczarka bębnowa	1	pojemn.1,35 m^3, wydajność: 9 ton/zmianę	ś	m	-
Prasy cierne i mimośrodowe /pionowe/	10	nacisk 63-250 ton	ś-d	m	
Prasy hydrauliczne /pionowe/	3	nacisk 60-160 ton	ś-d	m	
Prasa hydrauliczna pozioma	1	nacisk 160 t, wznios osi tłoka 260 mm, skok tłoka 500 mm	ś	ś	
Prasy krawędziowe	2	nacisk 200 t., max.dł.4000 mm	(d)	ś	
Piece ropowe komorowe	2	max.temp.1200°C, wymiary komory: 600x400x1300	ś	m	
Środki transportowe					
Suwnice pomostowe	2	udźwig 8 ton	(d)	w	
Żurawiki stanowiskowe warsztatowe	8	udźwig 500-1000 kG, wysięg 2,5 m	(b.d)	ś	

APPENDIX A

2	3	4	5	6	7
Wydział obróbki mechanicznej					
Tokarki	21	max.średn. toczenia 630 mm max.dł.toczenia 3000 mm	(ś-d)	ś	
Tokarki rewolwerowe	2	max.średn. pręta toczonego 63 mm max.średn. toczenia 400 mm max.dł. toczenia 925 mm	ś	m	
Tokarka do bębnów linowych	1	wznios kłów 525 mm, średn. wrzeciona 178 mm	ś	m	
Tokarki tarczowe	2	max. średn.toczenia 900 mm	ś	ś	
Tokarki karuzelowe lekkie	2	średn.toczenia 1250-1600 mm wysokość 1000 mm	(d)	w	
Tokarki karuzelowe ciężkie	2	max.średn.toczenia 3200 mm max.wysokość toczenia 1600 mm	(d-b.d)	w	
Automat tokarski 1-wrzecionowy	1	max.średn.pręta toczonego 63 mm	ś	w	
" " 6- "	1	max.średn.pręta obrab. 48 mm max.dł.toczenia 125 mm	(b.d)	o	
Tokarki sterowane numerycznie	2	max.średn.toczenia 320 mm przesuw sań 500/400 mm	(b.d)	o	
Frezarki pionowe	6	pow.stołu 1900x410 mm przesuwy stołu 1065/400/360 mm wrzeciono 110 mm	ś-d	w	
Frezarki poziome	4	pow.stołu 450x2000 mm średn.wrzeciona 105 mm przesuw stołu 1400/440/450 mm	ś-d	w	
Frezarka sterowana numerycznie	1	pow.stołu 400x2000 mm głowica 6-wrzecionowa przesuwy stołu 1320/470/520 mm	(b.d)	ś	
Obrabiarka zespołowa /frezowanie, wiercenie/	1	wyspecjalizowana obrabiarka do obróbki ram wózków kolejowych Y25Ca, Y25L, Y25R	(d)	ś	przelot obrabiarki 3x4x x0,7 m
Frezarki obwiedniowe do uzębień	4	moduł 2-16 mm, średnica max. przedm. 1600 mm	(d)	ś	
Dłutownice do uzębień	2	moduł 2-20 mm, średnica koła 60-3000 mm	(d)	ś-w	w tym dłutownice typu MAAC-16
Wiertarki promieniowe i kadłubowe	13	max.średn.wiercenia 75 mm max.wysięg wrzeciona 2350 mm max.wysokość " 1800 mm	(d)	ś	
Wiertarka wielowrzecionowa	1	max.średn.wiercenia 32 mm 14 wrzecion,pole wiercenia 470x x330 mm	(d)	m	
Wiertarko-frezarki średnie	3	średn.wrzeciona 80-110 mm stół 1250x1120,przesuw wrzeciona 1000/710, 500/800 mm przesuw stołu 1000/1000,1000/800	(d)	w	
Wiertarko-frezarki ciężkie	5	średn.wrzeciona 160 mm stół 1600x1800 mm, przesuw 1400/ /1600,przesuw wrzeciona 1000/1400	(d)	ś	
Wiertarko-frezarka sterowana numerycznie	1	wymiary stołu 1800/1800 mm średn.wrzeciona 130 mm przesuw wrzeciona 900/630 mm przesuw stołu 3500/623 mm	(b.d)	o	
Dłutownice	2	wysokość dłutowania 250 mm średn.stołu 500-630 mm	(d)	m	
Szlifierki bezkłowe	2	średn.szlif. 1-200 mm długość bez ograniczeń	(d-b.d)	m	
" do otworów	3	średn.otworów szlif.10-200 mm max.dług.otw. 160 mm	(d)	m	
" do wałków	2	średn.szlif.max. 250 mm długość szlif. 1200 mm	ś-d	m	
" do płaszczyzn	1	pow.stołu 320x1000 mm przesuwy wrzec. 400/440 mm	ś	m	
Walcarka-gwinciarka	1	średn.walc. 10-80 mm dług. bez ograniczeń	(d)	M	
Zgrzewarka tarciowa	1	zakres średn.zgrzewania 15-45 mm max.dł. 600 + dowolna	(b.d)	o	możliwość spęczania łbów sworzni

2	3	4	5	6	7
Środki transportowe					
Suwnice pomostowe	6	udźwig 8-12,5 ton	b.d.	6	
Żurawiki stanowiskowe warsztatowe	40	udźwig 60-1000 kG, wysięg 2,5-3,4 m	"	6	
Wydział obróbki cieplnej					
Stanowisko do hartowania induko. wałków, tulejek i sworzni	3	max. moc 75 kW, głęb.hart.2 mm max.średn. ø 200, wys. 1500 mm	b.d.	6	
Stanowisko do hartowania induko. kół zębatych	1	max. moc 75 kW, głęb.hart.2 mm max.średn.przedm.ø 1000 mm max.ciężar 2000 kg	b.d.	m	
Stanowisko do h[illegible]uko. i płomieniowego [illegible]	1	max. moc 75 kW, głęb.hart.2 mm średn.przedm.2500-2800 mm	b.d.	m	
Stanowisko do har[illegible] induko. kół jezdnych	1	max. moc 75 kW, głęb.hart.2 mm średn.przedm. 400-600 mm	"	m	
Gniazdo obróbki cieplno-chemicznej. Urządzenie /podstawowe/:					
piece do wyżarzania odprężającego z wysuwanym trzonem	2	temp. 1000°C wym.komory: 1000x600x400	ó-b.d	0	
- piece elektr. komorowe	4	max.wsad 1000 kg, max.temp.1000° max.wymiary komory: 0,68x0,5x x 1,2 m	b.d.	0	
- wanny hartownicze	2	dopuszczalny wsad 200 kg	b.d.	0	
- oczyszczarki strumieniowe	2		d	0	
- piec elektr.wgłębny z atmosferą ochronną	2	temp.950°C, komora: wys.0,8 m średn. 0,58 m	b.d.	0	
- myjnia	1	temp.do 950°C, wsad 120-200 kg	b.d.	0	nawęglanie,wysokie odpuszczanie,w gazach
Środki transportowe					
Suwnica pomostowa	1	udźwig 8 ton	b.d.	ó	wspólna z wydz. obr.mechaniczn.
Żurawiki stanowiskowe	5	udźwig 500-1000 kG, wysięg 2,5 m	"	0-ó	
Wydział montażowo-spawalniczy /spawanie elementów blachowych, kratowych, prace monterskie mechaniczne i elektryczne/.					
ertarki	4	max.średn.wiercenia 75 mm max.wysięg 2350 mm	ó-d	ó	
Półautomaty spawaln.w osłonie CO_2	112	prąd spawania do 400A drut spaw. 1,2 - 1,6 mm	d	m	
Automat do spaw.blach pod topnikiem	1	prąd spawania do 1200 A gabaryty blach 3,5 x 3,5 m	d	ó	
Automat do spaw.rur ze stali profilowej	2	prąd spawania do 800 A max.wymiary kątown.200x200 mm dług. do 6 m	d	ó	
Prasy hydrauliczne	5	nacisk 25-100 ton	d	m	
Środki transportowe					
Suwnice pomostowe ≥2	14	udźwig 8-12,5 ton	b.d	ó	
Żurawiki stanowiskowe warsztat.	32	udźwig 500-1000	"	ó	
Przesuwnica torowa samojezdna	1	nośność 12 t.	d	ó	
Malarnia					
Oczyszczarka śrutowa komorowa ze stołem obrotowym	1	średn.stołu 2600 mm max.wys.przedm. 2000 mm	d	m	
Oczyszczarka śrutowa komorowa przelotowa	1	przelot komory 600x2500	b.d	ó	
Linie malarskie	2				
Urządzenia:					
- komory malarskie	2+1	przelotowe, wym. 12,5x3,1x9 m 2,5x3,1x6 m, 7,5x6x9 m	d	ó	
- suszarnie komorowe	2	przelotowe, wym. 2,5x3,1x6 m 2,5x3,1x9 m	d	ó	
- urządzenia transportu podłogowego i sufitowego	2	wózki 1 ton, wciągnik 1 ton i 3 ton	d	ó	

APPENDIX

2	3	4	5	6	7
[illegible] w budynku	2				
[illegible]	2x2	przelotowe, wymiary: 2, [illegible]x15 m	b,d	o	
[illegible] komorowe	4x2	" " 2,[illegible]3,1x7,5	b	o	
[illegible] transportu podłogo- i sufitowego	2x2	wózki 3 ton, wciągnik 1,5 ton	a	o	
[illegible] transportowa:					
[illegible] stołowe	2	udźwig 5-12,5 ton	b,d	m	
[illegible] wiertarka	1	udźwig 1000 kg, wysięg [illegible],5 m	a	m	
[illegible] pomostowy	1	do transportu wózków [illegible] 3 ton	a	o	
[illegible]	1	udźwig 5 ton, wysięg [illegible] m	d	m	planowane [illegible] montażowe
[illegible] tokowa do obróbki	1				
[illegible]					
[illegible]					
[illegible] poziomowa	1	max.średn.wiercenia 7[illegible] mm wysięg ok. 2000 mm	6	6	
[illegible] tokarka [illegible]	1	średn.urzeczona 110 mm przesuw stołu 1200/150[illegible] mm	6	6	
[illegible]	1	max.średn.toczenia 500 mm max.dług.toczenia 1500 mm	6	6	
[illegible] marka do lin	1	przecinanie i zakańczanie lin zakres średnic 1-40 mm	d	6	
[illegible] do naciskania lin	1	max.siła zaciągania 1½ ton max.dług.zaciąg. 1,3 m	6	6	
[illegible] transportowe:					
[illegible] stołowe	6	udźwig 4-20 ton	6	6	
[illegible] stołowe warszta-	4	udźwig 500-1000 kg, wysięg 2,5 m	d	6	
[illegible] Prasowanie					
[illegible] elektryczna	1	udźwig 5 ton	6	6	
	1	udźwig 3,5 t., wysięg [illegible],5 m	6	6	
[illegible] kowe					
[illegible] akumulatorowy	16	nośność 1200 kg	6-d	6	
[illegible] spalinowy	20	" 2000 kg	"	6	
[illegible] akumulatorowy platformowy	26	" 2000 kg	"	6	
[illegible] chodowy	2	udźwig 4,5 t.	6	6	
" "Hydros"	1	" 30 t.	d	m	
[illegible] wywrotka	1		6	6	
[illegible] dostawczo	11		6	6	
[illegible]	11		6	6	

APPENDIX A

PLAN OPERACYJNY

4. PROCESS PLANNING SHEETS

Nazwa części	Nr rys.	Szt. na wyrób	Arkusz
KOŁO ZĄBATE	Ż7-71-01	1	1/3

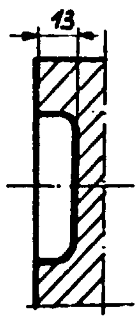
Wyrób	Nazwa pozycji materiałowej	Materiał bez nadd. na cięcie
ŻB-120/200	Odlew	

Warunki techniczne wg PN	Wymiar mater. do zakupu	Gat. mat. P.N.	Mater. z nadd. na cięcie
	wg modelu	L II 600	

Nr karty rozkr.	Gabaryt części	Wymiar na uchwyt 1 pręta: tokarki	rewolwer	automat	inne	Wyszczegól	na 1 część	na 1 wyr.
						ciężar netto	~11,5	
						norma zużycia		

Grupa przydz.	Nr branży	Ciężar mater. na zamoc. 1 pręta	Ciężar mater. na zamoc. 1 sztuki	Ciężar 1 mb. 1 ark. itp.	Uzysk. %

Szkic do op. 20 zab. b



wymiar	odchył.	wymiar	odchył.

znak obr.

Nr op./cz.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe: narzędzia skraw.	narzędzia pomiar	przyrządy i urządz.	Warunki skraw.: g	p	v	i/n	Taryfik.	Czas w godz.: tpz na całość	tj. na 1 szt.
10	SPRAWDZIĆ	NJ										
	naddatki na obróbkę wg rysunku i jakość detalu			MLKe 2000 MAUb 150								
20	TOCZYĆ ZGRUBNIE	PA45 43								1/X/VI	0,360	0,840
a	wycentrować i zamocować za Ø zewnętrzną				PUTf 630				p			
b	zabielić czoło piasty i wieńca do wymiaru 13 wg szkicu		SPUN 120308 S20S	MAUb 150	hR111.17 3232		0,5 0,5		3/145 3/45			
c	toczyć Ø zewn. na Ø 447 do szczęk		TPUN 220408 S20S	MAJa 630	hR117.17 3232		0,5		3/45			
d	obrócić, wycentrować i zamocować za Ø 447 (do szczęk)				a							

Kreślił	Opracował 86.09.10	Sprawdził	Zatwierdził

APPENDIX A

Plan operacyjny

Nazwa części	Nr rys.	Arkusz
KOŁO ZĄBATE	27-71-01	2/3
	Wyrób	szt./wyr.
	ŻB-120/200	1

Nr op./cz.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe: narzędzia skraw.	narzędzia pomiar.	przyrządy i urządz.	Warunki skraw. g	p	v	i/n	Taryfik.	Czas w godz. tpz na całość	tj na 1 szt.
e	dokończyć toczenie ø 447		o	o	o		0,5		3/45			
f	planować czoło wieńca do wymiaru 41		b	b	b		0,5		2/45			
g	planować czoło piasty do wymiaru 53		b	b	b		0,5		3/145			
h	wytaczać otwór na ø 58		SPUN 120308 S20S	b	hR131.17 0020		0,5		3/145			
30	TOCZYĆ	PA-45 / V3								1/V4 VII	0,360	1,025
a	wycentrować i zamocować na ø447 piastą w stronę konika				PUTY 630		0,3		p 1/180			
b	planować czoło piasty i wieńca na głęb. 0,5		SPUN 120308 S20S	MAUb 150	hR111.17 3232		0,3		1/54			
c	zabielić ø410x8 /baza do dalszej obróbki/		TPUN 220408 S20S	b	hR117.17 3232		0,3		2/54			
d	wykonać fazy wg rysunku /na ø zewn. 2-45°/		b		b		R		3/54			
e	obrócić, wycentrować i zamocować za zatoczenie technologiczne				a							
f	planować czoło piasty do wymiaru $52^{+0,1}$		b	MAUb 150	b		0,3		1/180			
g	planować czoło wieńca /utrzymując płaszczyznę z piastą/		b		b		0,1		2/54			

1811.86.86'-84.7e
PWHDA Kr. 1382-Kw-T-77 – DN-16 Termów 1203-77 3.000 szt. A4

Plan operacyjny

Nazwa części	Nr rys.	Arkusz
KOŁO ZĘBATE	Ż7-71-01	3/3
	Wyrób	szt./wyr.
	ŻB-120/200	1

Nr op./cz.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe: narzędzia skraw.	narzędzia pomiar.	przyrządy i urządz.	Warunki skraw.: g	p	v	i/n	Taryfik.	Czas w godz.: tpz na całość	tj na 1 szt.
h	Wytaczać otwór ø 60H7 na gotowo		SPUN 120308	MDAh 30-150 MMZb 50-75	NR131.17 0020		0,1		3/180			
	toczyć ø 445,2-0,1 wg rysunku		o	MAJa 630	o		0,1		2/54			
j	wykonać fazy wg rysunku /na ø zewn. 1-45°/		b		b		R		5/54			
40	DŁUTOWAĆ	7D-430 / W3								1/V	0,360	0,080
a	zamocować /zastosowaniem technologicznym do góry/				PUTm		P					
b	dłutować kanałek 18H9 wg rys.		NC-13 NC-321	MMWd 5-30		P_s=0,1 mm/[illegible] V_s=12 m/min						
c	opiłować ostre krawędzie po dłutowaniu				wypos.							
50	FREZOWAĆ	5K32A / W-3								1/VII VIII	0,500	1,900 100% 1,045 W/2 0,760 W/3
	uzębienie wg instr. z naddatkiem na szlifowanie		wg instrukcji nr						P			
60	WYKOŃCZYĆ ŚLUSARSKO	010 / W3								1/IV	0,180	0,315
	zaokrąglić krawędzie zębów 0,5-45°				wypos.							
70	SZLIFOWAĆ	KOOPERACJA			PG 157							
	zęby do Ra = 1,6 wg rysunku											
80	SPRAWDZIĆ	MJ		MAUb-150 MAJa-630 MDAh 30-150 MMZb 50-75 MMWd 5-30								
	wymiary wg rys.											
85.	Cechować	010 / W3		MMWe 150-175 MAZe 1-18						1/IV	0,180	0,015
	wg rys. na rysunku.											

APPENDIX A

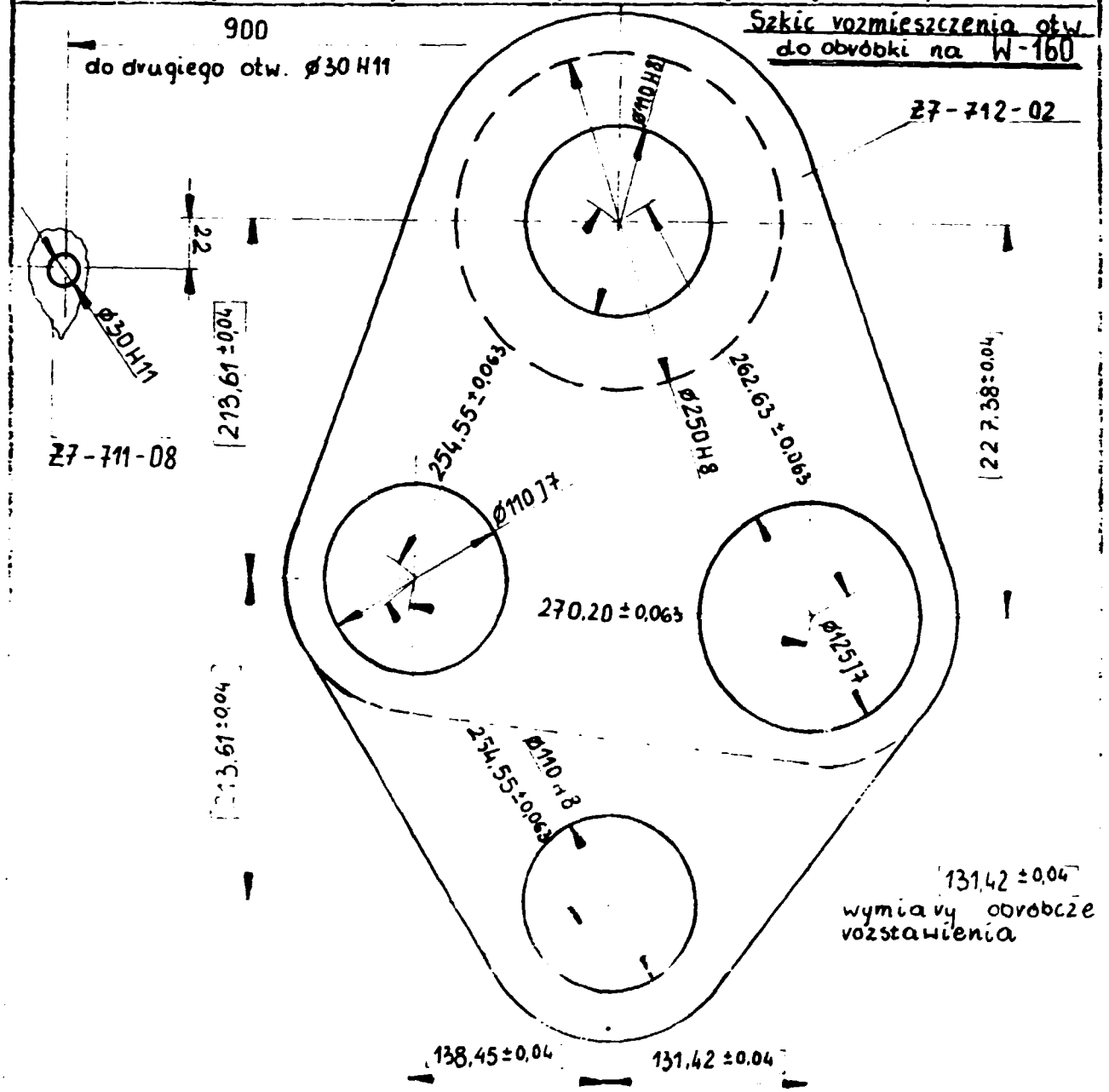
Plan operacyjny – OBRÓBKI I SKŁADANIA

S. F. B. M. Dział Gł. Technologa	Nazwa części: Przekładnia główna - podzespół korpusów	Nr rys.: 27-71/TT-01	Szt. z ugrób.: 1	Arkusz: 1/7
	Wyrób: ZB-120/200	Nazwa pozycji materiałowej		Materiał bez nadd. na cięcia
Warunki techniczne wg PN		Wymiar materiału do zakupu	Gat. mat. PN	Materiał z nadd. na cięcia

Nr karty rozkr.	Gabaryt części	Wymiar na uchwyt i pręta: tokarki	rewolwer	automat	inne	Wyszczególnienie	na 1 część	na 1 ugrób
						ciężar netto		
						norma zużycia		

Grupa przydz.	Nr bramy	Ciężar mater. na zamocow. 1 pręta	Ciężar mater. na zamocow. 1 sztuki	Ciężar 1 mb 1 szt. itp	Uzysk %

Szkic rozmieszczenia otw. do obróbki na W-160



250H8	+0,072 / 0			
125 J7	+0,026 / -0,014	30H11	+0,130 / 0	
110 J7	+0,022 / -0,013	110H8	0,054 / 0	

Nazwa części	Nr rys.	Arkusz
PRZEKŁADNIA ZĘBATA – PODZESPÓŁ KORPUSU	Z7-71/TT-01	2/7
	Wyrób	szt./wyr.
	2B-120/200	1

Nr oper.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe: narzędzia skraw.	narzędzia pomiar.	przyrządy i urządz.	Warunki skraw. g	p	v	i / n	Taryfik.	Czas w godz. tpz na całość	tj na 1 szt.
10	WIERCIĆ	RM-62 W3								1	0,280	0,640
a	znaczyć na pokrywie korpusu Z7-712-00 12 otw. ø 14 i 2 otw. ø 12H7. Punktować otwory				UWAGA: wykorzystać przy trasowaniu zabieloną ø 880. Liniowa odległość między otworami ø 14 wynosi 220. Zwrócić uwagę na położenie otworów względem żeber.					p VII		
b	założyć pokrywę Z7-712-00 na korpus Z7-711-00 i skręcić śrubami				UWAGA: sprawdzić kątownikiem współosiowość otworów wstępnie wyciętych palnikiem.							
c	ustawić i zamocować całość na stole				wypos.							
d	wiercić 12 otw. ø 14		NWKo 14	NAUb 150		0,15			1x12 ~350			
e	wiercić 2 otw. ø 12H7 wstępnie na ø 11		NWKc 11	d		0,1			1x2 ~350			
f	rozwiercać 2 otw. zgrubnie na ø 11,8		NRTa 11,8			0,7			1x2 ~500			
g	rozwiercać 2 otw. ø 12H7 na gotowo		NRTc 12	NDAh 10-18 NWZb 0-25		0,7			1x2 ~350			
	stępić ostre krawędzie po wierceniu		wypos.									
	wbić 2 kołki ø 12n6 x 40 nr Z7-71-107				wypos.							
	skręcić obie części 4 śrubami Z7-71-112 z podkładkami Z7-71-117				wypos.							

Plan operacyjny **APPENDIX A**

ZREMB FAMABUD

Nazwa części	Nr rys.	Arkusz
PRZEKŁADNIA ZĘBATA PODZESPÓŁ KORPUSÓW	Ż7-71/TT-01	3/7
	Wyrób: ŻB-120/200	szt. wyr.: 1

Nr op./cz.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe: narzędzia skraw.	narzędzia pomiar.	przyrządy i urządz.	Warunki skraw.: g	p	v	i/n	Taryfik.	Czas w godz.: tpz na całość	t. j. na 1 szt.
	i nakrętkami Ż7-71/122											
20	FREZOWAĆ	W-160 / W-3								1 / VIII	4,00	6,600 / 2,210
y	wg rys. Ż7-711-00 Ż7-712-00								p	IX	1,600	8,600 / 11,18
a	ustawić w przyrządzie i zamocować		UWAGA: 1. Ustawić zgodnie ze szkicem oś łączącą otwory Ø110H8 prostopadle do stołu.		PD-466							
b	frezować czoło piasty Ż7-711-03 do gr. 23		SPKN 1203 ED-R S25S	MAGa 160 MAJe 400	hR.257.1 200-20		80		1÷3 / ~140			
c	obrócić stół dokładnie o 180°		2. *Przy sprawdzaniu naddatków i planowaniu obróbki uwzględnić konieczność centryczności poz. 09 do otw. Ø250H9 /Dopuszcz. błąd przestawienia osi 5 mm./*									
d	frezować czoło piasty Ż7-712-00 do wym. 375+0,5 wg rys.		b	MAGe 400	b		80		1÷3 / ~140			
e	wytaczać zgrubnie i na gotowo otwór Ø 250H8		NC-37	MDAh 150-315 MMZb 250-275	SD-134		30 / 10		3÷4 / ~140			
f	fazować otwór na 6,3+0,2		NNZc		b		40		1 / ~80			
g	wytaczać współosiowo Ø 250H8 otwór Ø 110H8		e	MDAh 30-150 MMZb 100-125	SD-135		50 / 20		3÷4 / ~140			
h	fazować krawędzie na 1-45°		NNZc		g		~10		1÷1 / ~140			
i	wytaczać zgrubnie i na gotowo otwory Ø 110I7		e	g	e		50 / 20		6÷2 / ~140			
j	fazować krawędzie otworów Ø 110I7		f		e		~20		2÷2 / ~140			

ZREMB FAMABUD

Plan operacyjny

APPENDIX A

Nazwa części	Nr rys.	Arkusz
PRZEKŁADNIA ZĘBATA PODZESPÓŁ KORPUSÓW	27-71/TT-01	4/7
	Wyrób: ZR-120/200	szt. wyr.: 1

Nr op. cz.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe: narzędzia skraw.	narzędzia pomier.	przyrządy i urządz.	Warunki skraw. g	p	v	i/n	Taryfik.	Czas w godz. tpz na całość	t. j. na 1 szt.
k	wytaczać zgrubnie i na gotowo otwory Ø 125J7		x e	g	e	50 / 20			2+2 / ~120			
l	fazować krawędzie otworów Ø 125J7		h		e	20			2+2 / ~120			
ł	wytaczać dolny otwór Ø 110H8		e	g	e	60 / 20			3+1 / ~140			
m	fazować krawędzie Otw. Ø 110H8 na 1-45°		h		e	20			2 / ~140			
n	wiercić otwór Ø 30H11 w uchach 27-711-08 wstępnie na Ø 28,5		NWKo 28,5		wypos.	30			1 / ~40			
o	rozwiercać otwór na 30H11		NRTa 30H11		wypos.	~100			1 / ~40			
p	powtórzyć zab. "n - o" dla trzech pozostałych											
r	stopić krawędzie otw. Ø 30H11		wypos.									
30	WIERCIĆ	IV-12 / -3								1/11 P VII	0,330	0,330
a	ustawić na stole i zamocować pokrywę 27-712-00 do góry				wypos.							

REMB FAMABUD	Nazwa części: PRZEKŁADNIA ZĘBATA – PODZESPÓŁ KORPUSU	Nr rys.: 27-71/TT-01	Arkusz: 5/7
		Wyrób: ŻB-120/200	szt./wyr.: 1

Nr op./cz.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe – narzędzia – skraw.	Pomoce warsztatowe – narzędzia – pomiar.	przyrządy i urządz.	Warunki skraw. – g	p	v	i/n	Taryfik.	Czas w godz. – tpz na całość	tj na 1 szt.
b	zamocować płytkę wiertarską pod otw. M12 na otworze ø 110H8				PD-454							
c	wiercić 6 otw. M12 na ø 10,2 /rozstaw ø 300/		NWKo 10,2	MAUb 150	wypos.		0,1		1x6 / 450			
d	przełożyć płytkę wiertarską do drugiego otworu ø 110H8, zamocować				b							
e	wiercić 6 otw. M12 na ø 10,2 /rozstaw ø 160/		o	o	wypos.		0,1		1x6 / 450			
f	zamocować płytkę wiertarską pod otwory M10 na otw. ø 110J7				PD-457							
g	wiercić 6 otw. M10 na ø 8,5 /rozstaw ø 135/		NWKc 3,5	o	wypos.		0,1		1x6 / 550			
h	założyć płytkę wiertarską na otw. ø 125J7				PD-456							
i	wiercić 6 otw. M10 na ø 8,5 /rozstaw ø 150/		o	o			0,1		1x6 / 550			
j	założyć płytkę wiertarską pod otw. M8 /2 mocowania/				PD-458							
k	wiercić 4+8 otw. M8 na ø 6,8		NWKo 6,8	o			0,08		1x12 / 700			
l	pogłębić pod otw. M30x2 z ø 25 na ø 27,9		NVKo 27,75	o			0,5		1 / 240			

Plan operacyjny

ZREMB FAMABUD

Nazwa części	Nr rys.	Arkusz
PRZEKŁADNIA ZĘBATA – PODZESPÓŁ KORPUSU	27-71/TT-01	6/7
	Wyrób	**szt./wyr.**
	ŻB-120/200	1

Nr op./cz.	Opis oper. lub czynności	Obrob. stanow. wydz.	Pomoce warsztatowe – narzędzia skraw.	Pomoce warsztatowe – narzędzia pomiar.	przyrządy i urządz.	Warunki skraw. g	p	v	i / n	Taryfik.	Czas w godz. tpz na całość	tj na 1 szt.
ł	fazować wszystkie wywiercone otwory na 1-120°		NWKo 15 NWKo 40	Uwaga: Wykonać takie otw. ø21 i ø8,5 wg rys.			R R		36/~550 1/~240			
m	obrócić korpusem 27-711-00 do góry i zamocować				wypos.							
n	wstawić w otwór ø 250 płytkę wiertarską i zamocować				PD-455							
o	wiercić 6 otw. M16 na ø 14		NWKo 14	o			0,15		1x6/~300			
p	założyć płytkę wiertarską pod otwory M16 na otw. ø 110				PD-457							
r	wiercić 6 otw. M10 na ø 8,5		6	o			0,1		1x6/~550			
s	założyć płytkę wiertarską pod otw. M10 na otwór ø 125				PD-456							
t	wiercić 6 otw. M10 na ø 8,5		6	o			0,1		1x6/~550			
u	powiercać pod otwór M30x2 z ø 25 na ø 27,9		NWKo 27,75				0,5		1/~240			
w	fazować otwory na 1-120°		ł				R		1/240 [illegible]			
40	WYKOŃCZYĆ ŚLUS.	010/W3								1/V	0,180	2,230
a	gwintować 6 otw. M16		NGMs M16		PBPo							

PWHDA Kr. 1382-Kw-T-77 – DN-16 Tarnów 1303-77 3.000 szt. A4

	Nazwa części	Nr rys.	Arkusz
FAMABUD	PRZEKŁADNIA ZĘBATA - PODZESPÓŁ KORPUSU	27-71/TT-01	7/7
		Wyrób: 2B-120/200	szt./wyr.: 1

Nr op./cz.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe: narzędzia skraw.	Pomoce warsztatowe: narzędzia pomiar.	Pomoce warsztatowe: przyrządy i urządz.	Warunki skraw. g	p	v	i/n	Taryfik.	Czas w godz. tpz na całość	tj na 1 szt.
b	gwintować 12 otw. M10		NGMn M10		GAP-10							
d	gwintować otwór M30x2		NGMn M30x2		PBPo							
	opiłować i oszlifować ostre krawędzie i nierówności, oczyścić z wiórów		wypos.		SOB-225							
e	obrócić korpus				wypos.							
f	gwintować 12 otw. M8		NGMn M8		b							
g	gwintować 12 otw. M10		b		b							
h	gwintować 12 otw. M12		NGMn 12									
i	gwintować otwór M30x2		o		d							
j	opiłować i oszlifować ostre kraw. i nierówności. Oczyścić z wiórów		d		d							
50	SPRAWDZIĆ	NJ		MDAh 30-150 150-350 MMZb 100-125 250-275 MAJa 630 MAGe 400 MAUb 150								
	wymiary: ∅ 110H8 ∅ 110J7 ∅ 125J7 ∅ 250H8 odległości między w/w otworami zgodnie z rys. 27-711-00 -712-00. Pozostałe wymiary wg rys.	100%										

PWHDA Kr. 1382-Kw-T-77 – DN 16 Tarnów 1203-77 3.000 szt. A4

Plan operacyjny obróbki i składania 4. PROCESS PLANNING SHEETS APP A

Nazwa części	Nr rys.	Arkusz
MECHANIZM OBROTU	Ż7-71-00	1/8
	Wyrób: ŻB-120/200	

Nr poz.	Rodzaj mat.	Wymiar	Symbol PN	Cięż. netto	Cięż. brutto	Szt. na wyr.	Szt. na serię
					900	1	

Nr op./cz.	Opis oper. lub czynności	Oznacz. stanow. wydz.	Narzędzia skraw.	Narzędzia pomiar.	Przyrządy i urządz.	g	p	v	i/n	Taryfik.	tpz na całość	tj na 1 szt.
10	WYKONAĆ ŚLUS.	010 / W3								2/V	0180	~~0,450~~ ~~0,650~~ ~~2,600~~ 3,00
.	zdemontować podzespół technol. Ż7-71/TP-01				wypos.							
b	montować wg rys. Ż7-717-00 do pokrywy Ż7-712-00 zespół pompy zębatej Ż7-717-00 śrubami M8x25 z podkładkami sprężystymi 8,2. [illegible]											
c	dopasować, ustawić i spawać do pokrywy rurkę Ż7-7172-00. [illegible] otwory				wypos.							
20	MALOWAĆ	090 / W3								1/IV	0160	0066
	oczyścić uzupełniająco i malować antykorozyjnie uzupełniająco farbą rdzochronną czerwoną tlenkową wg instr.				wypos.							
30	MALOWAĆ	090 / W3								1/IV	0,160	0,420
	wewnątrz korpusy emalią ftalową olejoodporną symb. 3169-656-570 wg instr.				wypos.							

Uwaga:
Przykręcić do pompy 2 cokoły nr Ż7-717-02 śrubami M8 i po dopasowaniu całego zespołu pompy sczepić i spawać cokoły do pokrywy spoiną Δ4. Przyspawać także korek Ż7-717-03 i rurkę wg rys. (gazową)
(Przed ułożeniem oczyścić miejsca pod spoiny)

Kreślił	Opracował	Sprawdził	Zatwierdził
	87.01.26		

PWHDA ... 1303-Kw-1-77 ... A4

Plan operacyjny

S. F. B. M. Dział Gł. Technologa	Nazwa części: MECHANIZM OBROTU	Nr rys. 27-71-00	Arkusz 3/8
		Wyrób 2B-120/200	szt./wyr. 1

Nr op./cz.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe: narzędzia skraw.	Pomoce warsztatowe: narzędzia pomiar.	Pomoce warsztatowe: przyrządy i urządz.	Warunki skraw. s	p	v	i/r	Tarpfik.	Czas w godz. tpz na całość	Czas w godz. tj na 1 szt.
	- drugie łożysko poz. 101 tuleję dystansową poz. 24 koło zęb. poz. 07 przykręcić płytkę poz. 15 śrubami M12x25 poz. 114 z podkładką poz. 118. Zabezpieczyć śruby przed odkręceniem wg rys.											
f	montować do korpusu 27-711-00 - łożysko poz. 102 - łożysko poz. 103 założyć technologiczne pierścienie dystansowe, pokrywki poz. 09 i 11 oraz śruby poz. 115 z podkładkami poz. 123				RF-283 RP-284							
g	montować do korpusu tuleję 27-713-00 ze zmontowanymi w zab. "e" detalami przy pomocy śrub M16x20 poz. 111 z podkładkami poz. 121											
50	WIERCIĆ	RF-50 WS								1 VI	028	0240
a	znaczyć i punktować 2 otw. pod kołki ustalające poz. 126			MAUb 150	wypos.							
b	ustawić do wier-				wypos.							
c	wiercić otw. ø 16H7 na ø 15,5 wg rys. 27-71-00		WWKc 15,5	a	PTPa							

APPENDIX A

Plan operacyjny

Nazwa części	Nr rys.	Arkusz
MECHANIZM OBROTU	27-71-00	2/8
	Wyrób ZB-120/200	szt. wyr. 1

Nr op./cz.	Opis oper. lub czynności	Obrab. stanow. wydz.	Pomoce warsztatowe: narzędzia skraw.	Pomoce warsztatowe: narzędzia pomiar.	Pomoce warsztatowe: przyrządy i urządz.	Warunki skraw.: g	p	v	i/n	Taryfik.	Czas w godz.: tpz na całość	t. j. na 1 szt.
40	MONTOWAĆ	010 / W3								2 / VII	1,000 / 0,360	40,250 (1) / 4,00 / 43,33 / 11,70
a	oczyścić przed montażem korpusy 27-711-00 -712-00 oraz pozostałe detale wg rys. Odkonserwować części zakonserwowane				wypos.							
b	montować do wałka zębatego poz. -02 detale w kolejności: - wpust A18x11x50 poz. 108 - koło zębate poz. 01	F5328			RF-274							
c	montować do wałka zębatego poz. 04 detale w kolejności: - wpust A25x14x65 poz. 105 - koło zębate poz. 03	b			b RF-276							
d	montować do wału poz. 06 /od strony małego koła zębatego/ łożysko poz. 101				RF-275							
e	montować do tulei 27-713-00 pierścienie sprężynujące poz. 22 i dalej w kolejności: - wał z łożyskiem - pokrywę poz. 23 - śruby M12x25 poz. 114 z podkładkami spr. poz. 122 - obsadę poz. 20 - pierścień uszczel. poz. 104											

UWAGA:

1/ powierzchnię pod pokrywy smarować w celu uszczelnienia hermetykiem

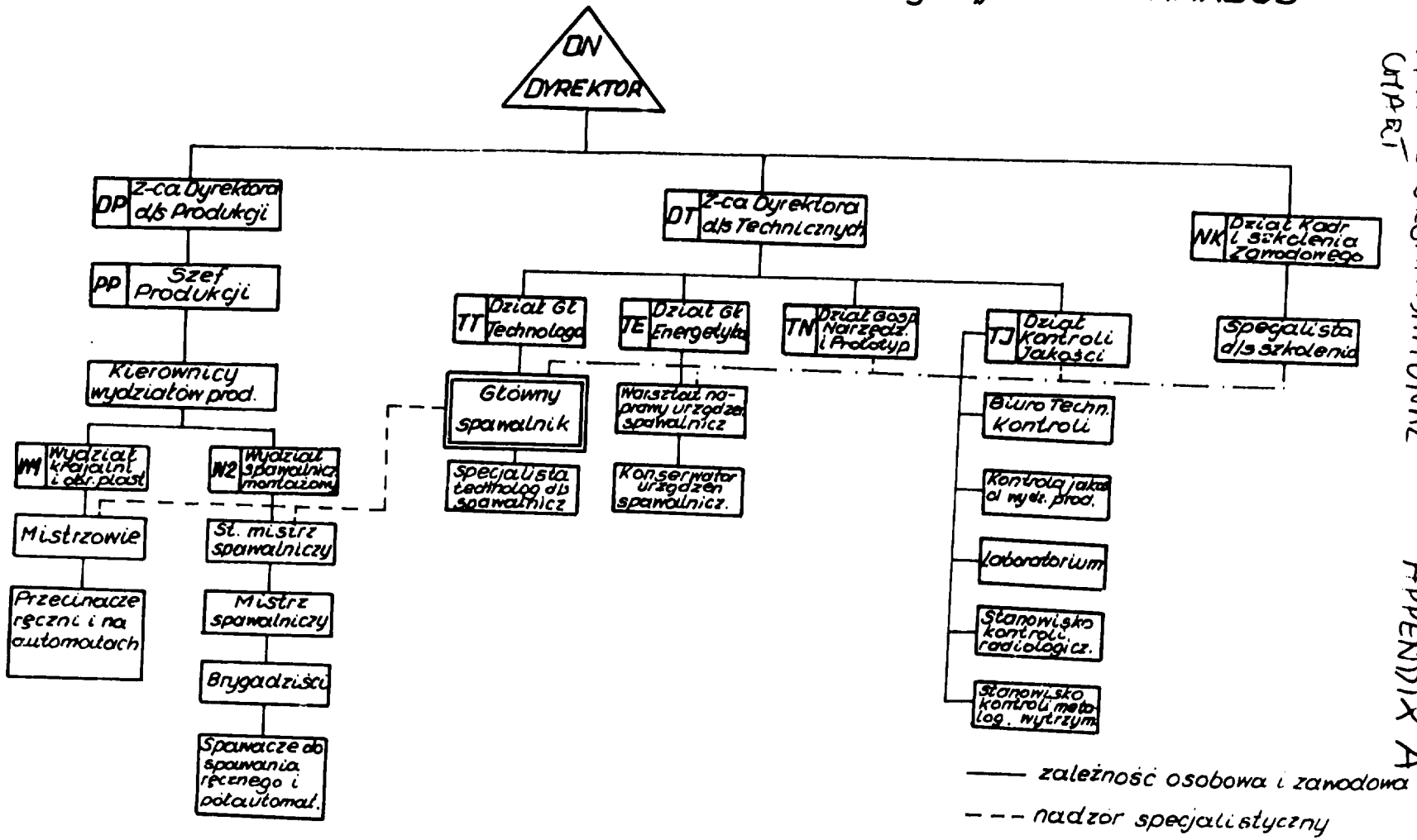
2/ łożyska montowane do tulei smarować smarem ŁT-42

3/ w trakcie montażu uzupełnić powłokę malarską z farby olejoodpornej na detalach, które tego wymagają /płytki, pokrywki, pow. nieobrabiane kół zębatych itp./

PWIDA Kr. 1664 KW-7-76

① K24/TT/ZB/120/200/88

SCHEMAT ORGANIZACYJNY NADZORU SPAWALNICZEGO
w Szczecińskiej Fabryce Maszyn Budowlanych „ZREMB-FAMABUD"



Szczecin 04.1991

APPENDIX A

Curriculum vitae of MANAGING DIRECTOR

Name: Kłosowski
First name: Jerzy
Date of birth: 12 Oct. 1934
Place of birth: Nowa Wieś
Education: Szczecin Polytechnic
Date of graduation: 1963
Title: Mechanical Engineer
Languages: German - fair
Russian - fair
Job: 1960-65 Chief inspector
1965-73 Chief inspector "Hydroma" Szczecin
1973-79 Director "Selfa" Szczecin
1979-80 Head of Transport Departament "Enargopol 5" Szczecin
1980-82 Sales manager "Polmozbyt" Szczecin
1982-90 Chief Inspector Szczecin
1990- Managing Director "Famabud"
Cources: 1978- two semesters of management studies
Address: Szczecin, 30\17 Derdowski Str.

Curiculum vitae of PRODUCTION MANAGER

Name: Sowa
First name: Roman
Date of birth: 26 Feb. 1943r.
Place of birth: Ruda Nowa
Education: Poznan Polytechnic
Date of graduation: 1970
Languages: Russian - fair

Job: since 1961 - "Famabud" Szczecin
- Turner
- foreman
- department manager
- production manager

Address: Szczecin, 21B\9 Malczewski Str.

.

Curiculum vitae of TECHNICAL MANAGER

Name: Staniszewski

First name: Jan

Date of birth: 27 Mar 1936

Place of birth: Drozdów

Education: Szczecin Polytechnic

Date of graduation: 1961

Languages: English - fair
Russian - good

Job: 1961-63 Tool-room manager
1963-67 Production engineer
1968-70 Design engineer
1970-74 Deputy director (technical)
1974-76 Chief of investments "Famabud"
1976- Deputy director "Polmo"
-91 Technical manager :Famabud"

Courses: 1978\79 Management studies

Address: Szczecin, 34 Narożna Str.

Departments managers

1.Constuction Dep. Manager: Mariusz Żelachowski D.Sc.,Eng.

Year of birth: 1937

In FAMABUD since 1972

Education :Szczecin Polytechnic -M.Sc.Eng.1961
Warsaw Polytechnic- D.Sc. 1977

Speciality :Cranes

Former jobs:Szczecin Polytechnic - Assistant
Build.Mach.Resarch Centre-Deputy Manager

in FAM. :Senior Constructor,Main Constuctor

Languages :English-poor

Duties :Manage of Dep. , deliver present construction documentation and documentation for new and modernized products.

Own decisions:determine construction solutions of set tasks

Director decis.:determine new task e.g. to construct a new crane

Competence: Interested in the facory matters, ready to collaboration,

2.Prod.Technology Dep. Manager: Janusz Całużyński Eng.

Year of birth: 1945

In FAMABUD since 1972

Education :Szczecin Polytechnic- Eng.1974

Speciality:Machine tool mechanics and built machines technology

Former jobs:Pomorska Medical Academy-Techology Dep.
-Technician

in FAM.: Process Eng., Section Manager, Main Process Eng.

Languages: Russian-poor

Duties: Organization and control of technology documents preparation, preparation and putting in motion plans of production, pronounce his opinions on departments modernization, investigation of apostasies and changes

Own decisions: In the matter of production technology

Director decis.: Employment, wages, buying new machines

Competence: Good knowledge in his field, ambitious, interested in the factory matters, seeking new solutions both organizational and technical, has proper collaborators in his department and is ready to collaboration

3. Quality Insp. Dep. Manager: Zdzisław Adamowicz Eng.

Year of birth: 1939

In FAMABUD since 1963

Education : High technical

Former job in FAMABUD: lochsmith, prod. technologist, W1 manager, head of prod. technology dep., deputy trade director

Languages : Russian - poor

4. Mech. Repairs Dep. Manager: Adam Wieczorek Eng.

Year of birth: 1936

In FAMABUD since 1978

Education : Extramural Engineering High School

Speciality: Mechanic Eng. - 1962

Former jobs: Krosno Factory of Hardware-Gringer

FSC Lublin - Foreman

Containers Factory- Chief Mechanic

SPBO Szczecin - Maintenance Dir.

in FAM. : Chief Energetic, Deputy Chief Mech., Chief Mechanic

Languages : none

Duties : Mechanical repairations

Dir decis.: Investments, cooperation with other comp.

Competence: Lack of contacts(personal contacts only with his deputy)

5. Energetic Dep. Manager: Wiesław Kukiełko Eng.

Year of birth: 1950

In FAMABUD since 1987

Education : High tech.

Languages: Russian, english - poor

6. **Tools & Prototype Dep. Manager:** Marek Siech M.Sc., Eng

Year of birth: 1945

In FAMABUD since 1990

Education : High tech.

Languages : Russian, English - ppor

7. Industrial Safety Dep. Manager: Tadeusz Romanowski

Year of birth: 1939

In FAMABUD since 1989

Education : Secondar tech. school

Languages : Russian, English - poor

8. Transport Manager : Jan Stroiński

Year of birth: 1942

In FAMABUD since 1987

Education : Secondary tech. school

Languages : none

9. Economic Dep. Manager: Zenon Stępień

Year of birth: 1948

In FAMABUD since 1989

Education: Szczecin Polytechnic

Speciality: Economics of the enterprise - 1972

Former jobs: Szczecin Polytechnic-specialist

in FAM.: Manager of economic analyses section

Languages : English, French, Russian

Duties : preparation of reports and analyses

Competence: good knowledge in his field, has new ideas of changes, very interested in the factory matters, ambitious

10. Financial-bookkeeping Dep. Manager: Longina Wilkins

Year of birth: 1936

In FAMABUD since 1972

Education: Secondary economic school

Former jobs

in FAMABUD: Bookkeeper, deputy main bookkeeper

Languages : none

11. Personnel Dep. Manager : Eugenia Borkowska

Year of birth: 1938

In FAMABUD since 1963

Education: Secondary school

Former jobs

in FAMABUD: administration clerk, personnel clerk,

Languages : Russian - poor

12. Marketing Dep. Manager : Stanisław Tomaszewski M.Sc., Eng.

Year of birth: 1935

In FAMABUD since 1976

Education: High tech.

Former jobs

in FAMABUD: Deputy tech. director, head of investment dep., development specialist

Languages: German, Russian -poor

13. Social Dep. Manager: Jan Meller M.Sc.

Year of birth: 1952

In FAMABUD since 1883

Education: High pedagogical -Mikołaj Kopernik University in Toruń - 1977

Former jobs: clerk, head of the office PTTK in Szczecin

in FAMABUD: the same

Languages: French, Russian - poor

14. Data Proc. Dep. Manager: Kazimierz Braun M.Sc., Eng.

Year of birth: 1939

In FAMABUD since 1964

Education: High tech.

Former jobs

in FAMABUD: technologist, head of organization dep., head of data proc. dep., head of warehousing dep.

Languages: Russian, german - poor

Seriously ill - absent for 3 months

15. Security Dep. Manager: Zbigniew Kurzacz

Year of birth: 1945

In FAMABUD since 1990

One person department

16. Prod. Preparation Dep. Manager: Eugeniusz Pieniądz Eng.

Year of birth: 1939

In FAMABUD since 1956

Education : Szczecin Polytechnic

Speciality: Steel constructions - 1980

Former jobs: Since 1956 in FAMABUD

in FAM. : Fitter, Production Organizer, Section Manager

Languages: German, Russian - poor

Duties: Production planning, Materials and wages documents preparation

Own decisions: Wages- only bonuses, organizational and personal decisions in department

Director dec.: Nr of emploees, wages, changes in plans

Competence: Good knowledge of the factory, ready to collaboration, experiance in his field

17. Supplying Dep. Manager: Ryszard Kaczorowski

Year of birth: 1946

In FAMABUD since 1984

Education : Secondary economic school

Former jobs

in FAMABUD: supply clerk, supply specialist,

Languages : Russian, German - poor

18. Material Distr. Dep. Manager: Janina Jelińska

Year of bir : 1941

In FAMABUD since 1967

Education : Secondary pedagog. school

Former jobs

in FAMABUD: economist, supply clerk, warehousing clerk, deputy warehousing manager,

Languages : Russian - very good

19. Production Chief : Jerzy Suchodolski Eng.

Year of birth: 1929

In FAMABUD since 1977

Education :High tech.

Former jobs

in FAMABUD: production dep. manager

Languages: French, Russian - poor

20. Sale Dep. Manager: Teresa Żywodko

Year of birth: 1951

In FAMABUD since 1985 (1987-1990 maternal leave)

Education: Szczecin Polytechnic

Speciality: Industry economics - 1973

Former jobs: Chemical Factory "SZCZECIN" - Sale Manager

in FAMabud: Export Specialist

Languages : English

Duties :Sale of finished-good and services, looking for new customers in Poland

Director's decisions: Reduction of prices, bigger orders

Competence: good knowledge in her field, interested in the factory matters, engaged in work, ready to cooperation

21. W1 Manager: Zbigniew Purgot

Year of birth: 1943

In FAMABUD since 1961

Education: Secondary tech.school

Former jobs

in FAMABUD: turner, foreman

Languages: Russian - poor

22. **W3 Manager:** Tadeusz Saja

Year of birth: 1958

In FAMABUD since 1980

Education: Secondary tech. school

Former jobs

in FAMABUD: glinder, foreman,

Languages: German, Russian - poor

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App. V

SZCZECIŃSKA FABRYKA MASZYN BUDOWLANYCH "ZREMB-FAMABUD"

W SZCZECINIE

FINANCIAL REPORT TO MANAGEMENT
INFORMACJA EKONOMICZNA NARASTAJĄCO

za 6 miesięcy 1991 r.

SZCZECIN, **lipiec 1991 r.**

APPENDIX D

Characteristic of basic financial ratios for period 1.01 - 30.06.1991

			ACCRUING SINCE 1.01.1991			%		PLAN ON 1991	% of PLAN
			EXECUTION 1990	PLAN 1991	EXECUTION 1991	6/4	6/5		
1	2	3	4	5	6	7	8	9	10
.1.	Sales	mln.zł	36.323	55.814	34.643	95,4	62,1	126.854	27,3
2.	Cost of sale	"	30.943	42.671	21.754	70,3	51,0	96.168	22,6
3.	Capital profit /2-1/	"	5.380	13.143	12.889	239,6	98,1	30.686	42,0
4.	Other profit	"	670	1.857	823	122,8	44,3	2.314	35,6
5.	Total /3±4/	"	6.060	15.000	13.712	226,6	91,4	33.000	41,6
6.	Extraordinary losses	"	918	1.800	2.513	273,7	139,6	2.400	104,7
7.	Extraordinary profits	"	364	1.828	660	181,3	36,1	2.456	26,9
8.	Financial cost	"	-	-	3.191	-	-	-	-
9.	Turnover tax	"	118	5.528	552	467,8	10,0	12.956	4,3
10.	Book profit /5-6+7-9/	"	5.378	9.500	8.116	150,9	85,4	20.100	40,4
I.	Income	"	5.969	10.000	9.969	167,0	99,7	21.000	47,5
II.1	Income for taxation	"	5.964	10.000	8.897	149,2	89,0	21.000	42,4
2	Income tax	"	2.385	4.000	3.559	149,2	89,0	8.400	42,4
3	Profit after taxation	"	2.993	5.500	4.557	152,3	82,9	11.700	38,9

App D

1	2	3	4	5	6	7	8	9	10
	Including								
a/	Dividend	mln.zł	2.707	4.449	4.430	163,6	99,6	8.897	49,8
b/	Workers fund	"	x	701	x	x	x	1.441	x
	Including								
	- extra fund	"	x	483	x	x	x	994	x
4.	Costs level /2:1/ x 100	%	85,2	76,45	62,79	- 22,41	-13,66	75,81	-13,02
5.	Investments	mln.zł	754	x	500	66,3	x	2.994	16,7
6.	Finished investments	"	81	x	1.519	1.875,3	x	-	-

App U

APPENDIX D

Inventories in june 1991

			EXECUTION			PLAN ON 1991	%		
			30.06.1990	31.05.1991	30.06.1991		6/4	6/5	6/7
1	2	3	4	5	6	7	8	9	10
1.	Total inventories	mln.zł	18.369	26.548	29.328	18.995	159,7	110,5	154,4
	Including:								
1.1.	- raw material	"	13.473	6.749	6.440	18.180	47,8	95,4	35,4
	Including								
	- raw material in store	"	x	6.625	6.292	-	x	95,0	-
	- " in adaptation	"	x	98	109	-	x	111,2	-
	- " in way	"	x	26	39	-	x	150,0	-
1.2.	- finished goods	"	-	5.978	5.314	-	x	88,9	-
1.3.	- work in progress	"	4.826	11.821	17.574	815	364,2	127,2	215,6
1.4.	- interperiod settlement	"	70	-	-	-	-	-	-
2.	Receivables	"	7.514	9.829	12.329	-	164,1	125,4	-
3.	Creditors	"	11.026	12.710	13.163	-	119,4	103,6	-
4.	Bank credits	"	8.945	7.000	7.050	-	78,8	100,7	-
5.	Investment inventory	"	61	30	30	-	49,2	100,0	-
6.	Inventory increase	"	- 1.351	- 372	- 309	-	22,9	83,1	-

Art. 0

APPENDIX P

Direct and indirect hours analysis for 6 months of 1991 /total/

			EXECUTION		EXECUTION		DIFFERENCE
			TOTAL	ON 1 PERSON	TOTAL	ON 1 PERSON	7-5
1	2	3	4	5	6	7	8
1.	Attendence time	Hours	857.422	1.060	577.672	1.052	- 8
2.	Direct work time	"	696.465	862	475.063	865	+ 3
3.	Overtime	"	39.833	49	16.745	30,5	- 18,5
4.	Off booked time	"	160.957	198	102.609	187	- 11
5.	Including: - illnesses	"	64.541	80	43.072	78,5	- 1,5
6.	- family illnesses	"	5.856	7	2.856	5	- 2
7.	- leave	"	1.112	1,5	1.488	2,5	+ 1
8.	- waiting services	"	142	-	195	-	-
9.	- justified absence	"	7.785	10	3.786	7	- 3
10.	- unjustified absence	"	626	1	286	0,5	- 0,5
11.	- holidays	"	80.895	98,5	50.926	93,5	- 5

APPENDIX D

Direct and indirect hours analysis for 6 months of 1991 /administative/

			EXECUTION		EXECUTION		DIFFERENCE
			TOTAL	ON 1 PERSON	TOTAL	ON 1 PERSON	7-5
1	2	3	4	5	6	7	8
1.	Attendence time	Hours	218.553	1.056	152.103	1.048	- 8
2.	Direct work time	"	180.918	875	126.053	868,5	- 6,5
3.	Overtime	"	2.965	14,5	8	-	- 14,5
4.	Off booked time	"	37.635	181	26.050	179,5	- 1,5
5.	Including: - illnesses	"	11.960	58	9.232	63,5	+ 5,5
6.	- family illnesses	"	2.987	14,5	1.585	11	- 3,5
7.	- leave	"	944	4,5	656	4,5	-
8.	- waiting services	"	-	-	-	-	-
9.	- justified absence	"	1.536	7,5	780	5,5	- 2,0
10.	- unjustified absence	"	16	-	32	-	-
11.	- holidays	"	20.192	96,5	13.765	95	- 1,5

APPENDIX D

Direct and indirect hours analysis for 6 months of 1991 /indirect workers/

			EXECUTION		EXECUTION		DIFFERENCE
			TOTAL	ON 1 PERSON	TOTAL	ON 1 PERSON	7-5
1	2	3	4	5	6	7	8
1.	Attendence time	Hours	290.622	1.056	192.421	1.048	- 8
2.	Direct work time	"	234.242	851	163.976	893,5	+ 42,5
3.	Overtime	"	20.981	76	14.259	78	+ 2
4.	Off booked time	"	56.380	205	28.445	154,5	- 50,5
5.	Including: - illnesses	"	24.275	88	10.442	57	- 31
6.	- family illnesses	"	1.439	5	751	4	- 1
7.	- leave	"	80	-	-	-	-
8.	- waiting services	"	-	-	-	-	-
9.	- justified absence	"	1.954	7	803	4,5	- 2,5
10.	- unjustified absence	"	219	1	80	-	- 1
11.	- holidays	"	28.413	104	16.369	89	- 15

APP D

APPENDIX 8

Direct and indirect hours analysis for 6 months of 1991 /direct workers/

			EXECUTION		EXECUTION		DIFFERENCE
			TOTAL	ON 1 PERSON	TOTAL	ON 1 PERSON	7-5
1	2	3	4	5	6	7	8
1.	Attendence time	Hours	288.912	1.056	201.184	1.048	- 8
2.	Direct work time	"	229.422	840	158.101	825	- 15
3.	Overtime	"	7.799	29	431	2	- 27
4.	Off booked time	"	59.490	216	43.083	223	+ 7
5.	Including: - illnesses	"	26.432	96,5	21.554	112,5	+ 16
6.	- family illnesses	"	936	3,5	464	2,5	- 1
7.	- leave	"	88	-	-	-	-
8.	- waiting services	"	-	-	-	-	-
9.	- justified absence	"	4.167	15	2.139	10	- 5
10.	- unjustified absence	"	375	1,5	174	-	- 1,5
11.	- holidays	"	27.492	99,5	18.752	98	- 1,5

APPD

APPENDIX D

Employment in June 1991

			EXECUTION 1991	PLAN ON 1991	EXECUTION 1991	%	
						6:5	6:4
1	2	3	4	5	6	7	8
1.	Total employment		541	568	528	93,0	97,6
	Including						
1.1.	- administrative workers		142	140	135	96,4	95,1
1.2.	- direct workers		188	212	184	86,8	97,9
1.3.	- indirect workers		182	190	176	92,6	96,7
1.4.	- service workers		29	26	33	126,9	113,8

App D

APPENDIX D

Employment in a period from 1.01. to 30.06.1991

			ACCRUING SINCE 1.01.1991		%	PLAN ON 1991	%
			PLAN ON 6	EXECUTION ON 6	5:4		5:7
1	2	3	4	5	6	7	8
1.	Total employment		575	549	95,5	560	98,0
1.1.	Including - administrative workers		146	145	99,3	136	106,6
1.2.	- direct production		212	192	90,6	211	91,0
1.3.	- indirect production		191	183	95,8	187	97,9
1.4.	- services		26	29	111,5	26	111,5

APPENDIX D

Analysis of wages 1.01 - 30.06.1991

			ACCRUING SINCE 1.01.1991		%	PLAN ON 1991	%
			PLAN ON 6	EXECUTION ON 6	5:4		5:7
1	2	3	4	5	6	7	8
1.	Total wages fund	000'zł	6.040.155	6.019.333	99,7	12.418.965	48,5
2.	Impersonal wage fund /gross/	"	90.000	65.909	73,2	180.000	36,6
2.1.	Salaries for outer workers	"	9.720	9.720	100,0	19.440	50,0
3.	Personal wage fund /without divident from profit/	"	5.940.435	5.943.704	100,1	12.219.525	48,6
	Including						
3.1.	- administration	"	1.486.052	1.771.169	119,2	2.901.272	61,0
3.2.	- direct production	"	2.322.672	2.072.653	89,2	4.927.722	42,1
3.3.	- indirect production	"	1.896.657	1.827.176	96,3	3.922.167	46,6
3.4.	- services	"	235.054	272.706	116,0	468.364	58,2

APP D

APPENDIX D

Average salory in a period 1.01 - 30.06.1991

			ACCRUING SINCE 1.01.1991		%	PLAN ON 1991	%
			PLAN ON 1991	EXECUTION 1991	5:4		5:7
1	2	3	4	5	6	7	8
1.	Average wage	zł	1.721.865	1.803.320	104,7	1.821.300	99,0
1.1.	- administration	"	1.696.406	2.096.060	123,6	1.777.700	117,9
1.2.	- direct production	"	1.826.000	1.802.500	98,7	1.946.200	92,6
1.3.	- indirect production	"	1.655.024	1.659.752	100,3	1.747.800	95,0
1.4.	- services	"	1.506.756	1.563.681	103,8	1.563.500	100,0
2.	Productivity per 1 employee to sales	000'zł	97.068	63.101	65,0	226.525	27,9
3.	Average wage including profit	zł	1.913.388	2.003.793	104,7	1.897.000	105,6

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APP D

APPENDIX D

Average salories in June 1991

			EXECUTION 1991	PLAN ON 1991	EXECUTION 1991	%	
						6:5	6:4
1	2	3	4	5	6	7	8
1.	Average wage	zł	1.741.900	1.705.404	1.779.974	104,4	102,2
1.1.	- administration	"	2.035.400	1.695.048	2.108.199	124,4	103,6
1.2.	- direct production	"	1.684.200	1.821.066	1.796.659	98,7	106,7
1.3.	- indirect production	"	1.599.200	1.629.100	1.541.233	94,6	96,4
1.4.	- services	"	1.574.600	1.454.884	1.616.413	111,1	102,7

APP D

APPENDIX 9

Costs in general for period 1.01 - 30.06.1991

			EXECUTION 1990	PLAN ON 1991	EXECUTION 1991	%		PLAN ON 1991	%
						6/5	6/4		6/9
1	2	3	4	5	6	7	8	9	10
1.	Total costs /2+3/	000'st	33.971.164	52.662.000	39.464.768	74,9	116,2	112.514.000	35,1
2.	Total material	"	23.468.203	37.238.000	27.740.524	74,5	118,2	80.883.000	34,3
2.1.	- depreciation	"	2.732.204	7.071.200	6.415.733	90,7	234,8	14.142.400	45,4
2.2.	- raw material	"	15.466.909	23.400.000	15.911.156	68,0	102,9	52.200.000	30,5
2.3.	- energy	"	2.459.163	3.085.000	3.653.167	118,4	148,6	6.170.600	59,2
2.4.	- outer work	"	233.621	382.000	459.513	120,3	196,7	870.000	52,8
2.5.	- transport	"	832.430	1.583.800	286.569	18,1	34,4	3.600.000	7,9
2.6.	- reparation	"	361.074	660.000	325.255	49,3	90,1	1.500.000	21,7
2.7.	- other	"	1.382.802	1.056.000	689.131	65,3	49,8	2.400.000	28,7
3.		"	10.502.961	15.424.000	11.724.244	76,0	111,6	31.631.000	37,1
3.1.	- wage	"	3.791.634	6.040.155	5.967.039	98,8	157,4	12.418.965	48,0
3.2.	- wage tax	"	750.795	1.208.031	1.172.866	97,1	156,2	2.483.793	47,2
3.3.	- MHI	"	1.509.482	2.718.070	2.389.491	87,9	158,3	5.588.534	42,8
3.4.	- business trips	"	44.566	72.744	56.830	78,1	127,5	144.708	39,3
3.5.	- special funds	"	9.903	-	-	-	-	-	-
3.6.	- other workers funds	"	39.287	80.000	205.878	257,3	524,0	160.000	128,7
3.7.	- taxes	"	917.129	1.125.000	1.002.015	89,1	109,3	2.475.000	40,5
3.8.	- bank	"	3.208.349	4.000.000	290.444	7,26	905,3	8.000.000	3,6
3.9.	- other	"	231.816	180.000	639.681	355,4	275,9	360.000	177,7

AHVD

APPENDIX D

Assortment of sale in a period 1.01 - 30.06.1991

			PLAN ON 6 1991	EXECUTION IN 6 1991	% 5/4	PLAN ON 1991	% 5/7
1	2	3	4	5	6	7	8
I.	Sales in 1991	000'zł	55.814.000	34.642.693	62,1	126.854.000	27,3
	Including:						
1.	Crane 2B-75/100	NR / 000'-	24 / 30.720.000	5 / 5.934.673	20,8 / 19,3	60 / 76.800.000	8,3 / 7,7
2.	Crane 2B-20	"	2 / 972.000	- / -	- / -	2 / 972.000	- / -
3.	Crane 2B-120/200	"	3 / 5.160.000	- / -	- / -	5 / 8.600.000	- / -
4.	Bogie Frames	"	421 / 15.932.000	437 / 21.834.500	103,8	871 / 32.592.000	50,2
5.	Spare parts for cranes	000'zł	1.000.000	649.700	65,0	2.000.000	32,5
6.	Spare parts for frames	"	450.000	1.347.369	299,4	1.000.000	134,7
7.	Half finished products	"	-	4.239	-	-	-
8.	Other	"	-	180.000	-	-	-
9.	Repairs of cranes	NR / 000'zł	- / -	- / -	- / -	4 / 1.280.000	- / -
0.	Reels and drums	000'-	700.000	532.994	76,1	1.450.000	36,8
1.	Drums	"	180.000	32.297	17,9	360.000	9,0
2.	Cog-wheels	"	100.000	160.254	160,3	200.000	80,1
3.	Other	"	600.000	3.966.667	661,1	1.600.000	247,9

Appendix E

ZREMB - FAMABUD

Report of make up of cost of sales figure of 21,754 mln zl included in the management report for the month of June 1991.

Due to size the of the profit shown in the report, appendix 'E', of nearly 10,000 mln zl the make up of the cost figure was investigated.

The break down of the cost figure was traced to a schedule summarising total costs - schedule I.
Within schedule 1 an analysis was made of the cost of producing the bogie frame - Rama 26. This figure was traced to schedule 2. which contains transfers from detailed costing sheet schedule 3.

The transfer of 12 frames to cost of sales as shown on item 16 to schedule 3 is worked out by taking item 17 on the standard costing sheet for the production of 1 bogie frame, schedule 4, and multiplying by 12. i.e.
12 x 28,644,836 = 343,738,032

This cost is before taking into account overhead recovery which is shown on item 18 to schedule 4.

Schedule 1 also reveals 3,019 ml zl shown as other income and expenditure. It transpares that included in the income is the substantial income received for the rent of the other factory in Szczecin at a rate of 500 ml zl per month ($ 50 000). "Expenses" exactly match this income and we have estabilished verbaly that such "expenses" include cost of running the factory "hotel" and canteen. Such netting off results is further information hidden from management view and can only serve to produce reports which are misleading.

INTERNALLY GENERATED
SALES FORECAST FOR THE YEARS 1992 TO 1995

name of product	years			
	1992	1993	1994	1995
cranes	21.000	30.000	50.000	50.000
bogie frames	52.000	60.000	60.000	60.000
new products for:	63.000	120.000	120.000	150.000
Polar Box	7.000			
Niwar	10.000			
HaCon	10.000			
Windhoff	15.000			
Retech	6.000			
Volvo	7.000			
other	8.000			
TOTAL	136.000	180.000	230.000	260.000

APPENDIX

SUMMARY ANALYSIS OF THE SALE\PRODUCTION PLAN FOR THE PERIOD 1st OF JULY TO 31st OF DECEMBER 1991

Total production hours required reference sales plan 1	
1 July - 31 December inclusive	97 271
Total production hours not required after considering W.I.P.	
6 - ZB75 - 100 cranes 75% complete	9 537
3 - ZZ120 - 200 cranes 60% complete	8 521
48 - 26TNa.bogie frames 70% complete	4 603
Spares & miscellaneous 40% complete	433
	23 094
New production hours required	74 177

Total hours available 1 July - 31 December

132 days x 180 direct workers = 23 760 man days

considering holidays

5 statutory days

10 personal days

117 days x 180 direct workers = 21 060 man days

average working day 8.4 hours

21 060 x 8.4 = 176 904 man hours

available hours at 100% yield 176,904

available hours at 80% yield 141,523

available hours at 75% yield 132,678

available hours at 70% yield 123,832

Factory yield (efficiency) to match produced hours required.

42% 74 299

1/2/3/4

Therfore the first conclusion is that by maintaining factory yield (efficiency) 42% with the present labour force the new production hours required could be achieved.

SALES PLAN PREDICTION 1992 -1995

CONVERTED TO PRODUCED HOURS ON PRO-RATA BASIC COMPARED WITH 1991 SALES PLAN

	1992		1993		1994		1995	
	QTY	Hours	QTY	Hours	QTY	Hours	QTY	Hours
Cranes	29	44917	41	62894	89	32211	89	132211
Bogie frames	1030	164900	1250	200500	1250	200500	1250	200500
Spares								
Polar box								
Nivar								
HaCon		127500		161925		215475		242250
Wind Hoff								
Retech								
Volvo								
Total hours		337,317		425,319		548,186		524,961

Direct labour planning				
232 @ 75%	337629			
292 @ 75%		424947		
377 @ 75%			548648	
396 @ 75%				576298
249 @ 70%	338211			
314 @ 70%		426499		
404 @ 70%			548745	
424 @ 70%				575910

The second conclusion is that by reducing direct manning and achieving a higher yield (efficiency) the net production hours could be achieved.

That is - reduce present direct manning by 75 to 105 direct
available hours at 100% yield 103194
available hours at 72% yield 74299
The yield (efficiency) of a mixed economy manufacturing company should be approximatly 75% (typical in UK). This would ensure a satisfactory recovery of overleads, when comparising this to a West Eurepan economy and structure.

When considering the overall situation the manning levels are as follows
138 administration including 8 part time
211 indirect including 4 part time

Combining administration plus indirect workers the result is as follows.
349 non productive staff (indirect)
180 productive staff (direct)

1.94:1 in favour of non productive (indirect)

If Famabud was structured in Western Europe the norm would expect to see the ratio reversed. However it must be noted that employment costs in Poland are significantly lower therefore the effect is not so serious. Certainly with the information reported to date the Famabud organization

should be reduced in terms of both direct and indirect labour. The question must be however, by how much? In order to present a more balanced appraisal, the sales\production requirements for 1992-1995 have been interpreted and converted on a pro-rata basis compared 1991. An approximation using this method is not ideal, but it does present a comparison.

Subject to the accuracy of the sales\production forecast the initial conclusion would be to retrain the present direct manning levels and investigate the labour market to meet the upturn in demand. This situation would also temper any decision on planned disposal of assets. In fact it would be appropriate to construct a capital expenditure plan to secure manufacturing efficiency.

This argument is questionable when the move to a market economy accelerates and social demands increase the cost of both direct and indirect labour. Therefore it is proposed that labour cost are contained even though the immediate effect is relativly insignificant when compared with other cost of sales. It is essential in an international contex that the adages of quality, price and delivery is paramount to success, this is why the labour cost advantage must be maintained.

JULY - DECEMBER SALES\PRODUCTION PLAN

Production	description	july	aug	sept	oct	nov	dec	total
detail ZB20	mobile crane	0	0	0	4	4	4	12
labour(hrs) 1055					4220	4220	4220	12660
material(zl)								
detail ZB75-100	tower crane	3	3	3	3	3	3	18
labour(hrs) 2119,3		6358	6358	6358	6358	6358	6358	38146
material(zl)								
detail ZBW75-100	tower crane	0	0	0	0	0	0	0
labour(hrs) 2551								
material(zl)								
detail ZB120-200	tower crane	1	1	1	1	1	0	5
labour(hrs) 4734		4734	4734	4734	4734	4734	0	23670
material(zl)								
detail 26TNa	bogie frame	48	48	47	0	0	0	143
labour(hrs) 137		6576	6576	6439	0	0	0	19591
material(zl)								
detail 3TNb	bogie frame	2	1	1	0	0	0	4
labour(hrs) 176		352	176	176	0	0	0	704
material(zl)								
detail spares	tower crane	20%	0	0	20%	0	0	40%
labour(hrs)	spares	523	0	0	523	0	0	1046
material(zl)								
detail spares	bogie frames	35%	0	0	35%	0	0	70%
labour(hrs)	spares	55	0	0	55	0	0	110
material(zl)								
	TOTAL HOURS	18598	17707	15312				95927
			17844	15890	10578			

Part No	Depreciation	July	Aug	Sept	Oct	Nov	Dec	Total
Total hours brought forward		18598	17707		15312			95927
				17844		15890	10578	
detail liebheer	drums	0	0	0	0	0	0	0
labour(hrs)		0	0	0	0	0	0	0
material(zl)		0	0	0	0	0	0	0
detail Nivar	drums &	0	0	0	100	0	100	200
labour(hrs)	reels		0	0	45	0	45	90
material(zl)			0	0		0		
detail	davits	0	0	0	0	0	0	0
labour(hrs)		0	0	0	0	0	0	0
material(zl)		0	0	0	0	0	0	0
detail Sweden	gear wheels	0	0	0	0	0	0	0
labour(hrs)		0	0	0	0	0	0	0
material(zl)		0	0	0	0	0	0	0
detail HaCon	boat trailor	0	0	0	3	3	0	6
labour(hrs)		0	0	0	420	420	0	840
material(zl)		0	0	0				
detail RFN	shreeder	1	1	0	4	4	2	12
labour(hrs)		22	22		88	88	44	264
material(zl)								
detail Electrim	combustion	0	0	0	0	0	0	0
labour(hrs)	gas control	0	0	0	0	0	0	0
material(zl)		0	0	0	0	0	0	0

detail	Euclid	:bodies	:	0	:	0	:	0	:	10	:	10	:	5	: 25
labour(hrs)		:	:	0	:	0	:	0	:	60	:	60	:	30	:150
material(zl)		:	:	0	:	0	:	0	:		:		:		:
		:	:		:		:		:		:		:		:
		TOTAL REQ	18620				17752				15925				97271
				17866				16458				10652			

App. G
24.07.91
App. K

Pracochłonność technologiczna
na ramę 3TNb. — BOGIE FRAME

Lp.	Grupa robót	T [godz]	Uwagi
1.	Wydz. Krajalni i Obróbki Plastycznej a) czyszczenie blach b) cięcie kształtowników c) cięcie blach	32,20	
2.	Wydz. Mechaniczny a) obróbka wiórowa	52,532	
3.	Wydz. Spaw.-Montażowy a) wyk. przekładni b) montaż	81,983	
4.	Wydz. Spaw.-Montażowy a) wyk. wyposażenie elektryczne	—	
5	Wydz. Spaw.-Montażowy a) malowanie	9,221	

Σ 175,936

Kierownik Pr... Gł. Technologa
...
inż. Janusz C...

App. G
24.07.91 r.

Pracochłonność technologiczna na żuraw ŻB-20

PROTOTYPE CRANE
SELF ERECTING

Lp.	Grupa robót	T [godz]	Uwagi
1. W1	Wydz. Krojenia i obróbki Plastycznej a) czyszczenie blach b) cięcie kształtowników d) cięcie blach	103,0	
2. W3	Wydz. Mechaniczny a) obróbka wiórowa	438,0	
3. W2	Wydz. Spaw.-Montażowy a) wyk. przekładni b) montaż	391,0	
4. W2	Wydz. Spaw.-Montażowy a) wyk. wyposażenia elektrycznego	66,0	
5. W2	Wydz. Spaw.-Montażowy a) malowanie	57,0	
	Σ	1055,0	

inż. Janusz

App. G

24.07.91

Pracochłonność technologiczna na ramę 26TNa

BOGIE FRAME

Lp.	Grupa robót	T [godz.]	Uwagi
1.	Wydz. Krajalni i Obróbki Plastycznej a) czyszczenie blach b) cięcie kształtowników c) cięcie blach	21,122	
2.	Wydz. Mechaniczny a). obróbka wiórowa	43,49	
3.	Wydz. spaw. - Montażowy a). wyk. przekładni b). montaż	63,522	
4.	Wydz. spaw. - Montażowy a). wyk. wyposażenia elektrycznego	—	
5.	Wydz. Spaw. - Montażowy a). malowanie	8,527	

Σ 136,661

Kierownik ... [illegible]
inż. Janusz C[illegible]

App G
24.07.91

Pracochłonność technologiczna na żuraw ZB-W-75/100

Lp.	Grupa robót	T [godz]	Uwagi
1.	Wydz. Krajalni i Obróbki Plastycznej a) oczyszczenie blach b) cięcie kształtowników c) cięcie blach	407,10	
2.	Wydz. Mechaniczny a) obróbka wiórowa	1023,70	
3.	Wydz. Spaw.-Montażowy a) wyk. przekładni b) montaż	851,46	
4.	Wydz. Spaw.-Montażowy a) wyk. wyposażenia elektrycznego	133,60	
5.	Wydz. Spaw.-Montażowy a) malowanie	125,4	
	Σ	2551,26	

24.07.91

Pracochłonność technologiczna na żurawi ŻB-120/200 [illegible]

Lp.	Grupa robót	T [godz]	Uwagi
1.	Wydz. Krajalni i Obróbki Plastycznej a) oczyszczenie blach b) cięcie kształtowników c) cięcie blach	854,45	
2.	Wydz. Mechaniczny a) obróbka wiórowa	1639,88	
3	Wydz. Spaw.-Montażowy a) wyk. przekładni b) montaż	1797,28	
4.	Wydz. Spaw.-Montażowy a) wyk. wyposażenia elektrycznego	255,90	
5.	Wydz. Spaw.-Montażowy a) malowanie	186,62	
		Σ 4734,13	

TABLE 1 - P A T T E R N O F C O S . S

	Specification	1988		1989		1990		5 months 1991		30.06.1991
		mill.zł	%	mill.zł	%	mill.zł	%	mill.zł	%	mill.zł
1.	Depreciation	235	3,3	304	2,1	5.257	6,9	5.349	14,9	6.416
2.	Consumption of materials	4.450	62,8	6.444	45,1	36.577	48,2	14.445	40,2	15.950
3.	Power	308	4,3	732	5,1	5.511	7,3	3.098	8,6	3.653
4.	Subcontractors' processing	77	1,0	415	2,9	603	0,8	448	1,2	459
5.	Transport services	188	2,7	366	2,6	2.485	3,2	276	0,8	286
6.	Repair services	150	2,1	187	1,3	898	1,2	271	0,8	325
7.	Wages	672	9,5	2.324	16,3	8.701	11,5	5.039	14,0	5.967
8.	Charges on wages	370	5,2	1.292	9,0	5.081	6,7	3.008	8,4	3.562
9.	Deduction for Social Fund and Housing Fund	20	0,3	30	0,2	121	0,2	172	0,5	206
10.	Deduction for other funds	159	2,2	4	-	-	-	-	-	-
11.	Bank service	216	3,0	1.416	9,9	5.529	7,3	1.798	5,0	1.002
	there of: interest on credits	212		1.352		5.253		1.614		1.508
12.	Business travels	7	0,1	23	0,2	100	0,1	40	0,1	57
13.	Hired services	244	3,5	766	5,3	5.009	6,6	2.017	5,5	640
14.	Total costs	7.096	100	14.303	100	75.812	100	35.961	100	39.502

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TABLE 2 - NON-OPERATING COSTS

	Specification	1988		1989		1990		5 months 1991	
		mln zl	%	mln zl	%	mln zl	%	mln zł	%
	2	3	4	5	6	7	8	9	10
1	Wages with charges	230	26,2	764	25,8	3.898	26,7	2.424	32,5
2	Costs of delegations	5	0,6	22	0,7	99	0,7	40	0,5
3	Office costs	23	2,6	55	1,9	243	1,7	132	1,8
4	Financial costs	216	24,6	1.416	47,8	5.529	37,9	1.798	24,1
5	Depreciation	36	4,1	37	1,2	417	2,9	356	4,8
6	Taxes /road, real estate tax/	84	9,6	91	3,1	953	6,5	840	11,3
7	Deductions for Social and Housing Funds	20	2,3	30	1,0	121	0,8	172	2,3
8	Welfare service	31	3,5	75	2,5	552	3,8	206	2,8
9	Others	233	26,5	471[x]	16,0	2.788	19,0	1.481	19,9
	TOTAL	878	100,0	2.961	100,0	14.600	100,0	7.449	100,0
	Index of non-operating costs - %		15,6		30,74		24,06		40,4

x - In the costs there is deduction for the Central Fund of Development of Science and Techniques.

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TABLE 3 - DEPARTMENTAL COSTS

No	Specification	1988		1989		1990		5 months 1991		30.06.91
		mln zl	%	mln zl	%	mln zl	%	mln zl	%	
1	2	3	4	5	6	7	8	9	10	11
1	Depreciation	141	10,8	183	5,4	2.889	16,7	2.957	23,3	3.545
2	Consumed materials	66	5,0	118	3,5	354	2,0	88	0,7	11
3	Costs of power	262	20,0	621	18,4	4.322	25,0	2.469	19,4	2.553
4	Costs of repairs self-made and commisioned	380	29,0	673	20,0	4.104	23,8	2.844	22,4	3.102
5	Material costs									17
6	Wages	197	15,0	836	24,8	2.623	15,2	1.358	10,7	1.432
7	Charges on wages	99	7,6	439	13,0	1.150	6,7	862	6,8	931
8	Costs of auxuliary departments	130	9,9	389	11,5	2.243	13,0	1.973	15,5	2.302
9	Other costs	36	2,7	111	3,4	296	1,6	150	1,2	
	TOTAL	1.311	100,0	3.370	100,0	17.273	100,0	12.701	100,0	13.920
	Index of departmental costs %	434,70		411,27		562,45		849,16		786,60

Departmental costs are calculated by an index in relation to direct wages with charges.

App. H

ASSESMENT OF THE MANUFACTURING
FACILITY AND SUPPORTING SERVICES

APPENDIX

PRODUCTION PROCESS AT ZREMB-FAMABUD SZCZECIN
June/July 1991

INTRODUCTION

Zremb-Fambud is located in Szczecin North West Poland and has been in operation for 35 years with a principle product designed, marketed and produced namely a range of 3 tower cranes. During 1982 they introduced a trailer bogie frame into the production range. There are currently two variances of the bogie design in production.

The factory occupies a total area on one site of 200,000 square meters. This area is then subdivided as follows:

63,000 square meters factory area
46,000 square meters production area
14,000 square meters enclosed storage area
11,000 square meters open storage area

The remainder of the area is divided between offices, services for the workforce, vehicle maintainance, security. There is a second site in Szczecin which has been leased off.

The total number of staff employed in the company at the end of June 1991 is 532. This can be catagorised as follows:

Management	65	
Administration	71	
Other indirect	211	
Total indirect	347	65.2 %
Total direct	185	34.8 %
Total employed	532	

Organisation charts are available and comprehesively documented. The chain of command is apparent including the areas of activity and responsibility. Appendix A/S.

Interviews have been conducted with the following managers to establish a comprehensive understanding of the Famabud organisation.

Administration
Design
Technological (Production Engineering)
Production Planning
Inspection (quality)
Purchasing
Stores Administration
Maintainance
Services
Production Director and Manager
Metal Forming Manager
Machine Shop Manager (includes heat treatment)
Fabrication Paint and Assembly Manager

At this juncture certain conclusions can be established, and may be used as an initial basis for the first level of the decision making process.

INTERIM CONCLUSIONS

The system and procedures for the effective working and control of the operation are available. This can be substanticated by various appendicies attached to the report. However during the investigations and random checks it is evident that only the systems & procedures to satisfy external investigations are maintained to and any level of satisfaction.

Examples of these as follows:

Instrument records for calibration
Process planning route cards for manufacture
Individual crane build and test data
Planned maintainance records
Heat treatment test and inspection data
UDT and POLCARGO visit records and recommendations
Certain aspect of cost information

What concerned us where the system and procedures that have been allowed to lapse or totally disregarded.

Examples of these follows:

Updating of process times route cards. Appendix A/4
Drawing changes not fully documentated
Material costs not current
Scrap and rejection reports not up to date
Work being processed without the appropriate documentation.

It must be stressed that the above are examples and do not constitute the full list in either of the catagories recorded. The conclusion on this aspect of the operation is that, SYSTEM and PROCEDURES must be follows. The cost of sales figures used are based on original estimates and not

fully substantiated by factual recording and update. The suggested rejection percentage of 0,02 - 0,12 % of the sales value is not representative of the actual. The more realistic is probably in the order of 3,0 to 5,0 % . This is evident when there can be seen quantities of unidentified material in various degree's of finish through out the manufacturing area.

Therefore the first conclusions to be reached are: that the systems and procedures presented by the various disciplines in the company, are well founded, comprehensive and perfectly satisfactory to meet the requirements for effective operation and control. However certain key elements of the procedures have been allowed to lapse and it would be a recommendation that an urgent review of the situation is carried out with suitable training given to ensure the continued control of systems and procedures. Then the company can move forward to a consolidated position.

DESIGN

Currently there are 3 crane designs in production ZB 756/100, ZB-W-75/100, ZB-120/200 in addition there is a further design ZB20 built as a prototype waiting full test and approval. Finally there is a design concept ZB-S-1000, which according to the Design Manager will take two years to develop.

While it must be stressed that the writer is not an authority of crane design and use it is evident that the current production range of 3 relies on past technology and FACTOR OF SAFETY which is achieved by maximising the size and hence weight of the structure and drive mechanism. By comparison the competition has in the order of 20% less weight than the equivalent FAMABUD crane. One effect of this is when a cost comparison is carried out, a crane produced in Germany cost of USD 7 per Kg. The FAMABUD equivalent cost of USD 3 per Kg, until the 20% weight differential is considered. The cost advantage while not totally lost is however somewhat absorbed.

Three other areas of note must be, the oversize of the gear train, non-automatic counter weight compensation, questionable electrical intergrety.

Unfortunately some of the questionable design features of the existing range are manifest in the ZB 20 prototype.

There must be some confidence in proceeding with the ZB 20, this is supported by the changing construction requirements in Poland. Subject to the time factor and to take advantage of the export potential the design concept should be reviewed to include technological advances. If this is delayed the market will be restricted to Poland and its near neighbours in the East. Realistically and in order in the short term to maintain production and sales it may be necessary to move forward in two stages.

1/ Complete the prototype evaluation and U.D.T. approval produce a pilot production batch of units (quantity to be influenced by market intellegence). Launch the product in the domestic markets and simultaneously launch in the East.

2/ Review the design concept on a defined time schedule. Incorporate the new features with a priority to the technological advances in crane design and manufacture.

This proposal would help to secure the short term situation and act as a spring board for the future success of Famabud. There are currently 10-15 cranes of the three existing designs in 'work-in-progress' (the lack of system control demonstrates the need to approximate the work-in-progress). A proposal would be, to ensure a balance of component manufacture together with bought-out supply and complete those units and then market them with a generous discount. The criteria would be to recover cost plus.

We were encouraged to see a substantial boat trailer with a pneumatic raise/lower launch facility that was being produced for approval of a German company HaCon. Subject to this design and manufacture meeting

approval standards there is a potential order for up to ten boat trailers by the end of 1991.

A summary to date must be that bogie frames (2 types), current design cranes W.I.P., the ZB 20 piiot batch of cranes, plus the boat trailer; together constitute a reasonable manufacturing foundation for the next three or four months. This must be tempered by the need not to increase stock and W.I.P. Evidence would suggest that stocks built up without considering the ability to finance. Surplus direct and where possible indirect labour hours should be taken as opportunity hours to recognize and implement a more efficient manufacturing layout.

For consideration, the Design department's ability to react to the need for design changes in impaired by the fact that they still employ traditional methods of presentation. There must be a case for a CAD system to be introduced. This after the learning curve will condense the lead time for the completion of original designs, changes of designs, updating the current design standards. A Hard and Software package of approximate capacity and the facility to be interfaced with CAM programme in the future, could be installed with training for about USD 60,000.

MANUFACTURE

The above contains some of the problems associated with manufacture. Itemised are the areas of particular concern with proposals for correction.

1. Manufacturing Factory Layout
2. Quality and Control
3. Machine Tool Utilization
4. Visual work station load board
5. Regular reviews with design, marketing, quality
6. Review of available produced hours and manufacturing efficiency
7. General comments

1. Factory layout

The initial concern must be the under par utilisation of factory working area. A fragmented location of the various disciplins within production. The general disregard of safe working practice. A general aura of clutter that detracts from a purposeful working environment.

Initially the layout of the production facility was, no doubt, instigated with good working practice. During the passage of time the logical sequence of manufacture has been disregarded and this has resulted in 'there's a space lets put it there'. Result: inefficiency resulting in lost time, unnecessary material handling, lost components, the need for additional work to be carried out. This lengthens the lines of communications, introduces the degrad of quality (ie.where a cleaning operation requiring the use of 'off-hand' grinder is in proximity to finished parts). There are other instances of the layout effect but the forgoing illustrates the problem. With reference to Appendix A/1, this summarises the current position in the areas marked on the map.

A. A fully enclosed cutter grinding area, together with a toolroom for the manufacture and repair of Jigs and Fixtures. Plus a tool stores. This is probably a suitable location and the working areas reflect a reasonably disciplined situation. There was an absence of control documentation. The stores area could benefit from some reorganisation.

B. This was a mixed bag of activities ranging from, prototype build, crane step and platform fabrication.

Not a satisfactory situation. Confidentiality would suggest prototypes be in a discrete area not mixed with production. Because this is an enclosed area with the appropriate services, ideal for prototype activity plus any form of test & evaluation. There is sufficient room to layout a completly self contained area for Prototype. Test and evaluation.

C. Material preparation, shotblast, guillotine, forming, flame cutting, fettling, plus some drum fabrication.

In principle the action to contain preparation and forming in one area adjacent is that raw material storage area is sound. The question however must be, can the shotblasting facility be reduced or disposed of if the action was taken to store materials under cover. It is suggested that by addressing the layout in this area the positioning of machines could be improved without detracting from 'safe and effective working'. The shotblast facility reduced (to process castings/forgings only) and the 'freed' space be made available for vertical steel sheet racks plus section steel racking using the void space, above head height. The space outside the enclosed factory, if not totally but in substantial part, could be freed for disposal.

D. Work-in-Progress storage, cab fabrication, main frame fabrication, finish part stores, tower and Jib fabrication, assembly area, large fabrication storage.

Again the initial idea must have been that, a natural progression from material preparation would be to fabricate. There can be no criticism of this thinking, even to having a W.I.P. store to ensure control of issue for fabrication. The problem is that the storage areas are not-defined. This is interspersed with fabrication and assembly area. This area could be improved by concentrating the manufacturing activity on one side of a central gangway for the length of the area C. If this is not sufficient, cross the gangway and return up the opposite side. This then allows the holding and stores areas to continue at the end of this flow and the area can be identified and controlled to better effect.

E. General machine shop, tool store, gear cutting, W.I.P. stores, gear shaft sub assembly, gear box sub assembly, heat treatment.

The machine shop has relied on similar machine grouping which is an accepted principle where there is no possibility of applying flow line

techniques. The area then continues to the gear box manufacturing section which includes gear cutting, blank forming, gear box machining, this is, interspersed and further interrupted by storage of raw materials, that is gear blanks, gear cases, pedestal castings, etc. This again could benefit from a progressive flow down the length of the area and planned in such a way that gears requiring a heat treat, and the operations prior to heat treat, should be in close proximity. Examples would be the subassembly areas for bearings to gears then gear assemblies to gear boxes. While the storage areas are better defined they may benefit by some relocation within the area. A principle for consideration for work flow could be a holding area either side of central gangway for material, progressive machinning each side of gangway via heat treatment to assembly or subassembly.

F. Induction Hardening

An investigation is needed to determine the feasibility of bringing the total Heat treat facility including the support service together in one area.

G. Power drum assembly and test. Main Ring Gear drive machining. Rework area and storage.

This area requires a complete reorganisation and defined work stations. The impression was that this was an overflow section and not necessarily connected with activities in close proximity.

H. Large capacity horizontal boring machines. Bogies frame machining, and ,although not defined, crane main frame machining.

Any reorganisation of the shop layout would have to revolve around these machines. Their position is fixed and the discription and cost to relocate would be disportunate.

J. Crane main frame fabrication. ogie frame fabrication and assembly interspersed with stores holding areas.

This area would benefit by defining to better effect by some form of separation the bogie frame and crane main frame manufacture.

K. Tower and Jib fabrication with detail storage of fabrication items. Not a problem except one of housekeepping.

L. Bogie Frame Fabrication

This fabrication area split from area 'N' also producing bogie frame fabrication.

M. Leased space for the manufacture and assembly of refridgerated containers.

Wrongly sited splits domestic (Famabud) manufacturing.

N. Idler drum and bogie frame fabrication

Refer to 'L' for comments.

O. Shotblast and Paint

By condensing the other areas of manufacture this could be relocated hence releasing the area for alternative use i.e. leasing. There would however need to be some disposal of capital assets. There are two paint chambers not fully commissioned.

2. Quality and Control

This must be an area of particular concern. If Famabud intends producing for a wider international market, they would be subject to quality

audits. The present situation would mean non-approval. They have the necessary plant and machinery to produce to a high standard of finish. There is clear evidence that Where they have achieved the appropriate standard when required. The whole standard is reduced by inappropriate storage, handling, identification. Damage was evident on finish parts because they were in direct contact with the floor. Bearings for gear boxes were left exposed to the air which left them vulnerable to contamination. Machine finishes were not unprotected. Welded structures stored in a manner that would cause permanent deformation. Inappropriate manufacturing activities taking place side by side with the resultant damage to the standard. Little or no evidence of the appropriate control documentation with the work being processed. No identification of inspection approval during manufacture. No formal/acceptable identification of scrop and rejects. This situation is symptomatic of controls and procedures not being enforced. Refer to B.S.I. publication Appendix A/2 for the scope of controls required.

3. Machine Tool Utilization

With the present workload there is a large surplus of capacity of plant and machinery. This suggests a disposal programme for either trade-in against high technological equipment or to generate some revenue. Because of the present economic climate not only in Poland but further afield it may be prudent to keep the underutilized equipment. Thus, if the plant is taken and stored away from the production area it may ease the problems associated with factory reorganisation. A spot check on three separate occasions suggested an average utilization of 30 % during the one shift working. Plant list is attached as Appendix A/3.

3. Visual work station load board

It is difficult for the casual observers to get a feel for the level of activity in any area. What are the loaded hours. What is the priority of

manufacture. Have we an overload situation. This form of support service is essential for forward planning it demonstrates an awareness that is not just a cliche.

5.Regular reviews with design marketing and quality

There needs to be cross pollination of ideas and problems associated in the discipline identified. There would seem to be no formal contact where a problem is analysed and corrected.

6. Review of available produced hours and manuifacturing efficiency

There needs to be an urgent review of available hours matched against required hours. Surplus labour is a problem that has to be identified. The current shop efficiency (Yield) is probably be less then 50% of attended hours. Because of the structure and employment legislation there will be difficulties in reducing both direct and indirect labour. One of the alternative already reported is to use the opportunity labour for alternatives work. That is the surplus labour can be used to assist with reorganisation of factory. During discussions with the Production Director and the respective subordinates there were some emphasis laid on the fact that the labour force is flexible within their individual skill band. The maintainance of plant and machinery could be improved by utilizing the appropriate available skills to greater effect. The principle concern must be under this subject heading: What is Famabud's true labour rate ?

7. General Comments

There are areas of cost involvement that have been difficult to establish. For example, how much is spent on consumable items, cutting tools, welding consumables, etc. can thisexpenditure be contained. While accepting that social conditions vary from country to country, a way must be found of reducing the size of the operation in direct, indirect and management man power. Two suggestions have been submitted to assist in

either correcting or supporting two sensitive departments, they are :

a/ Investment in a CAD system for Design Department.
b/ Assigning a Systems/Quality Engineer for the Quality/Inspection Department.

Review of ZREMB-FAMABUD

The Company have shown a dramatic downturn in their market share for tower cranes. There are various reason for this decline, which are well documentated. The situation has been aggravated by the fact that the present designs for the three variances of crane in current manufacture are reliant on dated designs and the product is of questionable quality. Suggestion have been presented in this appendix how they may improve the situation in the short and then the longer term. This has to be at least a two stage plan in order to halt the current situation and then build on a more secure basis. We have seen the basic need to reasses the management and then the staffing levels initially in both design and quality. An opinion would suggest a new design mind who could break the yoke of the traditional design concept. There is evidence of reluctance to change the concept due to under estimating the needs of a broadening market place and competition from the West. This is further amplified by the quality standards in the West being to a higher specification and the trend will force the standards even higher.

The proposal of a two stage plan will have to apply to the new ZB 20 crane. Stage 1 to approve, and then market the present design this will secure the short term. Stage 2 improve design and expose to the wider market potential.

Complete the manufacture of the ZB/75-100, ZB-w-75/100 and ZB/120-200 current W.I.P. and sell this stock even if there is a need to reduce the price to a cost plus basis. Co-incidental with this it is essential to reduce stock and work in progress. The danger is that bogie frame manufacture will be used to subsidise slow moving stock. There is a need

establish a forward schedule for the two bogie frames in production to safeguard the short term.

Quality control and procedures should be substantially improved with immediate effect. There is a need to nvestigate the possibility of an external assignment to accelerate the action.

The systems and procedures are comprehensive and would stand up to international audit. This presupposes that they are reemphasised and evidence is available to show that they are being followed. The boat trailer/launch unit should help to support them in. the short term.

Other product areas that could be investigated are , material handling devices for mining, shipbuilding, new factory construction (reinvestment by Western Multinational companies in Poland, i.e. Fiat, G.M. Lever),possible reconstruction opportunities in the Gulf area.

Famabud have the capability of producing large fabrications and have the supporting facilities of machining and finishing to suit all the above proposals.

The manufacturing facility must be reorganised to better effect. The necessary controls enforced. Plus evidence that there is an effective demarcation between, raw material, work in progress, finish stock, build kit issues, scrap and rejects. The general housekeeping must be addressed and identification of the pertinant features for actioning. Reorganise the factory by decommission and/or dispose of surplus machine tools. The proposals made are in the main self-financing this shculd be the catalyst for positive action.

Staffing levels have to be reviewed and the ratio of direct to indirect corrected in favour of direct. This need not in the first instance to be a complete reversal of the present situation. Nevertheless the reduction of overhead recovery is necessary in order that the present cost of sales advantage can be maintained, i.e. target to reduce cost to compensate for

the rise of inflation. This may seem naive but a target for improvement is better than a misplaced trust. Famabud have taken some action to dispose of assets namely transport. It is suspected that this disposal was one of the easier options. However it is encouraging that they have identified the need.

A final short summary - Famabud has a future, but to achieve the long term the actions suggested must be taken. From a manufacturing standpoint, the buildings, services, plant andequipment will certainly support both the short and medium term. During these periods with prudent financial control, investment by the replecement, upgrading and movement to higher technological machines can be achieved. Development of the product range is essential, this has to be done in a world wide context. It must also beg the question if the Polish economy is able to absorb the Famabud potential output.

Long term investment

Robotic or semi automatic welding plant. The existing tooling can be adapted to accomodate this proposal. The advantages would be immediate in process time reduction, a suggested saving example on a tower section would be 35-40 % . This will give a more consistant weld quality. A reduction of labour intensity.

Machining centers CNC

For gear case manufacture, bearing pedestals, bearing caps, and housings. This again would reduce setting terms and process time by 40 % plus. What involves 5 vertical boring machines could be reduced to 2.

Digital read outs

The standard machines could be modified to accept D.R.O.'S which increase repeatablility, minimise setting and have the ability of data storage to facilitate ease of setting for a subsequent production run. Further

options are open but again these investments can be recovered in approx two years, subject to production demand reaching a point of 70-80 % utilization.

This appendix is submitted as a basis of discussion. Subject to requirements a business plan can be constructed, with a cash flow analysis. This subject to meaningful financial information being made available. This criteria would apply to our establishing manning levels to match a sales forecast. In other words when we have meaningful cost of sales information, a sales forcast, summary of overheads we should be able to produce a budget from which the future of Famabud can be presented with effects of taking certain measures.

Final Summary of ZREMB FAMABUD manufacturing

Strengths

The company has a fully proven facility with supporting services to produce the full product range. There is sufficient evidence to confirm that at all levels of the operation there is a high degree of job knowledge. Diversification has been introduced and the latent skills have demonstrated that a wider range of products can be manufactured satisfactarily. Comprehensive systems and data collection are available and are such that they could be a suitable base for compatorisation. Flexibility over a range of skills is evident and it oppears there are no restrictions to this practise as long as the appropriate skills are apparant. There is a general awareness of the need to look outside the present activity to progress. A number of actions have been taken and should be encouraged. Negotiations already advanced with 3 multi national companes for "Joint Venture" association these include Volvo and Euclid. Action has been taken in the form of prototype manufacture of boat trailor with pneumatic lifting. This for HaCon Germany. Extension of domestic crane range to include a mobil version aimed at the emerging small enterprise builders. Disposal of uneconomic assets i.e. transport, leasing facilities - factory floor area to employ underutilized assets.

Weaknesses

Principle crane design is dated and insufficiant design strength to redress situation. The comprehensive systems have been allowed to lapse. A problem not peculiar to Famabud but throughout Poland a disparity between productive and non productive labour. Perhaps the reason it does not carry the full significance is that labour is cheap. It begs the question however, what will the situation be when there is a more dramatic change towards a market economy. Production space is plentiful and Famabud has expended to fill the available space. The layout is inefficient does not allow work to flow. The total operation allowing for expansion up to 500,000 produced hours per annum could be adequatly housed in 30.000 sq meters. Raw materials storage is totally inadequate. Manufacturing quality is not good enough to compete with markets in the West.

Opportunities

To develop joint venture relationship with multinational companies. Recent departures to new products should be persued urgently. Utalize surplus labour to remodled the production areas. Estimated time for a meaningful reorganization is 26 weeks. Use overseas partnerships to foster new business opportunities via contact introductions.

Theats

With the opening up of the boarders to Polands West, Famabud is no longer on monopolist. Unless the company makes improvements in quality and design, is able to compete on price it will not survive in the market place.

Tasks

Dispose of surplus inventory, give generous discounts on crane stock. Take advantage to dispose of surplus equipment. Investigate the sub-contract market to utalize plant machinery and labour. Retrain by transfering non-productive to productive work. Review management

structure to establish a more meaningful response to situation. Finalize actions to ensure that short term is secured. There is a lack of concern in certain areas as to the consequences of not adressing the immediate problems.

Human resources

Labour market in Szczecin

1. The unemployment amounted to 2,5 % in Szczecin area on 31st August 1991. This is a very low rate in comparison with other areas in Poland; for example
   - Suwałki Province - 16,2%
   - Elbląg Province - 15,9%

   Average for Poland - 9,6%

   There is therefore a shortage of available well-educated workers in Szczecin.

Employment changes in ZREMB-FAMABUD

2. The number of employees has decreased to 506 by the end of August 1991, however there is still only 33,8% of employees in direct manufacturing as the following schedule reveals. The indirect manufacturing labour force is 39,5% easily exceeding the number on the shop floor. A summary of indirect workers has also been prepared by department and also by job-types.

7A. Total employment by month since 1988.

Month	1988	1989	1990	1991
I	1059	958	865	549
II	1069	951	858	544
III	1040	940	836	541
IV	1036	915	802	538
V	1020	917	770	537
VI	998	893	651	524
VII	977	884	636	509
VIII	973	866	621	506
IX	974	860	605	
X	954	856	582	
XI	963	850	569	
XII	957	872	556	

Skill types by department

3. The following table shows the total employed in direct and indirect categories. The names of end of the departments are shown in paragraph 9. Our restructuring recommendation are shown in section 9. The following table shows that there is overmanning in the company.

7B. SCHEDULE OF SKILL TYPES BY DEPARTMENT

at 23 Aug 1991

DEPARTMENT	NUMBER OF EMPLOYEES					
	Total employed	Non-direct				Direct
		Manag.	Admin.	Indirect	Sum	
Management	4	3	1		4	
Trade Union	1	1			1	
NK	4	1	3		4	
NO	1	1			1	
NR	7	2	3	2	7	
NE	6	2	4		6	
NG	26	4	2	20	26	
ND	2	1	1		2	
NZ	1		1		1	
NL	1		1		1	
NM	5	1	4		5	
RK	13	3	10		13	
TK	9	2	6	1	9	
TT	12	4	8		12	
TJ	14	3		11	14	
TM	33	3	2	28	33	
TE	29	2	2	25	29	
TN	31	2	3	26	31	
TB	2	1	1		2	
TR	22	1	2	19	22	
PF	6	1	5		6	
PP	3	1	2		3	
PH	14	2	3	9	14	
W1	42	1	2	9	12	30
W2	121	1	7	24	32	89
W3	66	3	2	8	13	53
W6	4	1		3	4	

MZ	9	4	5		9	
MM	17	3	2	12	17	
Holid.cent	4			4	4	
TOTAL	509	54	82	201	337	172
Percentage	100%	10.6%	16.1%	39.5%	66.2%	33.8%

7C. SUMMARY OF INDIRECT WORKERS

BY DEPARTMENTS at 23 Aug 1991

NG	20	Hotel(13):	charwomen	4
			receptionists	4
			cook	1
			aux.workers	3
			repairer	1
		Other (7):	sewoman	1
			aux.workers	4
			typists	2
Holiday centre	4			
		Sierakowo (2):	aux.worker	1
			administrator	1
		Dziwnówek (2)	administrator	1
			aux.workers	1
TK	1		xerog.operator	1
TJ	11		quality insp.	11
TM	28		repairers	19
			turners	3
			welders	2
			painter	1
			mason	1
			wireman	1
			maintenance tech	1
TE	25		repairers	1
			wiremen	9
			gas apparatus wor.	7
			assis. - " -	3
			plumbers	5

TN	26	fitters	12
		deliverers	4
		turners	2
		grinders	5
		mach.miller	3
TR	19	drivers	12
		wiremen	2
		repairer	1
		car mechanics	3
		crane mechanic	1
PH	9	locom. drivers	3
		transp.workers	3
		store workers	2
		crane operat.	1
W1	9	transp. workers	5
		crane operators	3
		deliverer	1
W2	24	transp.workers	10
		crane operators	12
		deliverers	2
W3	8	transp.workers	4
		crane operators	2
		deliverers	2
W6	3	caretakers	3
MM	12	store workers	10
		transp.worker	1
		crane operator	1
NR	2	inventary work.	2
		TOTAL:	201

7D. AN ANALYSIS OF INDIRECT WORKERS

		brought forward	80
repairers	22	deliverers	9
turners	5	transp.workers	23
welders	2	drivers	12
grinders	5	locom.drivers	3
painter	1	crane operators	19
mason	1	store workers	12
wiremen	12	aux.workers	9
gas apar.work.	10	car mechanics	3
plumbers	5	crane mechanic	1
fitters	12	quality insp.	11
mach.miller	3	xerog.operator	1
maint.tech.	1	administrators	2
cook	1	caretakers	3
		typists	2
	80	charwomen	4
		receptionists	4
		sewomen	1
		inventary work.	2
			201

7E. EMPLOYMENT BALANCE AT 31 AUG 1991

	Full time	Part time	TOTAL		incl. Women
Administration & management	127	8	135		54
Indirect prod.	195	4	199		69
SUM	322	12	334	(66%)	
Direct prod.	172	-	172	(34%)	
TOTAL	494	12	506	(100%)	123

4. The age structure of employees is evenly spread from 31 years onwards. However there is a substantial lack of employees below that age probably reflecting the perceived lack of prospects.

7F. AGE STRUCTURE OF EMPLOYEES

AGE	MEN	WOMEN	TOTAL	PERCENTAGE
to 20	2	-	2	0.4
21 - 25	33	2	35	6.92
26 - 30	30	5	35	6.92
31 - 35	66	12	78	15.41
TO 35			150	29.65
36 - 40	52	31	83	16.4
41 - 45	65	22	87	17.19
46 - 50	48	22	70	13.83
36 - 50			240	47.42
51 - 55	51	21	72	14.23
56 - 60	32	6	38	7.51
61 - 65	4	2	6	1.19
51 - 65			116	22.93

7G. EDUCATIGN STRUCTURE OF EMPLOYEES

SCHOOL	MEN		WOMAN		TOTAL		
	Prod	A&M	Prod	A&M	Prod.	A&M	SUM
Partly primary school	-	-	3	-	3	-	3
Primary school	97	6	42	5	139	11	150
Trade school.	153	8	21			9	183
Elem. level	....	....	....	....	.....	....	336
Compreh. second. school	4	3	2	12	6	15	21
Tech. secondary school	48	32	1	9	49	41	90
Econ. secondary school	-	2	-	17	-	19	19
Other second. schools	-	1	-	4	-	5	5
Second. level	...	....	....	....	.....	....	135
High technical school	-	27	-	2	-	29	29
High economic school	-	1	-	3	-	4	4
Other high schools	-	1	-	1	-	2	2
High level	...	....	....	....	.....	....	35

Elem. level	66.4 %
Second. level	26.7 %
High level	6.9 %

	100.0 %

Absenteeism and moral

5. Absenteeism was ccnstantly been over 5% Recently however in recent months this has easily exceeded 6% with two months reaching nearly 10% as illustrated in the following table. An analysis by department has be made for 1991 and table 7K shows absenteeism reaching 22% in the production department W1 and 17% in production department W2. These production departments have felt the full force of the reduction in demand for the company's products and therefore with

prospects diminishing absenteeism has increased and hence moral decreased.

6. To compare absence in various months total absence ratio (TAR) is computed according to formula:

7H.

$$TAR = \frac{TA}{NE \times ND} \times 100\%$$

TA- total number of absence days in the factory

NE- number of employees

ND- number of days in the month

7. Reasons of absence are divided into several groups. For each reason its ratio is calculated using TAR and the same is for every section in the factory.

8. A schedule of TAR ratio and accidents in the factory ratio(AFR) is shown below. This shows that the high level of absenteeism is not due to factory accidents.

71. ABSENCE IN ZREMB-FAMABUD IN THE PERIOD

1988 - VII 1991

	1988		1989		1990		1991	
	TAR	AFR	TAR	AFR	TAR	AFR	TAR	AFR
I	5,58	0,32	5,54	0,27	4,53	0,10	5,64	0,0
II	4,51	0,25	5,72	0,06	6,71	0,12	8,14	0,15
III	6,28	0,2	5,03	0,22	-	-	7,66	0,13
IV	3,57	0,3	5,18	0,26	5,71	0,12	9,75	0,16
V	5,24	0,3	5,58	0,73	4,25	0,0	9,46	0,03
VI	4,29	0,22	4,75	0,01	5,76	0,01	8,11	0,0
VII	4,63	0,48	5,02	0,14	-	-	5,9	0,02
VIII	4,14	0,35	5,04	0,26	5,42	0,05		
IX	6,86	0,62	5,2	0,02	5,59	0,02		
X	6,32	0,32	5,07	0,02	7,28	0,31		
XI	4,67	0,0	4,99	0,14	5,85	0,18		
XII	6,57	0,32	4,79	0,14	5,0	0,05		
AVERAGE IN YEAR	5.22		5,16		5,61		7,81	

7J. THE MOST COMMON REASONS OF ABSENCE (RATIOS)

IN FAMABUD IN 1991

MONTH	A	B	C	D	E	F	G	H	I
I	1,01	0,44	1,05	0,56	0,30	0,8	0,76	0,70	--
II	1,33	0,70	0,67	0,30	0,58	1,39	0,21	0,47	0,57
III	1,84	0,46	1,07	0,35	0,35	1,8	0,52	0,63	0,45
IV	3,07	1,52	1,55	1,99	0,52	1,46	1,01	0,78	0,69
V	1,50	1,69	1,33	1,66	1,60	1,37	0,99	0,44	0,24
VI	1,08	1,49	1,38	1,31	1,40	1,19	0,60	0,27	0,31
VII	0,55	1,19	1,67	1,02	0,96	0,60	0,38	0,11	0,11

A- respiratory system diseases

B- nervous system diseases

C- cardiovascular system diseases

D- osseous system diseases

E- peracute affections of nervous system

F- accidents out of the factory

G- hypertension disease

H- digestion system diseases

I- nurse

App J

Szczecińska Fabryka Maszyn Budowlanych

ZREMB - "FAMABUD" w Szczecinie

Zakład w Łobzie przy ul. Wojcielskiej 1a

1. Informacja ogólna

Dojazd do Łobza ze Szczecina 72 km. w kierunku północno-wschodnim / autostradą do m.Chociwla i dalej drogą drugiej klasy/ Łobez należy do miejscowości małych liczących ponad 7 tyś. ludności,okolica o charakterze rolniczym.

Miejscowość zasobna w siłę roboczą męską i żeńską.

2. Informacja o Zakładzie

Zakład położony w obszarze miasta Łobza,zlokalizowany jest na działce o powierzchni 6.439,0 m^2, teren ogrodzony.

Dojazd na teren Zakładu,dogodny drogą utwardzoną.

Warunki geologiczne dobre,grunt nośny.

Obecne zagospodarowanie Zakładu,przedstawia plan przestrzennego rozlokowania poszczególnych budynków oraz szczegółową wartość budowlaną całego Zakładu / patrz załącznik 1 / i uzupełnienie o ważniejsze maszyny wyposażenia,zgodnie z dotychczasową funkcja Zakładu / patrz załącznik 2 /.

Zakład FAMABUD w Łobzie dotychczas specjalizował sie głównie obróbką skrawania metali oraz spawalnictwem.

Produkcję tę wykonywał w halach:

a/ - murowanej o pow. 416,0 m^2 i wysokości produkcyjnej 3,2 m.

b/ - w hali konstr.stalowej obudowanej o pow. 717,0 m^2 i wysokości produkcyjnej 3,5 m.

Ponadto Zakład dysponuje placami składowymi,budynkiem socjalnym oraz pomieszczeniami pomocniczymi zadaszonymi i.

3. Aktualna wartość Zakładu w Łobzie

a/ - wartość zakładu w/g aktualnych cen
/ załącznik 1/ = 1.892.002.510,- zł

b/ - wartość gruntu działki zakładu
6.439,0 x 49.939,0 = 321.557.220,-

c/ - wartość środków trwałych
/ załącznik 2/ = 459.800.000,- zł

razem 2.673.359.730,- zł

4. Propozycja i zakres modernizacji istniejącego zakładu w Łobzie

Przegląd i analiza aktualnego stanu technicznego budynków i zabudowań znajdujących się na terenie Zakładu, skłaniają do zaproponowania podjęcia niezbędnego zakresu robót remontowo - modernizacyjnego Zakładu.

Proponowany zakres i wartość tych robót jest w pełni uzasadniony i niezależnie czy Zakład będzie nadal kontynuował dotychczasowy charakter produkcji czy też zostanie przestawiony na inny profil produkcji np.w branży przemysłu lekkiego.

Propozycją modernizacji objęto tylko podstawowe budynki produkcyjne i socjalno-bytowy, pozostałe proponuje się do rozbiórki wobec niskiej ich wartości. Po rozbiórce zbędnych zabudowań uzyska się wolną powierzchnię na ewentualną rozbudowę.

Ogółem wartość modernizacji wynosi = 351.419.000,- zł /zał.3/

w załaczeniu szczegółowe wyliczenia

Szczecin, październik 1991r

Inż. Tadeusz Becker
biegły Urzędu Wojewódzkiego
w Szczecinie
d/s szacowania [illegible] budowlanych

Załącznik 1

Szczegółowe wyliczenie wartości Zakładu w Łobzie

/ obliczenie opracowałem o obowiązujące cenniki/

1. Hala murowana - budynek parterowy,obustronnie otynkowany,

posadzka betonowa,dach dwuspadowy w konstrukcji stalowej przykryty płytami prefabrykowanymi,pokryty papą. Hala wyposażona w sieć wod.-kan. instalację elektryczną siłę i światło, ogrzewanie centralne z własnej kotłowni.

a/ - kubatura hali: 42,7 x 11,4 x 4,3 = 2.093,0 m^3

b/ - pow. dachu w rzucie 43,1 x 11,8 = 508,0 m^2

cena jednostkowa scalona m^3 = 8.883,- zł

cena jednostkowa scalona m^2 = 11.152,- zł

przelicznik aktualizujący = 26,0

stopień zużycia hali oszacowałem na 46 %

c/ - wartość hali:

kubatura 2.093,0x8.883,0x0,54x26,0	= 261.033.350,-
dach 508,0x11.152,0x0,54x26,0	= 79.539.630,-
wzmocnienie hali 621.184,0x0,54x26,0	= 8.721.420,-
podgrzewacze c.w. 2x2.041.548,0x0,54x26,0	=57.326.670,-
	406.621.070,- zł

2. Hala główna w konstrukcji stalowej-obudowanapłytami prefabrykowanymi do wysokości okien,pozostała część ściany oszklono w ramach stalowych.Dach dwuspadowy w konstrukcji stalowej pokryty blachą faliste ocynkowaną z podwieszonym srtopem ocieplonym. Posadzka betonowa,sciany poprzeczne,dzielące halę na trzy odzielne części.Hala wyposażona w sieć wod.-kan.,instalację elektryczną siłę i świetło,ogrzewanie c.o. zdalaczynne z własnej kotłowni.

a/ - kubatura hali 42,9 x 17,6 x 3,6 = 2.718,0 m^3

b/ - pow. dachu w rzucie 43,4 x 18,0 = 781,0 m^2

cena jednostkowa scalona m^3 = 11.967,- zł

cena jednostkowa scalona m^2 = 17.001,- zł

przelicznik aktualizujący = 26,0

stopień zużycia szacuję na 31 %

c/ - wrtość hali

kubatura: 2.718,0x11.967,0x0,69x26,0 = 583.521.930,-

dach: 781,0x17.001,0x0,69x26,0 = 238.203.390,-

821.725.320,- zł

3. Wiata obudowana,blachą - w konstrukcji stalowej,pokryta blachą

blachą ocynkowaną,posadzka betonowa,dach płaski pokryty blachą.

a/ - kubatura wiaty: 12,9 x 4,8 x 2,9 = 179,0 m^3

b/ - pow. dachu w rzucie: 12,9 x 4,8 = 62,0 m^2

cena jednostkowa scalona m^3 = 10.071,- zł

cena jednostkowa scalona m^2 = 10.296,- zł

przelicznik aktualizujący 26,0

stopień zużycia wiaty szacuję na 52 %

c/ - wartość obudowanej wiaty

kubatura: 179,0x10.071,0x0,48x26,0 = 22.497.810,-

dach: 62,0x10.296,0x0,48x26,0 = 7.966.630,-

30.464.440,- zł

4. Budynek garażowy - wykonany w konstrukcji stalowej,szkieletowej

obudowana cegłą obustronnie otynkowany i malowany.Dach w konstrukcji stalowej,wyłożony płytami prefebrykowanymi i pokryty papą.Posadzka betonowa.Garaż wyposażony w instalację elektryczn

a/ - kubatura garażu: 8,1 x 6,1 x 2,8 = 134,0 m^3

b/ - pow. dachu w rzucie: 8,1 x 6,1 = 49,0 m^2

cena jednostkowa scalona m^3 = 12.052,- zł

cena jednostkowa scalona m^2 = 10.640,- zł

przelicznik aktualizujący = 26,0

stopień zużycia wiaty szacuję na 52 %

c/ - wartość garażu

kubatura: 134,0x12.052,0x0,48x26,0 = 20.154.800,-

dach: 49,0 x 10.640,0x0,48x26,0 = 6.505.570,-

26.660.370,- zł

5. Magazyn - w konstrukcji stalowej,szkieletowy,obudowany cegłą i blachą falistą,dach płaski w konstrukcji stalowej,pokryty blachą ocynkowany. Posadzka betonowa,wyposażenie magazynu w instalację oswietleniową.

a/ - kubatura: 15,0 x 6,0 x 3,3 + 14,7x6,0x3,1 = 570,0 m^3

b/ - pow.dachu w rzucie: 29,9 x 6,1 = 182,0 m^2

cena jednostkowa scalona m^3 = 11.624,- zł

cena jednostkowa scalona m^2 = 7.215,- zł

przelicznika aktualizującego 26,0

stopień zużycia magazynu szacuję na 38 %

c/ - wartość magazynu

kubatura: 570,0x11.624,0x0,62x26,0 = 106.805.960,-

dach: 182,0x7.215,0x0,62x26,0 = 21.167.660,-

127.973.620,- zł

6. Wiata,częściowo obudowana - w konstrukcji stalowej,szkieletowej, posadzka betonowa,dach płaski pokryty blachą falistą ocynkowaną.

a/ - kubatura wiaty: 18,0 x 6,0 x 3,4 = 367,0 m^3

b/ - pow.dachu w rzucie: 18,0 x 6,0 = 108,0 m^2

cena jednostkowa scalona m^3 = 5.884,- zł

cena jednostkowa scalona m^2 = 7.170,- zł

przelicznik aktualizujący = 26,0

stopień zużycia wiaty szacuję na 52 %

c/ wartość wiaty:

kubatura	367,0x5.884,0x0,48x26,0	= 26.949.660,-
dach	108,0x7.170,0x0,48x26,0	= 9.664.019,-
		36.613.670,- zł

7. Portiernia - obiekt murowany,obustronnie otynkowany,dach płaski betonowy,pokryty papą.

a/ - kubatura: 3,3 x 3,1 x 2,8 = 28,0 m^3

b/ - pow.dachu w rzucie: 3,7 x 3,5 = 13,0 m^2

cena jednostkowa scalona m^3 = 9.963,- zł

cena jednostkowa scalona m^2 = 10.782,- zł

przelicznik aktualizujący = 26,0

szopień zużycia portierni szacuję na 42 %

c/ - wartość portierni

kubatura	28,0x9.963,0x0,58x26,0	= 4.206.780,-
dach	13,0x10.782x0,58x26,0	= 2.113.700,-
		6.320.480,- zł

8. Budynek socjalno-bytowy,parterowy,murowany cegłą,obustronnie otynkowany,posadzka betonowa wyłożona pcv,strop drewniany ocieplony,dach w konstrukcji drewnianej,dwuspadowy pokryty papą. Budynek wyposażony w sieć wod.-kan.,instalację elektryczną,

ciepłą wodę z podgrzewacza,c.o. zdalaczynne z własnej kotłowni.

a/ - kubatura budynku: 23,5x6,1x2,6 + 5,9x7,8x2,6 = 491,0 m^3

b/ - pow.dachu w rzucie: 23,9x6,5 + 6,3x8,2 = 207,0 m^2

cena jeenostkowa scalona m^3 = 14.851,-

cena jednostkowa scalona m^2 = 8.694,-

przelicznik aktualizujący = 26,0

stopień zużycia budynku szacuję na 49 %

c/ wartość budynku socjalno-bytowego

kubatura: 491,0x14.851,0x0,51x26,0	=	96.689.810,-
dach: 207,0x8.694,0x0,51x26,0	=	23.863.470,-
podgrzewacz: 4x231.201,0x0,60x26,0	=	14.426.940,-
		144.980.220,- zł

9. Urządzenię terenu Zakładu

- place i drogi: 2.820,0x3.910,0x0,58x26,0	=	166.275.100,-
- sieć wod.-kan. 93,6x2.553,0x0,70x26,0	=	4.349.090,-
164,0x4.100,0x0,70x26,0	=	12.237.680,-
- ogrodzenie siatkę:		
161,0x2x12.048,0x0,52x26,0	=	52.450.250,-
cokół- 161,0x2x5.904,0x0,52x26,0	=	25.702.710,-
- zasobnik betonowy na złom:		
51,8x7.169,0x0,60x26,0	=	5.793.110,-
dno - 65,5x2.659,0x0,60x26,0	=	2.716.970,-
- 2 barakowazy pom. pomocnicze: ryczałt	=	21.118.410,-
razem urządzenie terenu		290.643.320,- zł

Razem wartość/ poz.1 - 9 załącznika1/ = 1.892.002.510,- zł

Załącznik 2

Zestawienie wartości środków trwałych

maszyny do obróbki metali

lp.	nazwa przedmiotu	typ	nr fabr.	rok bud.	ciężar w kg	wartość w tyś.zł
1.	tokarka uniwersalna	TR-70	102085	1958	4.700,-	18.800,-
2.	" "	TUD-50	18479	1968	2450,-	23.000,-
3.	" "	TUD-50	14579	1966	2.650.-	21.400,-
4.	" "	TUD-50	18.878	1968	3.250,-	22.700,-
5.	" "	TR70 B	10051295	1970	4.700,-	39.600,-
6.	" "	TUD-50	25080	1971	2.450,-	30.800,-
7.	Frezarka uniwersal.	FN-24	1113	1973	2.500,-	33.000,-
8.	tokarka "	CU-502	74590	1974	3.000,-	37.500,-
9.	" rewolwerowa	RUM 63	261	1975	2.400,-	42.000,-
10.	" "	RUM 63	259	1975	2.400,-	42.000,-
11.	" uniwersalna	1A616	65657	1977	1.500,-	53.600,-
12.	" "	PA-45	331	1977	2.200,-	53.600,-
13.	" "	16K20	17053	1977	2.100,-	41.800,-
						459.800,- zł

Przedstawiony powyżej wykaz maszyn do obróbki metali sa zainstalowanie w halach Zakładu w Łobzie.

Wartość poszczególnych maszyn określono szacunkowo, bazując na cenach aktualnie zgłaszanych do przetargu, uwzględniający stan techniczny maszyny.

APP 7

Załącznik 3

Wyszczególnienie zakresu robót i ich wartość, przy założeniu modernizacji istniejącego Zakładu w Łobzie.

Przedłożona informacja o modernizacji, obejmuje tylko te budynki które stanowią podstawę dla prowadzenia i rozwoju przyszłej, wybranej produkcji.

1. Hala produkcyjna murowana

- wymiana nawierzchni posadzki betonowej	=	16.130.000,-
- wyburzenie części starej posadzki	=	8.500.000,-
- odnowienie scian hali farbami trwałymi	=	6.840.000,-
- naprawa powierzchni tynków	=	2.420.000,-
- przebudowa "stolarki okiennej" okna podwóne	=	8.100.000,-
- wymiana bram i drzwi zewnętrznych	=	10.080.000,-
- wymiana i przebudowa węzłów sanitarnych	=	18.560.000,-
- wykonanie ocieplenia stropu /podwieszony/	=	13.660.000,-
- wymiana osprzętu oświetleniowego	=	3.820.000,-
- częściowa naprawa dachu	=	4.200.000,-
- modernizacja instalacji elektrycznej	=	5.240.000,-
		97.550.000,- zł

2. Hala w konstr. stalowej

- wymiana nawierzchni posadzki betonowej	=	19.530.000,-
- wyburzenie zniszczonej posadzki	=	9.200.000,-
- odnowienie ścian wewnętrznych	=	4.860.000,-
- naprawa powierzchni tynków	=	2.200.000,-
- przebudowa i wykonanie podwójnych okien	=	25.970.000,-
- ocieplenie stropu /podwieszony/	=	23.300.000,-
- wymiana i przebudowa węzłów sanitarnych	=	28.400.000,-

- wymiana osprzętu oświetleniowego	=	4.890.000,-
- modernizacji instalacji elektrycznej	=	7.324.000,-
		124.674.000,- zł

3. Budynek socjalny

- przebudowa ścianek wewnętrznych	=	3.980.000,-
- tynki wewnętrzne	=	3.600.000,-
- rekonstrukcja stropu i ocieplenie	=	18.200.000,-
- posadzka i podłogi	=	8.300.000,-
- stolarka okienna i drzwiowa	=	10.200.000,-
- pomalowanie ścian i stolarki	=	3.500.000,-
- instalacja elektr.,wod.-kan.,i c.o.	=	7.300.000,-
- sanitariaty i umywalnia	=	5.400.000,-
- częściowa naprawa dachu	=	3.980.000,-
- obróbke blacharska	=	1.190.000,-
		67.650.000,- zł

4. Budynek magazynowy

- przebudowa ścianek wewnętrznych	=	3.800.000,-
- wzmocnienie i uzupełnienie posadzki bet.	=	4.840.000,-
- wymiana stolarki drzwiowej	=	4.800.000,-
- uzpełnienie instalacji elektrycznej	=	1.080.000,-
		14.520.000,- zł

5. Pozostałe budynki i zabudowania

Pozostałe obiekty jak: magazyn paliw,budynek garażowy,wiata obudowana,barakowozy, proponuje się przeznaczyć do rozbiórki jako mało przydatne. Z uwagi na to,że wymienione obiekty nadają się do rozbiórki i przeniesienia,mogą być przeznaczone do sprzedaży równoważąca wartość rozbiórki.

6. Nawierzchnie placów i dróg wewnętrznych

Uwzględnia się konieczność przeprowadzenia bieżącego remontu ogólnej powierzchni tj. około 850,0 m^2

Wartość remontu wyniesie = 47.025.000,- zł

Ogółem wartość modernizacji i remontu została oszacowana na = 351.419.000,- zł

Uwaga: W przypadku całkowitej zmiany profilu produkcji w Zakładzie na inną,koszt modernizacji zwiększy się średnio o 13,5 % do wyszczególnionych wartości każdego budynku.
Rozbióka wymienionych zabudowań w pozycji 5,uzyska się wolną powierzchnię w wielkości 284,0 m^2

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Zbiór podstawowych informacji:

o Zakładzie produkcyjnym w Ł o b z i e

Zakład zlokalizowany na działce o powierzchni 6.439,0 m^2

posiada dwie hale produkcyjne o powierzchni 1.133,0 m^2

obiekty towarzyszące, teren uzbrojony

Wartość Zakładu w/g ceny rynkowej = 2.673.359.730,- zł

Przewidywane nakłady na modernizację = 351.419.000,- zł

App 3

Szczecińska Fabryka Maszyn Budowlanych

ZREMB - PAMABUD w Szczecinie

Zakład w Szczecinie przy ul. Lady nr 2

1. Informacja ogólna

Zakład zlokalizowany jest w centralnej dzielnicy miasta Szczecina nad rzeką Odrą w bezpośrednim sąsiedztwie Stoczni Szczecińskiej i Dworca morskiego.

Dojazd do Zakładu drogą miejską I klasy.

2. Informacja o Zakładzie

Zakład zlokalizowany jest na obszarze 20.662,0 m^2 powierzchni. Podstawowym obiektem Zakładu jest hala produkcyjna o powierzchni zabudowy 5.346,0 m^2 i kubaturze 71.248,0 m^3. Przyległy do hali budynek administracyjny o powierzchni zabudowy 2.574,0 m^2 i kubaturze 27.413,0 m^3. Podział powierzchni / przybliżone wielkości/ w budynku na:

- pomieszczenia biurowe i towarzyszące razem = 1.328,0 m^2
- powierzchnie socjalne,szatnie,umywalnie suszarnie,medyczne i żywienie razem = 768,0 m^2
- pomieszczenia produkcyjne,pomocnicze i zaplecze techniczne = 1.726,0 m^2

Dalsze cztery budynki o charakterze pomocniczym.

Działka w pełni uzbrojona w sieci i instalacje,place i drogi oraz bocznicę kolejową.

Zakład dotychczas specjalizował się w produkcji żurawi wieżowych na potrzeby budownictwa. Aktualnie w zakładzie prowadzona jest produkcja zastępcza tj. montaż małych jednostek na potrzeby żeglugi.

3. Wartość Zakładu przy ul. Lady

a/ - wartość zakładu w/g szczegółowego wyliczenia / załącznik 1 / = 25.364.968.180,- zł

b/ - wartosć środków produkcyjnych podstawowych /załącznik 2/ = 773.801.000,- zł

c/ - wartość gruntu 20.662,0 x 232.356,0 = 4.800.939.670,- zł

30.939.708.850,- zł

4. Propozycja modernizacji Zakładu

Zakres modernizacji nie zakłada zmian konstrukcyjnych hali podstawowego pomieszczenia produkcyjnego.
Proponowany zakres modernizacji pozwoli poprawić ogólne warunki pracy,podniesienie estetyki zakładu oraz wpłynie na obniżenie strat cieplnych w okresie grzewczym.
Modernizacją objęto poza hala,budynek administracyjny z cześcią produkcyjną oraz budynek torkretowni i część urządzenia terenu / szczegóły w załączniku 3/
Ogółem wartosć modernizacji wynosi 2.125.702.090,- zł

Inż. ... biegły ... w ... d/s ... budowlanych

w załączeniu szczegółowe wyliczenia

Szczecin,październik 1991r

Załącznik 1

Szczegółowe wyliczenie wartości Zakładu w Szczecinie ul.Łady 2

obliczenie opracowane o obowiązujące cenniki

1. Hala główna - wykonana w konstrukcji szkieletowej,żelbetowej,

obudowana murem z cegły,przykryta dachem w konstrukcji stalowej z naświetlami,płyty prefabrykowane pokryte papą,posadzka betonowa. Hala przedzielona wzdłużnie podporami podsuwnicy, torowisko poddźwigowe ustawione jest na wysokości 9,0m od poziomu posadzki. Hala wyposażona w sieć przewodów w gazy techniczne,sprężone powietrze,instalację siły i światła, ogrzewanie centralnie przez nagrzewnice.

a/ - kubeture hali 165,5 x 35,0 x 12,3 = 71.248,0 m^3

b/ - powierzchnia dachu 165,5 x 35,0 = 5.793,0 m^2

w tym naświetla = 1.600,0 m^2

cena jednostkowa,scalona m^3 = 10.822,- zł

cena jednostkowa,scalona m^2 = 16.747,- zł dachu

cena jednostkowa,scalona m^2 = 31.621,- zł naświetla

konstrukcja podsuwnicowa = 223.945.111,- zł

stopien zużycia hali oszacowany na 48 %

c/ - wartość hali

kubeture	71.248 x 10.822 x 0,52 x 26	=	10.424.539.970,-
dach	4.193 x 16.747 x 0,52 x 26	=	949.376.710,-
	1.600 x 31.621 x 0,52 x 26	=	684.025.470,-
konstr.	223.945.111 x 0,52 x 26	=	3.027.737.880,-
			15.085.680.030,- zł

2. Budynek administracyjno-produkcyjny, z częścią socjalno-bytową

wykonany w konstrukcji szkieletu żelbetowego,wypełniony murem z cegły palonej,stropy płytowe żelbetowe. Budynek można podzielić

na trzy sektory;część biurowa trzykondygnacyjna,część druga to socjalno-bytowa i magazynowa /przejście z trzech do dwóch kondygnacji/ następna część to część warsztatowo-produkcyjna. Budynek przylega do hali głównej

a/ - kubatura budynku 165,0 x 15,6 x 10,65 = 27.413,0 m^3

b/ - pow. dachu w rzucie 165,0 x 15,6 = 2.574,0 m^2

cena jedn. scalona /średnia/ m^3 = 22.212,- zł

cena jedn. scalona m^2 = 11.135,- zł

stopień zużycia oszacowałem na 48 %

c/ - wartość budynku

kubatura 27.413 x 22.212 x 0,52 x 26 = 8.232.294.950,-

dach 2.574 x 11.135 x 0,52 x 26 = 387.503.340,-

8.619.798.290,- zł

3. Budynek wózków akumulatorowych - murowany,parterowy,posadzka betonowa,dach płaski betonowy, w części drewniany.

a/ - kubatura budynku 28,6x4,1x4,2 + 19,7x4,6x2,6 = 728,0 m^3

b/ - pow.dachu w rzucie 28,6x4,1 + 19,7x4,6 = 207,0 m^2

cena jedn. scalona m^3 = 8.417,- zł /średnia/

cena jedn. scalona m^2 = 10.737,- zł i 7.001,- zł

c/ - wartość budynku

kubatura 728 x 8.412 x 0,28 x 26 = 44.608.750,-

dach 117 x 10.737 x 0,38 x 26 = 12.411.540,-

90 x 7.001 x 0,10 x 26 = 1.638.230,-

58.658.520,- zł

4. Budynek torkretownia - obiekt wykonany w konstrukcji stalowej

obudowana blacha falistą ocynkowana,dach w konstrukcji stalowej pokryty płytami azbestowymi,posadzka betonowa,wyposażony w instalację elektryczną.

a/ - kubatura budynku 42 x 10,6 x 3,8 = 1.692,- m^3

b/ - pow. dachu w rzucie 42 x 10,6 = 445,- m^2

cena jedn. scalona m^3 = 11.600,- zł

cena jedn. scalona m^2 = 13.912,- zł

stopień zużycia budynku,szacuje na 65 %

c/ - wartość obiektu

kubatura 1.692 x 11.600 x 0,35 x 26 = 178.607.520,-

dach 445 x 13.912 x 0,35 x 26 = 56.336.640,-

234.944.160,- zł

5. Budynek,magazyn gazu - obiekt murowany,obustronnie otynkowany

posadzka betonowa,dach w konstrukcji stalowej,odeskowany, pokryty papą.

a/ - kubatura magazynu 20,8 x 8,8 x 3,8 = 679,0 m^3

b/ - pow. dachu w rzucie 20,8 x 8,8 = 183,0 m^2

cena jedn. scalona m^3 = 9.375,- zł

cena jedn. scalona m^2 = 13.120,- zł

stopień zużycia szacuje na 38 %

c/ - wartość magazynu

kubatura 679 x 9.375 x 0,62 x 26 = 102.613.880,-

dach 183 x 13.120 x 0,62 x 26 = 38.703.480,-

141.317.360,-zł

6. Magazyn farb - budynek murowany,obustronnie otynkowany,
posadzka betonowa,dach płaski ognioodporny,kryty papą.

a/ - kubatura obiektu 15,3 x 3,2 x 2,8 = 137,0 m^3

b/ - pow.dachu w rzucie 15,3 x 3,2 = 49,0 m^2

cena jedn. scalona m^3 = 9.423,- zł

cena jedn. scalona m^2 = 10.032,- zł

stopień zużycia szacuję na 75 %

c/ - Wartość magazynu

kubatura	137 x 9.423 x 0,25 x 26	=	9.062.480,-
dach	49 x 10.032 x 0,25 x 26	=	3.195.190,-
			12.257.670,- zł

7. Urządzenie terenu

- drogi betonowe wewnętrzne:

3.910 x 1.700 x 0,55 x 26 = 95.052.100,-

- place utwardzone betonem:

2.210 x 1.191 x 0,55 x 26 = 37.775.420,-

- place składowe utwardzone płytami "jombo"

99 x 2.818 x 0,55 x 26 = 3.989.440,-

- ogrodzenie terenu,murem:

103,5 x 2,2 x 8.902 x 0,38 x 26 = 20.026.600,-

- sieć wodociągowo-kanalizacyjnej:

706 x 2.553 x 0,52 x 26 = 24.368.690,-

546 x 4.100 x 0,52 x 26 = 30.265.870,-

- mur oporowy, betonowy:

  1.101,5 x 26.498,5 x 0,28 x 26 = 212.489.340,-

- kanał ciepłowniczy:

  188 x 12.251 x 0,52 x 26 = 31.139.100,-

- bocznica kolejowa:

  106 x 10.000.000 x 0,20 = 402.800.000,-

- podtorze dźwigowe:

  62 x 16.400.000 x 0,35 = 355.880.000,-

  1.213.786.560,- zł

Razem wartość /poz. 1 - 7/ = 25.364.968.180,- zł

Załącznik 2

Zestawienie ważniejszych środków produkcyjnych

w Zakładzie przy ul. Łady 2

lp.	nazwa środka trwałego	typ	nr fabr.	wartość w tyś zł.
1.	suwnica belkowa	Q 4,5t	0500	25.558,-
2.	suwnica pomostowa	Q 20t	3106	63.730,-
3.	" "	Q 12,5t	001998	163.420,-
4.	" "	Q 12,5t	003932	107.537,-
5.	" "	Q 5t	1078	43.182,-
6.	" "	Q 10t	21273	71.695,-
7.	" "	Q 10t	21273	71.695,-
8.	" "	Q 15t	733	40.729,-
9.	żuraw wieżowy	ŻB-75	1195	95.367,-
10.	dźwig budowlany			41.947,-
11.	wytaczarka	HWC-110		48.941,-
				773.801,-

Załącznik 3

Wyszczególnienie zakresu robót i ich wartość przy założeniu

modernizacji istniejącego Zakładu w Szczecinie Łady 2

Wstęp: Aktualnie Zakład jest czynny i wytwarza produkcję zamienną, stosownie do profilu reprezentowanego przez obecnego użytkownika.

Wszystkie obiekty Zakładu są funkcjonalnie czynne choć niepełnym zakresie wykorzystane za wyjątkiem bocznicy kolejowej i podtorza dzwigowego.

Proponowany zakres modernizacji, dotyczy głównie strony estetycznej Zakładu oraz niewielkiego zakresu technicznego budyków, które stanowią podstawę produkcyjną i stanowią wartość techniczą.

Hala główna

- częściowa naprawa nawierzchni posadzki	=	340.908.090,-
- rekonstrukcja głównej bramy do hali	=	66.695.500,-
- odnowienie scian hali farbą trwałą	=	88.920.000,-
- ocieplenie sciany szczytowej hali	=	54.086.000,-
- zamontowanie podwójnych okien	=	153.803.000,-
- naprawa /częściowa/ sieci wodociągowej	=	222.331.000,-
- naprawa / częściowa/ sieci centr.ogrzew.	=	207.509.000,-
		1.084.252.090,- zł

2. Budynek administracyjny

- przebudowanie cz ści ścian działowych	=	202.400.000,-
- tynk wewnętrzny	=	106.120.000,-
- naprawa wentylacji stropodachu	=	38.400.000,-
- malowanie scian i stropów	=	192.640.000,-
- malowanie stolarki drzwiowej i okiennej	=	144.400.000,-

- naprawa schodów	=	96.320.000,-
- modernizacja węzłów sanitarnych,umywalni, szatnie	=	105.950.000,-
- uzupełnienia sieci wod.-kan.	=	67.340.000,-
- modernizacja oświetlenia	=	48.160.000,-
- uzupełnienia w stolarce drzwiowej	=	32.240.000,-
		1.033.970.000,- zł

3. Budynek torkretownia

Specyficzny charakter produkcyjny w budynku w zasadzie nie wymaga modernizacji.

W ramach remontu należałoby wymienić część ścian osłonowych, wykonanych z blachy faliste.j.

4. Budynek,magazyn gazów

Budynek wobec jednorodnej funkcji,nie wymaga modernizacji.

6. Budynki - magazyn farb i wózków akumulaturowych

Uwzględniając dotychczasowe przeznaczenie,mogą je nadal wypełniać lecz nie nadają się do modernizacji z uwagi na duży stopień zużycia.

7. Urządzenie terenu

Z tematów ujętych w tym rozdziale,następujące pozycje winne być poddane modernizacji:

- ogrodzenie, odnowienie elewacji ogrodzenia = 7.480.000,-
- bocznica kolejowa i podtorze dźwigowe, w zależności od przyszłego przeznaczenia Zakładu,uzależniona jest decyzja utrzymania tych urządzeń.

Razem wartość na modernizacje = 2.125.702.090,- zł
==========

Uwaga: Zaproponowany zakres robót modernizacyjnych na Zakładzie i ich wartość, jest programem mającym poprawić walory estetyczne Zakładu i podniesienie kultury pracy. Zakres proponowany winien być wykonany ale nie musi. Wyliczoną wartość robót nie należy utożsamiać z faktem, dodatkowego obniżania wartosci poszczególnych obiektów, gdyż te zostały w wycenie szacunkowej uwzględnione, współczynnikiem zużycia budynków i urządzeń

Odnośnie ważniejszych środków produkcyjnych, zainstalowanych w hali, są one nie najnowocześniejszej generacji ale spełniają warunki techniczne i są dopuszczone do produkcji. Ewentualna ich wymiana bedzie uwarunkowana od przeznaczenia produkcyjnego Zakładu w przyszłości.

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Zbiór podstawowych informacji:

o Zakładzie produkcyjnym w Szczecinie ul. Łady

Zakład zlokalizowany na działce o powierzchni 20.662,0 m^2

hala produkcyjna o powierzchni 5.346,0 m^2

bud. administracyjny z produkcją o pow. 3.822,0 m^2

plus obiekty towarzyszące, teren uzbrojony

Wartość Zakładu w/g ceny rynkowej = 30.939.708.850,- zł

Przewidywane nakłady na modernizację = 2.125.702.000,- zł

APPJ

Ośrodek wypoczynkowy - Sierakowo

1. Informacja ogólna

- Ośrodek wypoczynkowy leży w odległości 64 km od Szczecina w kierunku południowo-wschodnim, trasą T - 81 do Bydgoszczy, w miejscowości Wapnica, zjazd na kierunek Dobrzany do Ośrodka w Sierakowie.
- Położenie Ośrodka w niewielkiej kotlinie nad brzegiem jeziora o powierzchni wody 18 ha, otoczony lasem mieszanym.
- Teren leśny otaczający Ośrodek to tereny łowieckie
- Najbliższa większa miejscowość to 50 tyś Stargard-Szczeciński w odległości 25 km.

2. Informacja o Ośrodku wypoczynkowym

- Ośrodek wypoczynkowy usytuowany jest na wzniesieniu leśnym z widokiem na jezioro i otaczający las mieszany.
- Teren ośrodka zabudowany jest obiektami wypoczynkowymi, wolnostojącymi wśród zagospodarowanego terenu małą architekturą.
- Ośrodek składa się z 7 samodzielnych obiektów wypoczynkowych o średnim standardzie wyposażenia.

Oprócz obiektów wypoczynkowych na ośrodku występują budynki towarzyszące jak:

budynek parterowy o charakterze zaplecza kulturalnego

budynek "hangar" do przechowywania sprzętu wodnego

budynek hydrofornia z własnym ujęciem wody pitnej

- Obiekty wypoczynkowe składają się z trzech pokoi dla dwóch osób i jeden dla trzech osób.

wspólny węzeł sanitarny i kuchenny, składający się:
z oddzielnych pomieszczeń - łazienka z wanną
kuchnia z wyposażeniem
pomieszczenie w.c.

Pokoje posiadają podstawowe wyposażenie wypoczynkowe.

3. Wartość Ośrodka wypoczynkowego w Sierakowie

- wyliczona wrtość szczegółowa osrodka, przeliczona o wskaźnik inflacji bieżącego roku wynosi

1.921.594.250,0 x 1,056 = 2.029.203.530,-

- grunt nie stanowi własności ośrodka, teren jest dzierżawiony, roczna dzierżawa łącznie wynosi 503,0 zł/m^2

roczna opłata wynosi 23.000,0 x 503,0 = 11.569.000,-

2.040.772.530,- zł

mgr. Tadeusz Becker
biegły Urzędu Wojewódzkiego
w Szczecinie
d/s szacowania obiektów budowlanych

w załączeniu: - szczegółowe wyliczenie wartości Ośrodka
- typowe wyposażenie obiektu wypoczynkowego
- plan sytuacyjny zagospodarowania Ośrodka
- rzut obiektu wypoczynkowego

Szczecin, październik 1991r

Szczegółowe wyliczenie wartości ośrodka wczasowego

1. Charakterystyka techniczna obiektu wczasowego

- obiekt wykonany w konstrukcji stalowej na podłożu betonowym
- szkielet wypełniony materiałem ocieplającym, obłożony od zewnątrz płytami cementowo-azbestowymi a od wewnątrz boazeria z drewna miękkiego, lakierowana. W pozostałych pomieszczeniach ściany wyłożone płytami z laminatu
- podłoga drewniana na legarach wyłożona wykładziną dywanową
- dach w konstrukcji stalowej, płaski pokryty papą
- obiekt wyposażony w sieć wod.-kan., instalację elektryczną.

2. Wycena obiektu wypoczynkowego

kubatura: 11,3 x 9,5 x 2,5 = 268,- m^3

cena wyjściowa	- kubatury	=	7.495,-
	ściany	=	10.275,-
	uzupełn.	=	1.865,-
			19.635,- zł/m^3

dach: rzut dachu	11,7 x 9,9	=	116,- m^2
cena wyjściowa		=	13.656,-
	uzupełn.	=	5.125,-
			18.781,- zł/m^2

wyposażenie obiektu w przedmioty = 21.011.560,- zł

3. Wartość obiektu

kubatura	268 x 19.635 x 0,92 x 26	=	125.871.346.-
dach	116 x 18.781 x 0,92 x 26	=	52.112.016,-
wyposażenie		=	21.011.560,-
			198.994.922,- zł

App 7

Zestawienie wartości pozostałych budynków Ośrodka

1. Budynek o charakterze zaplecza kulturalnego

- budynek wykonany w konstrukcji stalowej,wypełniony warstwą ocieplającą,od zewnątrz wyłożony płytami cementowo-azbestowymi od wewnątrz boazerią.
- podłoga drewniana pokryta pcv,częściowo posadzka wyłożona płytkami lastriko.
- dach w konstrukcji stalowej ocieplony pokryty papą.

2. Wartość budynku

127.990.378 x 0,90 x 1,73 = 199.281.020,- zł

3. Budynek hydrofornia

- budynek murowany parterowy,obustronnie otynkowany i malowany
- dach płaski ognioodporny pokryty papą
- budynek wyposażony w pompy głębinowe i zbiorniki na wodę
- wartość budynku wynosi:

21.323.100 x 0,96 x 1,73 = 35.413.440,- zł

4. Budynek pomocniczy "hangar"

- wykonany w konstrukcji drewnianej,obity deskami/impregnowane/ dach płaski drewniany pokryty papą
- wartość "hangaru" wynosi:

57.423.650 x 0,90 x 1,73 = 89.416.410,- zł

Inne, towarzyszące urządzenia na ośrodku

- wolnostojący obiekt w.c.

wartość 3.117.310 x 0,92 x 1,73 = 4.961.510,- zł

- ogrodzenie ośrodka siatką:

wartość 724,0 x 5.995 x 0,92 x 1,73 = 6.908.150,- zł

- uzbrojenie terenu i mała architektura

wartość 10 x 4.890.622 x 0,92 x 1,73 = 77.839.140,- zł

- zbiornik ścieków:

wartość 30.919.140 x 0,65 x 1,73 = 34.768.570,- zł

- zasilanie energetyczne:

wartość /31.890.000 + 18.400.000/0,92x1,73 = 80.041.560,-zł

razem urządzenia towarzyszące = 204.518.930,- zł

Zestawienie wartości

1. obiekty wypoczynkowe	7 x 198.994.920 =	1.392.964.450,-
2. bud. usługowy	=	199.281.020,-
3. bud. hydrofornia	=	35.413.440,-
4. bud. pomocniczy hangar	=	89.416.410,-
5. urządzenie terenu	=	204.518.930,-
		1.921.594.250,- zł

AFP]

Typowe wyposażenie obiektu wypoczynkowego w Sierakowie

9	tapczanów jednoosobowe x 840.000,0	=	7.560.000,-
4	stoliku świetlicowe x 168.000,0	=	672.000,-
13	krzeseł x 203.000,0	=	2.639.000,-
9	szafek nocnych x 224.000,0	=	2.016.000,-
6	kosze na śmieci x 43.560,0	=	261.360,-
4	szafy dwudrzwiowe x 546.000,0	=	2.184.000,-
4	firanki małe x 42.500,0	=	170.000,-
4	zasłonki x 39.800,0	=	159.200,-
	kuchenka elektryczna	=	1.200.000,-
	lodówka	=	2.500.000,-
	stół kuchenny	=	170.000,-
	szafeka kuchenna	=	480.000,-
4	taborety x 125.000,0	=	1.000.000,-
			21.011.560,- zł

AT SIERAKOW

App. J.

Zbiór podstawowych informacji:

Ośrodka wczasowego w S i e r a k o w i e nad jeziorem w centrum lasu łowieckiego.

Ośrodek posiada 7 samodzielnych obiektów, każdy dla 9 osób

Powierzchnia działki wynosi 23.000,0 m^2 / w dzierżawie/

Wartość Ośrodka ogółem wynosi 2.040.772.530,- zł

Ośrodek w pełni wyposażony, czynny

APP J

Ośrodek wypoczynkowy - Dziwnówek

1. Informacja ogólna

- Ośrodek wypoczynkowy leży w odległości 61 km od Szczecina w kierunku północnym, trasa E - 14 do miejscowości Dziwnówko i dalej w kierunku Kamienia Pomorskiego
- Ośrodek położony w otoczeniu drzew świerkowych kilkanaście metrów od plaży nadmorskiej a od południa w sąsiedztwie zalewu kamieńskiego
- Z ośrodka wygodne połączenie z Świnoujściem 47 km. i Kamień Pomorski 9 km.

2. Informacja dotycząca ośrodka wypoczynkowego

- Ośrodek zlokalizowany jest na obszarze wydzielonym, ogrodzony i jest zabudowany 26 samodzielnymi pawilonami wypoczynkowymi oraz budynkiem piętrowym, wielofunkcyjnym spełniającym funkcje zaplecza socjalno - bytowego i kulturalnego dla wczasowiczów.
- Pawilony wypoczynkowe, zlokalizowane są po terenie ośrodka wśród drzew i zieleni, przejścia do pawilonów wspólna utwardzona ścieżka spacerowa
- Pawilon wypoczynkowy wykonany w konstrukcji drewnianej wykonany w średnim standardzie wyposażenia i komfortu, posiada dwa samodzielne pokoje dwuosobowe z wspólnym użytkowaniem węzła sanitarnego, w którym jest zapewniona ciepła woda z bojlera i zimna woda z sieci miejskiej. Pokoje posiadają podstawowe wyposażenie wypoczynkowe.

- Budynek wielofunkcyjny, murowany, piętrowy zapewnia na ośrodku warunki socjalno-bytowe i kulturalne.
  Na parterze budynku, stylowa stołówka na piętrze sale gier sportowych oraz sala kawiarni.

3. Wartość ośrodka wypoczynkowego w Dziwnówku

- wyliczona wartość szczegółowa ośrodka wypoczynkowego przeliczono o wskaźnik inflacji tego roku oraz wskaźnik uwzględniający walory uzdrowiskowo-wypoczynkowe wynoszący tej miejscowości 1,71

6.267.067.260,0 x 1,71 = 10.716.685.010,-zł

- wartość gruntu i drzewostanu o powierzchni 4.436,0 m^2

221.533.840,0 + 9.169.000,0 = 230.702.840,- zł

ogółem 10.947.387.590,- zł

Inż. Tadeusz Becker
biegły Urzędu Wojewódzkiego
w Szczecinie
d/s szacowania obiektów budowlanych

w załączeniu: - szczegółowe wyliczenie wartości ośrodka
- szczegółowe wyliczenie wartości budynku usługow.
- wyposażenie ośrodka i budynku wielofunkcyjnego
- plan sytuacyjny zagospodarowania ośrodka
- rzut obiektu wypoczynkowego

Szczecin, październik 1991r

App J

Szczegółowe wyliczenie wartości pawilonu wczasowego

1. Charakterystyka techniczna pawilonu

- pawilon w konstrukcji drewnianej, posadowiony na ławie betonowe, parterowy
- konstrukcja szkieletowa pawilonu, wypełniona warstwą ocieplającą, od zewnątrz obite boarderią impregnowaną a od wewnątrz płyty pilśniowe pokryte tapetą
- podłogi drewniane na legarach wyłożone pcv - rulon
- sufit ocieplony, obity płytą pilśniowo pomalowany emulsją
- okna typ zespolony, drzwi typowe, powierzchnie stolarki malowane
- dach dwuspadowy o konstrukcji drewnianej, ocieplony, pokryty papą z posypką barwioną i odwodnieniem dachu
- pawilon wyposażony jest w sieć wod.-kan., instalację elektryczną, bojler do ciepłej wody, pomieszczenie sanitarne wyposażone w brodzik z baterią prysznic, umywalkę i wc.

2. Cena jednostkowa pawilonu

- kubatura: 4,2 x 7,2 x 2,4 = 74,0 m^3
- cena wyjściowa plus uzupełnienie: konstrukcja = 6.165,-
  ściany wew. = 2.407,-
  uzupełnienie = 2.493,-

  30.765,- zł/m^3
- dach: rzut dachu 6,0 x 5,4 = 35,2 m^2
- cena wyjściowa plus uzupełnienia: konstr.pokrycie = 7.069,-
  uzupełnienie = 6.780,-

  13.849,-
- wyposażenie w przedmiot nietrwałe razem = 7.148.900,- zł

3. Wartość pawilonu muzeum

- kubatura: 74,0 x 20.765,0 x 0,92 x 26,0 = 36.755.710,-
- dach 35,0 x 13.542,0 x 0,92 x 26,0 = 11.594.380,-
- wyposażenie w przedmioty /załącznik 1/ = 7.148.900,-

55.498.990,- zł

Zestawienie kosztów budynku wielofunkcyjnego na ośrodku

1. Krótka informacja techniczna

- budynek murowany piętrowy, stanowiący zaplecze, socjalno-bytowe i kulturalne ośrodka wypoczynkowego
- budynek posiada [illegible] salę stołówkową, salę kawiarnianą oraz pomieszczenia [illegible] a ponadto posiada pokoje gościnne
- w parterze budynku zlokalizowana jest kuchnia z obszernym zapleczem magazynów, odpowiednio wyposażone
- wnętrza budynku są starannie wykonane i wyposażone stylowo

2. Wartość budynku

elementy scalone i ich wartość:

- kubatura i konstrukcja budynku = 2.610.517.800,-
- wyposażenie technologiczne = 94.172.000,-
- udział w uzbrojeniu terenu = 4.025.710,-
- wystrój wnętrz budynku = 899.600.000,-

3.608.315.510,-

- wyposażenie zaplecza kuchennego /zestawienie załącznik 1/ = 998.273.620,-

4.606.589.130,- zł

Zestawienie wartości urządzenia terenu i obiektów towarzyszących
==

- Urządzenie terenu w zieleń i mała architektura

  ogółem jednost. 4.025.710,0 x 27 = 108.694.170,-

- Ogrodzenie ośrodka

  [illegible],0 x 10.[illegible],0 x 1,73 x 0,88 = 44.853.110,-

- Zbiornik ścieków, pojemność [illegible] 25 m^3

  25,0 x 836.557,10 x 1,73 = 36.181.100,-

- Budynek jednokondygnacyjny, [illegible] = 27.776.010,-

217.504.390,- zł

Ogólne zestawienie wartości Ośrodka Wypoczynkowego-Dziwnówek
==

26 pawilonów wypoczynkowych x 55.498.990,0	=	1.442.973.740,-
Budynek wielofunkcyjny w Ośrodku	=	4.606.589.130,-
Urządzenie terenu i inne	=	217.504.390,-
		6.267.067.260,- zł

APP[illegible]

Załącznik nr 1

Budynek wielofunkcyjny - wykaz przedmiotów nietrwałych

Lp.	nazwa przedmiotu	typ	nr fabr.	wartość
1.	szafa chłodnicza	S-147	3365	8.800.000,-
2.	" "	S-711	6692	7.000.000,-
3.	" "	S-147	3396	8.800.000,-
4.	" "	S-147	3366	8.800.000,-
5.	" "	S-147	3367	8.800.000,-
6.	uniwers.maszyna gaston.	MKN-11	31518	7.865.000,-
7.	" " "	MKN-11	31332	7.865.000,-
8.	krajalnica żywności	612 P	23897	6.500.000,-
9.	maszyna do mycia naczyń	MKU	23127	9.800.000,-
10.	zamrażarka	Z-43	63871	2.460.000,-
11.	"	Z-43	63872	2.460.000,-
12.	"	Z-43	63867	2.460.000,-
13.	szafa chłodnicza	S-711	3600	7.000.000,-
14.	obieraczka ziemniaków	[illegible]2-A	405	3.600.000,-
15.	kocioł warzelny parowy	KKP-7	287	3.200.000,-
16.	" " "	KKP-7	[illegible]	2.600.000,-
17.	kociołki parowe przech.	[illegible]P-5	27290	1.500.000,-
18.	" " "	[illegible]P-5	27056	1.500.000,-
19.	" " "	[illegible]P-5	27054	1.500.000,-
20.	trzon kuchenny elektr.	KE-4111	135	2.500.000,-
21.	" " "	KE-4111	165	2.500.000,-
22.	patelnia elektr.	PE-225	809	100.000,-
23.	" "	PE-225	833	100.000,-
24.	" "	PE-225	[illegible]	100.000,-
25.	taboret elektr.	TE-2	2518	1.500.000,-
26.	" "	TE-2	2516	1.500.000,-
27.	[illegible]	[illegible]	40056	4.500.000,-
28.	wyparzacz	[illegible]-1	614	2.000.000,-
29.	urządzen. do krojenia fryt.			2.009.000,-
30.	warnik elektr. [illegible]	[illegible]P-2	8079	1.900.000,-
				119.779.000,-
	- Inne wyposaż. drobne poniżej 245 pozycji			202.031.260,-
	- Inne wyposażenie pokoi gościnnych 216 pozycji			67.646.560,-
	Ogółem =			[illegible]98.273.620,- zł

APPJ

Załącznik nr 1 dalszy ciąg

[illegible] - [illegible]ie przedmioty nietrwałe

[illegible] pawilonu

2 [illegible]	x [illegible]4[illegible].000,-	=	1.[illegible]52.000,-	
4 tapczany jednoosobowe	x [illegible]40.000,0	=	3.3[illegible]0.000,-	
[illegible] stoliki [illegible]	x 1[illegible].000,0	=	33[illegible].000,-	
6 [illegible]	x 203.000,0	=	1.218.000,-	
4 szafki [illegible]	x [illegible]4.000,0	=	[illegible]96.000,-	
2 firanki	x 42.500,0	=	[illegible]5.000,-	
1 firanka	x 42.[illegible]00,0	=	42.500,-	
3 [illegible]anki	x 3[illegible],0	=	11[illegible].400,-	
			7.146.000,-	zł

COPY OF VALUATION OF SITE AT DZIWNOWEK

App. 1.

Zbiór podstawowych informacji:

Ośrodka wczasowego w D z i w n o w k u nad morzem

Ośrodek posiada 26 obiektów samodzielnych każdy dla 4 osób

Powierzchnia działki wynosi 4.436,0 m^2

Wartość Ośrodka ogółem wynosi 10.947.387.590,- zł
==========

Ośrodek w pełni wyposażony, czynny

APPENDIX K

FINANCIAL CONDITION & PERFORMANCE-FURTHER DETAILS

Balance Sheet

a. Fixed assets and capital expenditure

1. Fixed assets have been revalued on 31st December 1990 in accordance with government regulations which came into effect on 1st January 1991. A further more detailed revaluation took place in 1991. After these revaluations the value of fixed assets increased by a factor of 30. Fixed assets were not revalued in 1988 or 1989. Hyperinflation last peaked in January 1990 and has been reducing since.

2. Buildings account for 57.5% of fixed assets. Buildings not used for production account for 14.5% of fixed assets. The total value in the books for social premises etc. was 39.796 mln zloties as at 31st of May 1991. Buildings and machinery, by the end of 31st of May 1991, had been depreciated by 88%. Capital expenditure between 1988 to 1990 was minimal. The investment plan for 1991 was also not realised due to lack of funds.

(FIXED ASSETS)

6 A. CAPITAL EXPENDITURE SFMB FAMABUD SZCZECIN
in mln zl.

period	Expenditure on fixed assets	completed fixed asset expenditure	capital expenditure not comple- ted	Planned capital expendit. at year end
1988	255	239	286	315
1989	797	644	444	92
1990	1,590	402	1,641	2,783
31.05.91	300	1,520	421	2,483

3. Notes on the above capital expenditures

1. Expenditure on fixed assets during the relevant periods.

2. Completed fixed asset expenditure is the amount transferred from the fixed asset work in progress account on completion, in other words, when a building is finally completed or a large machine is installed and commissioned.

3. Capital expenditure not completed is the amount remaining in fixed asset work in progress at the end of the period.

4. Planned future capital expenditure is the value at the end of the period relating to approved projects not yet started.

6 B. CAPITAL EXPENDITURES NOT COMPLETED IN 1990 AND FINANCIAL SOURCES

(mln zl.)

ASSETS

	31.12.90	31.05.91
1. Capital investment costs	1,641	421
2. Installation costs	22	30
TOTAL	1,663	451

6 C. LIABILITIES

	31.12.90	31.05.91
1. Specific invest. gover. loan	128	199
2. Long-term loans	940	-
3. Own funds	595	252
TOTAL	1,663	451

6 D. 1991 TOTAL EXPENDITURE TO 31 MAY

- canteen in Dziwnówek	242
- overhead crane cabin	58
TOTAL	300

6 E. SCHEDULE OF PLANNED CAPITAL INVESTMENT FOR 1991

	amount mlr zl
1. Electrical	65
2. Canteen in Dziwnówek	300
3. Share in costs of building sewage-treatment in Dziwnówek	150
4. Other investment costs	12
5. Buying investment finished goods	3,107
TOTAL	3,634

4. The above schedule 6 E does not agree to 6 A as the capital expenditure approved for 1991 took place after the beginning of the year. Items 1 & 2 above are approved capital expenditure from previous years not completed by January 1991. Future capital expenditure at the end of 1990 was as follows:

6 F. FUTURE CAPITAL EXPENDITURE

Buildings SFMB Famabud second stage	2,204 mln zl
Buildings canteen in Dziwnówek	579 mln zl
TOTAL	2,783 mln zl

6 G. FIXED ASSETS PURCHASE PLAN FOR 1991

mln zl

1. Milling machines	x 3	1,023
2. Turning lathe	x 2	365
3. Automatic welder	x 1	42
4. Driller	x 3	831
5. Compressor	x 1	95
6. Clocking in machine	x 3	6
7. Cars	x 2	407
8. Overhead crane	x 1	58
9. Devices for canteen in Dziwnówek		200
10. Equipment for Dziwnówek		80
TOTAL		3,107

5. The capital expenditure plan for 1991 will not be realized because of lack of funds.

b. Stock of work in progress & finished goods

6. As can be seen from the following schedule stock appears to have increased over 3 years however, after stripping out inflation, the reverse has happened.

6 H. SUMMARY OF STOCK, WORK IN PROGRESS AND FINISHED GOODS AT THE END OF THE YEAR (HISTORICAL COST)
(MLN ZL)

	31.12.88	31.12.89	31.12.90	31.05.91
Raw materials	1.765	3.676	10.487	6.749
Work in progress	635	1.871	5.517	13.821
Finished products				5.978
TOTAL	2.400	5.547	16.004	26.548

6 I. ANALYSIS OF RAW MATERIALS IN FAMABUD

item	31.12.88		31.12.89		31.12.90		31.05.91
	mln zl	%	mln zl	%	mln zl	%	mln zl
materials from foundry	721	40,8	1.162	31,7	2.833	26,9	
other steel materials	300	17,0	639	17,4	1.795	17,2	
subassemblies	129	7,3	240	6,5	748	7,1	
transport parts	323	18,3	814	22,1	2.285	21,8	
electrical parts	104	5,9	151	4,1	1.191	11,4	
other materials	188	10,7	670	18,2	1.635	15,6	
TOTAL	1.765	100,0	3.676	100,0	10.487	100,0	6.749

6 J. ANALYSIS OF CONSUMPTION OF MATERIALS

item	31.12.88 mln zl	%	31.12.89 mln zl	%	31.12.90 mln zl	%	31.05.91 mln zl
materials from foundry	1.468	33,0	1.947	30,2	15.142	41,4	
other steel materials	367	8,2	637	9,9	5.646	15,4	
subassemblies	306	6,9	740	11,5	3.104	8,5	
transport parts	1.602	36,0	1.852	28,7	6.032	16,5	
electrical parts	319	7,2	555	8,6	6.186	16,9	
other materials	388	8,7	713	11,1	467	1,3	
TOTAL	4.450	100,0	6.444	100,0	36.577	100,0	14.474

7. Inventory turnover has fluctuated over 3 years but calculations based on the results for the first five months amount to 170 days. As production is low , in general terms, stock levels are sufficient to satisfy current levels of production for at least the next year.

6 K. SUMMARY OF MATERIAL TURNOVER
(mln zl)

period (year)	opening balance	income	consult.	closing balance	stock T/over in days
1988	959	5.256	4.450	1.765	145
1989	1.765	8.355	6.444	3.676	208
1990	3.676	43.388	36.577	10.487	105
31.05.91	10.487	10.736	14.474	6.749	170

8. It should be noted that in the above schedule stock turnover in days is probably overstated for 1989 (208 days) when inflation was increasing (70 % in December 1989 alone) and understated in 1990 (105 days) when it was on the decline. If the production profile is altered to any significant extend this will lead to the majority of stock being

obsolete. During 1991 the value of stock scraped was 184 mln zloties (USD 18.000). By May 1991 the substantial amount of work in progress meant that a large amount of working capital was tied up in this figure which was 13,821 mln zloties (USD 1 mln 300) or 47% of turnover. The factory had started producing 16 cranes which formed the bulk of the work in progress.

9. It should be noted that it was company policy to keep large stocks of materials because of unreliable suppliers. This is now not the case. Although stock values reduced in 1990 due to production utilising newly purchased items, there is a hidden value because slow moving items bought during the period of hyperinflation are shown at historic cost. If these items. which are slow movers, were sold they will realise a book profit many times their recovered value. For instance there are tonnes of steel-sheets, pipes and bars recorded in the books at between 5 and 20 % of todays purchase price. Therefore the stock turnover 170 is understated.

6 L. FACTORY WORK IN PROGRESS

at the day	amount mln zl	% of sale value
31.12.88	635	7,9
31.12.89	1.871	10,6
31.12.90	5.517	6,8
31.05.91	13.821	47,3

6 M BALANCE AS AT 31.05.91 WORK IN PROGRESS WAS AS BELOW

item	amount	value (mln zl)
Bogie frames 26TNa	200 pcs	4.462
Crane ZB-75/100	11 pcs	2.712
Crane ZB-120/200	5 pcs	3.712
Spare parts for cranes		84
Other work in progress		2.564
Other crane parts		287
TOTAL		13.821

10. There was a large increase in work in progress in 1991 being 47,3% of sales value. We advised the company's management to cease production of the cranes until customers were found. Material purchases were using up scare working capital.

BALANCE AS AT 31.05.91 IN FINISHED GOODS STORES

Cranes ZB 75/100	9 pcs	5.978 mln

11. In addition further nine cranes valued at 2.978 mln zloties (USD 260.000) are included, at cost, in finish goods. This is the first time (1991) the company has produced cranes without firm orders.

c. Debtors

12. Debtors have steadily increased as a proportion of turnover and at the end of May 1991 amounted to 10.680 mln zloties (USD 1 mln) or 37.2% of turnover. It now takes the company an average of 56 days to receive the amount due. One debtor is Konstal-Chorzów owing to FAMABUD 6.579 mln zloties (USD 600.000) or 66,6 % of debtors. Due to the high costs of borrowing, if invoices are not paid within 14 days they are classified as overdue and charged penalty interest . Amount due after charging penalty interest for this period is 5.550 mln zloties (USD 5.000) or 51% of total debtors. In spite of

trying to collect these outstanding sums in the courts the collection performance of the company has, as compared with 1990, deteriorated.

6 N TRADE DEBTORS

period	closing balance min zl	debtor to sale %	debtors turnover in days
31.12.88	1.472	18,3	66
31.12.89	5.119	29,0	112
31.03.90	9.893		197
31.06.90	7.514		162
31.09.90	7.025		35
31.12.90	8.938	11,0	29
31.03.91	12.000		52
31.05.91	10.862	37,2	56

13. The high debtors turnover figures in 1989 and in the first 6 months of 1990 are due to high inflation influencing the calculation.

AGED DEBTORS

6 O.	period in days						
up to:	14	30	60	90	150	>150	TOTAL
AMOUNT mln zl	5.315	4.582	319	157	302	187	10.862
STRUCTURE %	48,9	42,3	2,9	1,4	2,8	1,7	100,0

MAIN DEBTORS (as at 31.05.91)

1. "Konstal" Chorzów	6.579 mln zl
2. "Mostostal" Słupca	1.049 mln zl
3. "Marzen Consultants"	1.242 mln zl
4. Biuro Zaop. i Zbytu Sosnowiec	689 mln zl
5. Total	
(88% of total amount of receivables)	9.559 mln zl

d. Loans

The company is utilising the 7.000 mln (USD 70.000) loan issued to it by Pomoranian Credit Bank, which is renewable monthly . The interest rate on this loan is approximately 83% per annum as at July 1991. In addition the Bank takes a 1% per month commission making the cost of borrowing near 100% per annum. Poland's inflation rate has reduced dramatically making the real cost of borrowing unusually high. Interest rates are likely to fall as banks become more confident that it will not reach its previous levels. The enterprise also has an interest free loan of 950 mln zloties.

CREDITS AND LOANS

SFMB Famabud long-term credits at "0" % interest rate:

1. "Rafinery Czechowice-Dziedzice" (Bielsko-Biała district)
   - 940 mln zl
   - purpose: building of a canteen at the resort in Dziwnówek
   - annual repayments from 1991 amounting to 10 mln zl

2. "Polam" in Gostynin
   - 30 mln zl granted in 1987
   - annual repayments from 1991 amounting to 10 mln zl

3. "Mostostal" in Poznań
   - 20 mln zl granted in 1987
   - quarterly repayments form 1990 amounting to 2.5 mln zl

e. Creditors

14. As at 31st of May 1991 consisted of:

6 R. CREDITORS

	mln zl	USD
Trade creditors	12.710	1.200
Tax	6.215	600
National insurance	924	90
Other creditors	1.298	120
TOTAL:	21.197	2.010

15. Due to the difficult financial position creditors are not paid when due. 35% or 10.822 mln zloties (USD 1.000.000) of trade creditors are overdue as well as 64% or 649 mln zloties (USD 60.000) of liabilities for tax and national insurance.

6 S. SUMMARY OF CREDITORS

period	balance at the end of the period mln zl	percent of purchases
31.12.88	1.720	32,7
31.12.89	3.546	42,4
31.12.90	9.512	21,9
31.05.91	12.710	118,4

6 T. OVERDUE CREDITORS

SCHEDULE OF OVERDUE CREDITORS (LIABILITIES) ON 31.05.91	%	AMOUNT MLN ZL
from May 1991 (to 30 days)	1,4	149
from April 1991 (to 60 days)	28,4	3.078
from March 1991 (to 90 days)	19,2	2.079
from Feb. 1991 (to 120 days)	26,2	2.831
from Jan. 1991 (to 150 days)	20,1	2.178
from 1990 (over 150 days)	4,7	507
TOTAL	100,0	10.822

16. The current situation is exaggerated by the high interest rate penalties on overdue amounts. These currently stand at 140 % per annum. By May 1991 the firm owed 7.000 mln zloties (USD 700.000) to suppliers and 2.000 mln zloties (USD 200.000) for tax and national insurance due to such penalties. The May balance sheet prepared by management only recognised 1.400 mln zloties (USD 1.400) of interest penalties.

Break even analysis

17. It is estimated that the company's fixed costs for 1991 will amount to 37.000 mln zl (US$ 3.7 mln) or 41 % of total costs. The break even analysis calculations on the sale of the most popular crane ZB 75/100 result in turnover at breakeven point of 74.000 mln zl (US$ 7.4 mln) or 67 units sold. The calculations also show that based on the cost/sales price structure for the first half of the year the breakeven point is only 20 units or 23.000 mln zl (US$ 2.3 mln). This is as a result of using historical cost for materials and therefore the break even calculations automatically take into account this lower cost. Naturally using historic costs during an

inflationary period to calculate break even point gives a false impression of the situation. It is appropriate to use material purchase costs.

18. The breakeven calculation was as follows :

6 Y. BREAK EVEN CALCULATIONS

Variable unit costs	563 mln zl
Fixed unit costs	370 mln zl
Total unit cost	933 mln zl
Profit	187 mln zl
Factory price	**1120** mln zl

19. Breakeven point (BEP) for the factory is nearly 67 units of crane ZB 75/100

BEP-amount

$$x = \frac{f}{p-v} = \frac{36,893}{1,120-563} = 66,24 \text{ pcs}$$

BEP - value

$$y = \frac{p*f}{p-v} = \frac{1,120*66,24}{} = 74,189\text{mln}$$

20. Between 1 January and 30 June 1991 the company achieved the following results:

Variable unit costs	229 mln zl
Average sale price	1.169 mln zl
Fixed costs	18.562 mln zl

21. Breakeven point was at 20 units of ZB-75/100

BEP-amount

$$x = \frac{f}{p-v} = \frac{18,562}{1,169-229} = 19,75 \text{ pcs}$$

BEP-value

$$y = \frac{p*f}{p-f} = 1,169*19,75 = 23,088\text{mln zl}$$

x - production in units at BEP

y - turnover at BEP

p - selling price

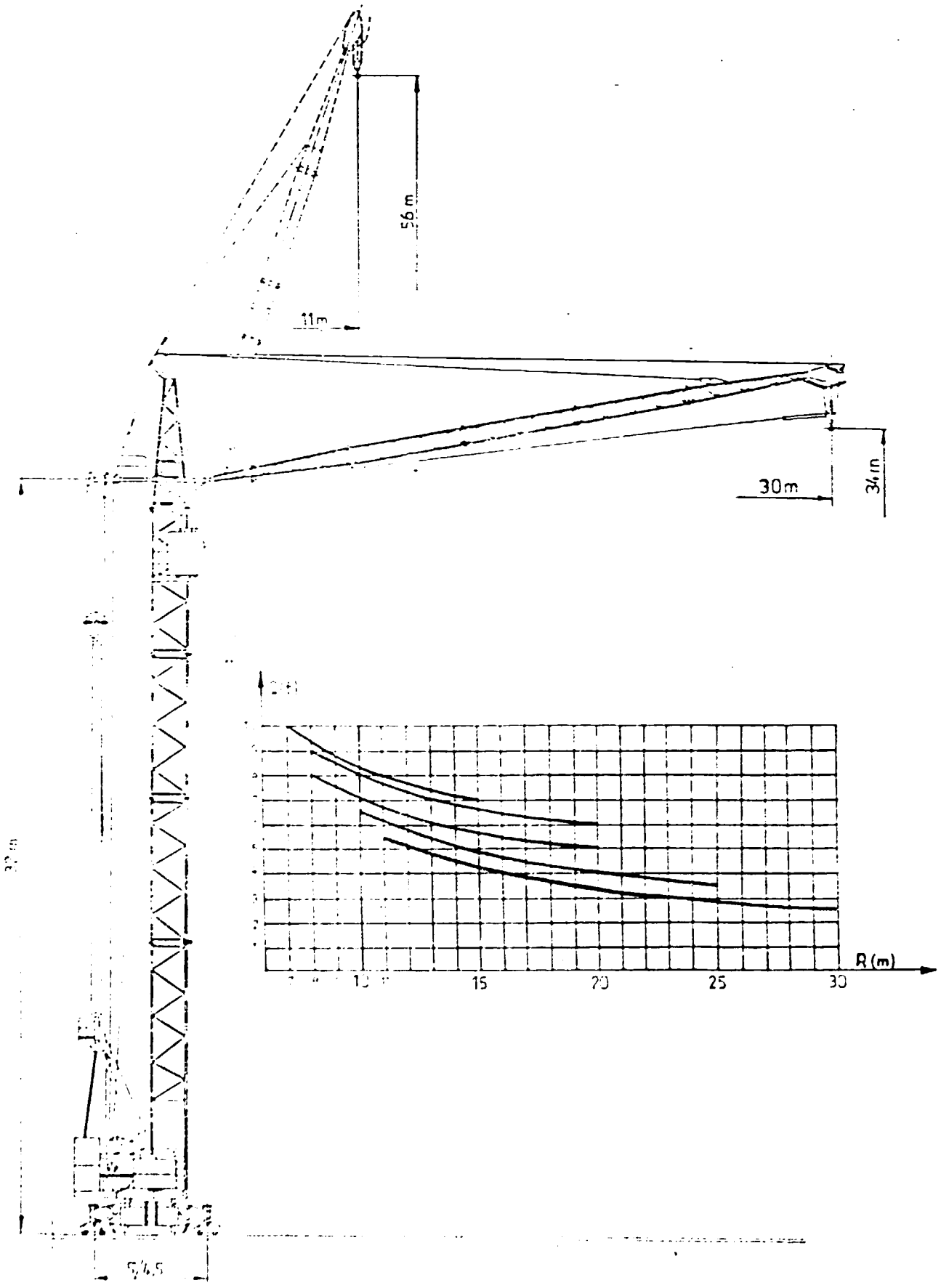
v - unit variable costs

f - fixed costs

BUILDING CRANE

ZB-75/100

App L



The building crane ZB-75/100 is designed for vertical and horizontal handling of loads in housing and industrial building.
It finds application at erection of buildings up to the height of 12 storeys for any construction technology.

TECHNICAL DATA:

Load moment 1000 kNm
Max. lifting capacity 10000 kg
Radius

max (m)	30	25	20	15
min (m)	11	10	8	7

Lifting height at outreach

max (m)	34	33	32	32
min (m)	56	51	46	41

Lifting speed (m min) 3-rope sheave block

I gear	6.5 - 10.5	9.5 - 11	21 - 23	at Q≤ 10 t
II gear	12.5 - 20.5	18.5 - 21.5	41.5-45	at Q≤ 4.5 t

Lowering speed (m min) 3-rope sheave block

I gear	2 - 6.6	13 - 11.5	27.5 - 22.5	at Q≦10 t
II gear	3.9 - 1.5	25.5 - 22.5	54.5 - --	at Q≦4.5 t

Time of outreach change	72 70 67 64 s
Crane slewing speed	0.76 r.p.m.
Crane travelling speed	30 m min
Track spacing	4.5 m
Trolley spacing	5.0 m
Max. bodywork turning radius	3.4 m
Inner rail min. turning radius	4.5 m
Crane weight(without counterweight)	36 t
Counterweight	32 t
Max. pressure of the trolley on the rail	420 kN
Power take-off	53 kW

MANUFACTURER:

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Budowlanych "ZREMB-FAMABUD"

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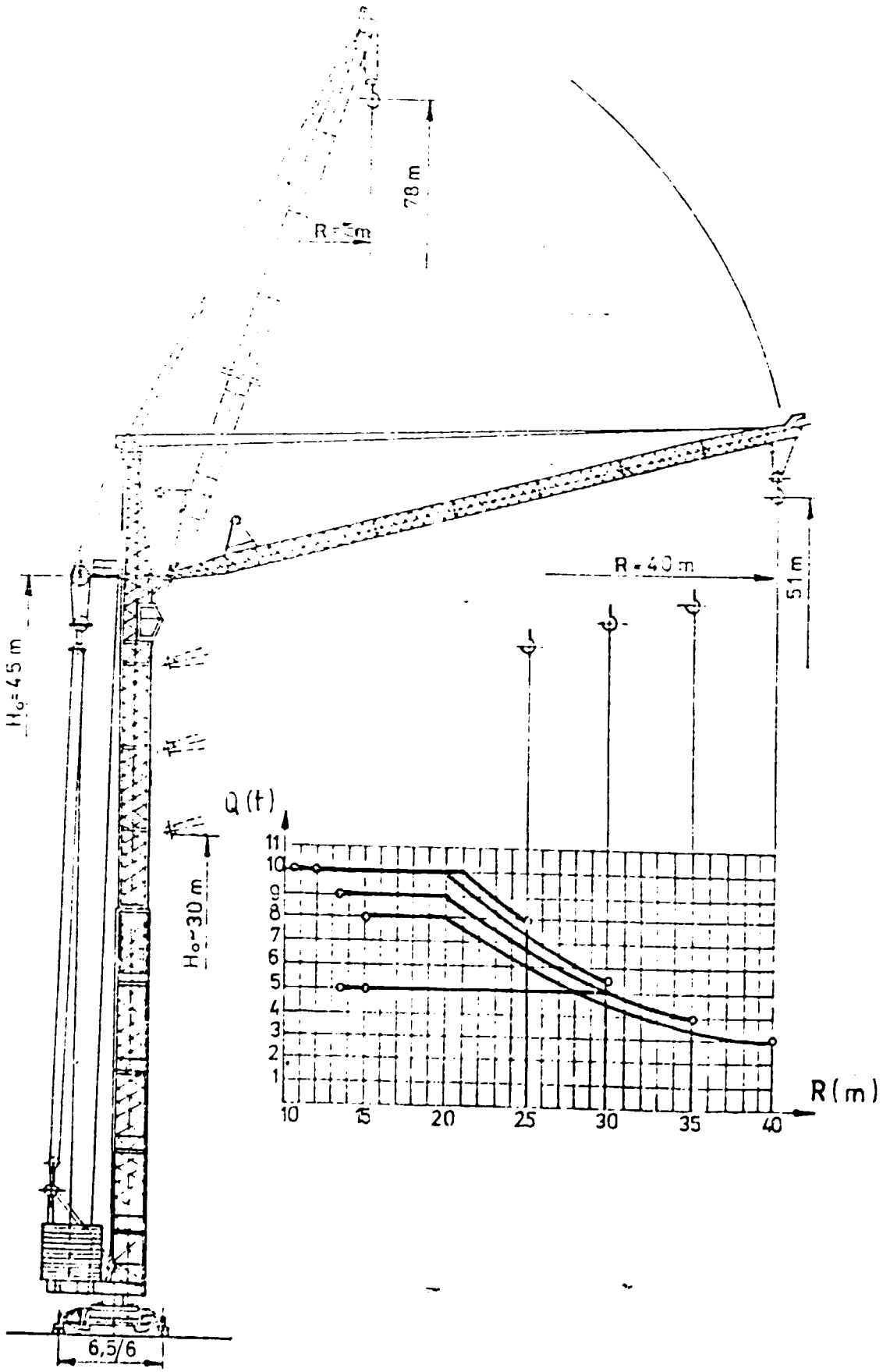
telex: 0422240
telefax: 52-28-52


78 m
R = 5 m
R = 40 m
51 m
H_o = 45 m
H_o = 30 m
Q (t)
11
10
9
8
7
6
5
4
3
2
1
10
15
20
25
30
35
40
R (m)
6,5/6

The BB-120/200 crane has been designed for vertical and horizontal handling of loads in housing and industrial building. Because of its high capacities, radius and lifting range as well as precision of operation the BB-120/200 may be recommended for any construction technology.

TECHNICAL DATA:

Load moment 2100 kNm
Max. lifting capacity 10000 kg

Radius					
	max	40	35	30	25
	min	15	13.5	12	10.5
Lifting height at outreach	max	34	33	32	32
	min	56	51	46	41

Lifting and lowering speed

	Starting step	I	II	III	IV	V
4-rope sheave block	Load t	Q = 0 (empty hook)				
	Lifting m/min	6	9	12	15	30
	Lowering m/min	-	3.5	7	15	30
	Load t	Q = 10				Q=5
	Lifting m/min	2.5	3.5	9	15	30
	Lowering m/min	2.5	5	10	15	30
2-rope sheave block	Load t	Q = 5				Q=2.5
	Lifting m/min	9.5	13.5	22	30	60
	Lowering m/min	4	8	16	30	60

Time of outreach change	120/100/85/70 s
Crane slewing speed	0 to 0.8 r.p.m.
Crane travelling speed	30 m/min
Track spacing	6 m
Trolley spacing	6.5 m
Max. bodywork turning radius	5 m
Inner rail min. turning radius	10 m
Crane weight (without counterweight)	63 t
Counterweight	55 t
Max. pressure of the trolley on the rail	600 kN
Power take-off	70 kW

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App. 2

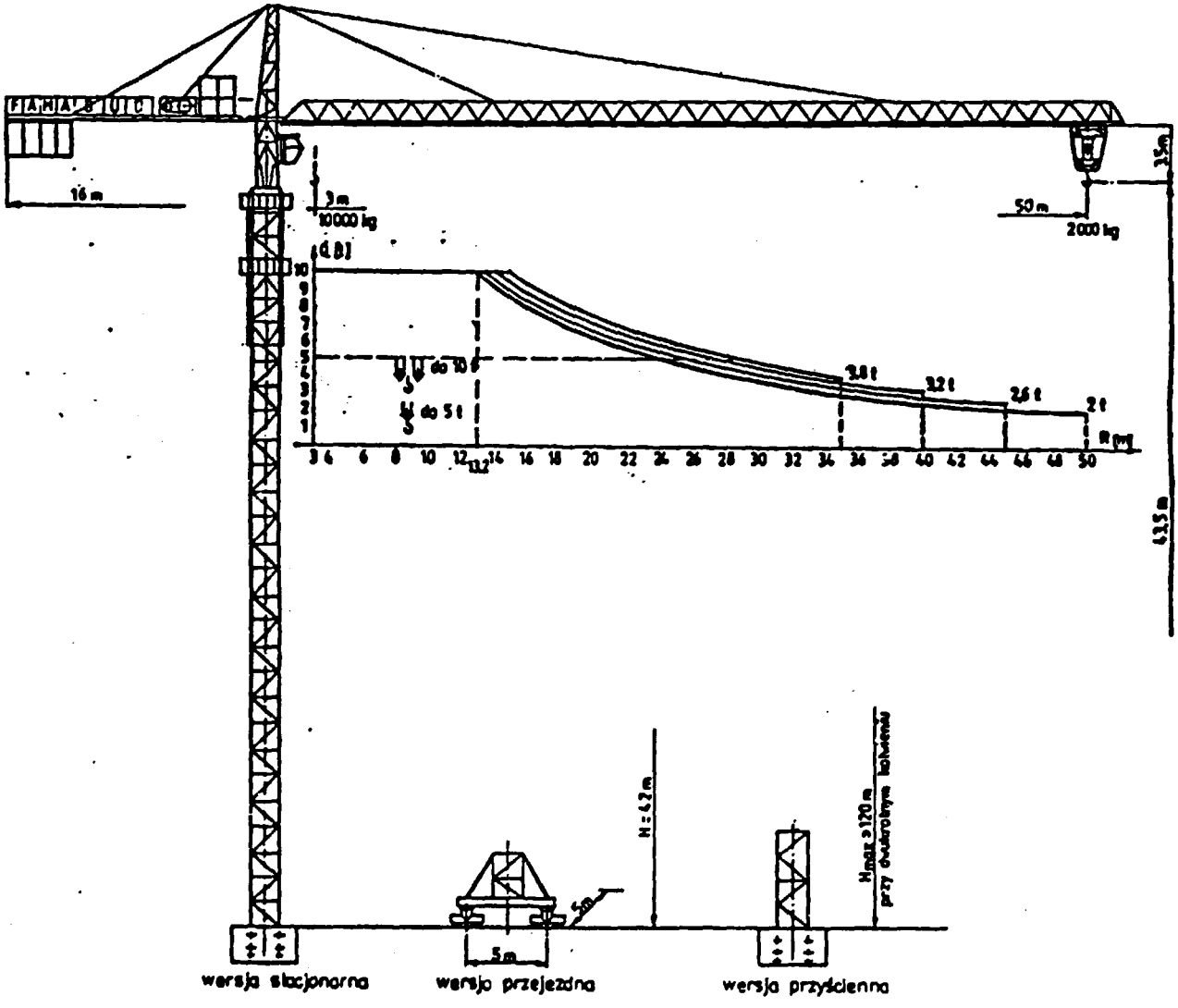
ŻURAW BUDOWLANY
SAMOWZNOSZĄCY

ŻBS-1000

Wprowadzamy nowoczesny żuraw w wersji stacjonarnej, przejezdnej i przyściennej.

Z dużą ilością wersji wysokości podnoszenia i wysięgu, długim wodzakowym wysięgnikiem.

Stałą wieżą, obrotem wysięgnika u góry, co czyni żuraw szczególnie przydatnym w budownictwie miejskim.



CHARAKTERYSTYKA TECHNICZNA (WSTEPNA) ŻURAWIA ŻBS-1000

Moment udźwigu	M_Q = 1000 kNm
Max. moment udźwigu	$M_{Qmax} \cong$ 1500 kNm
Udźwig max. (wersja stacjonarna)	Qmax = 10 000 kg
Udźwig max. (wersja przejezdna)	Qmax = 8 000 kg
Udźwig na wysięgu max.	Q = 2 000 kg
Wysięg max.	Rmax = 50 m
Wysięg min.	Rmin. = 3 m
Wysokość podnoszenia żurawia stacjonarnego	H = 43,5 m
Wysokość podnoszenia żurawia przejezdnego	H = 42,0 m
Wysokość podnoszenia max. przy dwukrotnym kotwieniu	Hmax = 120 m
Rozstaw kół jezdnych (rozstaw toru)	k = 5 m
Rozstaw osi kół	b = 5 m
Prędkości podnoszenia	Zblocze 4-pasmowe
$Q \leqslant 10\,000$ kg	Vp = 2,5; 5; 10; 15; 30 m/min.
	Zblocze 2-pasmowe
$Q \leqslant 5\,000$ kg	Vp = 5; 10; 20; 30; 60 m/min.
Prędkość obrotu	n_o = 0→0,8 obr/min.
Prędkość wodzenia	V_{wo} = 0→60 m/min.
Prędkość jazdy	V_j = 25 m/min.
Masa własna (wersja stacjonarna)	G ≅ 52 t
Masa własna (wersja przejezdna)	G ≅ 64 t
Obciążenie koła	$F_k \cong$ 30 t
Zapotrzebowanie mocy	N ≅ 50 kW
Balast na przeciwwysięgniku	Bw ≅ 10 t
Balast na podwoziu	Bp ≅ 70 t

P r o d u c e n t :

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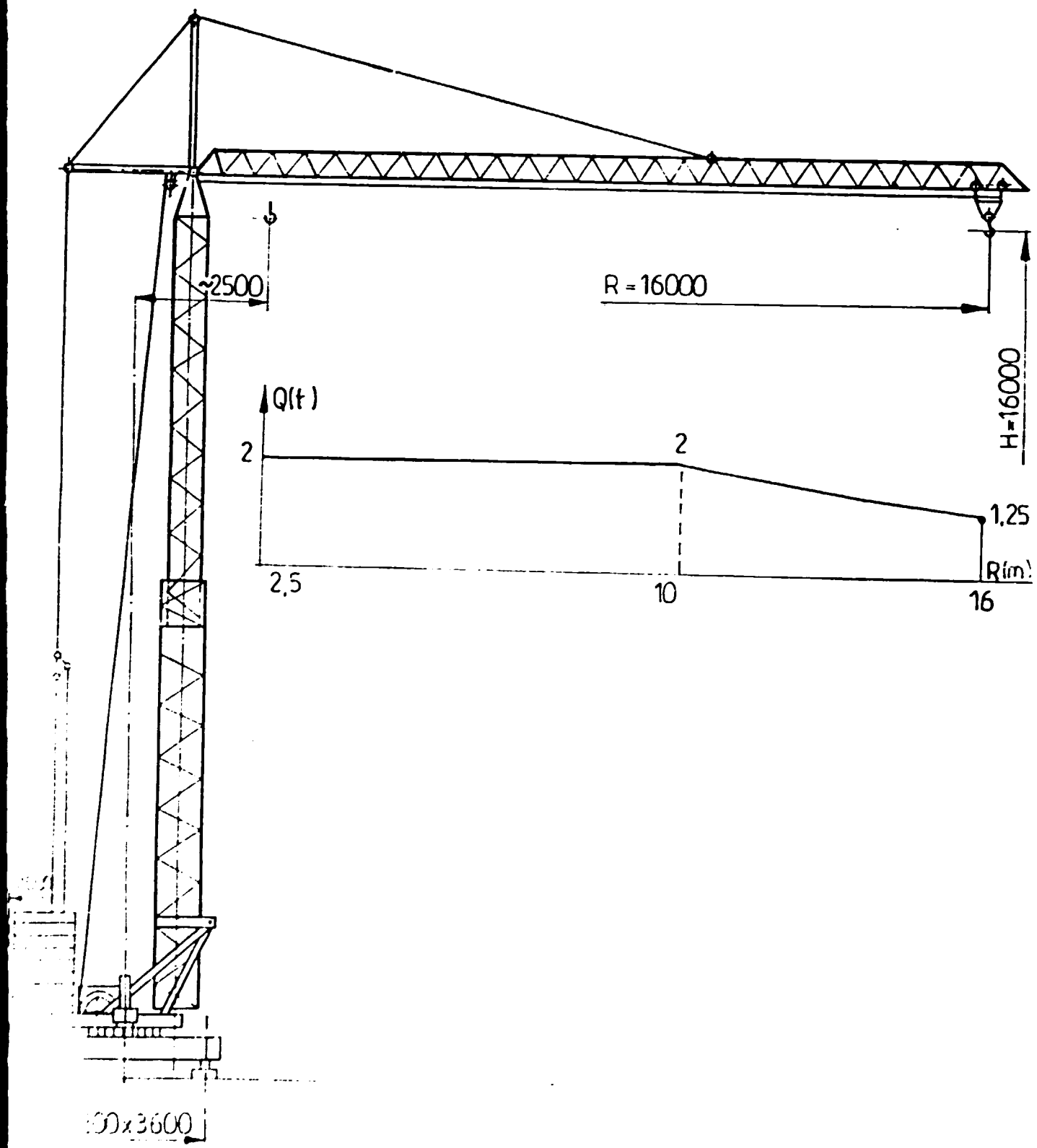
APPL

BUILDING CRANE

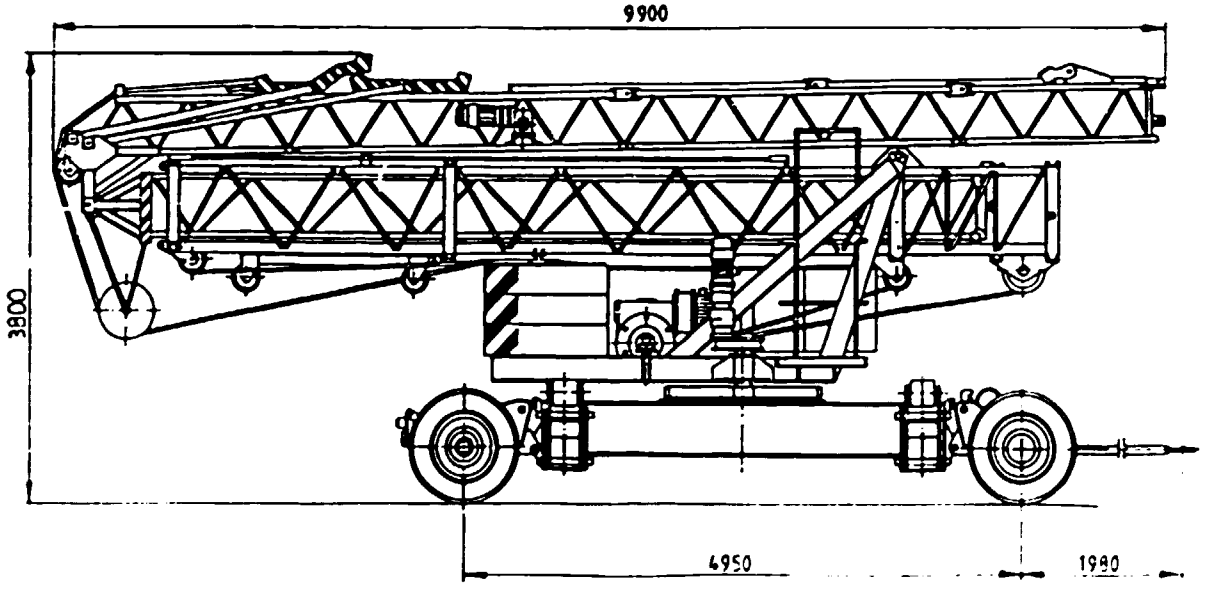
ŻB - 20



The building crane ŻB-20 is designed for vertical and horizontal handling of loads in housing and industrial building.
It finds application at erection of buildings up to the height of 4 storeys.
Crane is quick at assembly and disassembly, this crane is used in exploitation on the support.
This crane can be transported on his special wheel set.

TECHNICAL DATE

Load moment	200 kNm
Max. lifting capacity	2000 kg
Max. radius	16 m
Lifting height	16 m
Lifting speed	18,6/2,8 m/min
Trolley travelling speed	24/12 m/min
Crane slewing speed	0,75/0,38 obr/min
Power take-off	10,1 kW
Support spacing	3,2 x 3,6 m
Max. bodywork turning radius	2,5 m
Crane weight	7,5 t
Counter weight	9,0 t



ROAD TRANSPORT

M a n u f a c t u r e r :

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"ZREMB - FAMABUD"
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Section A3

TOWER CRANES

SELF-ERECTING

Model	Max load t	Min radius m	Max load t	Max radius m	Max height under hook m	Max hoist speed m min	Max slew speed rpm	Power source
ALFA (Italy)								
A104	[illegible]	10.50	0.60	16.00	16.00	25.00	1.00	E
A213	1.50	12.50	0.75	24.00	18.00	44.00	1.10	E
A233	[illegible]	8.50	0.75	28.00	22.00	44.00	1.10	E
A251	[illegible]	6.50	0.83	[illegible]	23.50	60.00	[illegible]	E
A363	[illegible]	13.50	0.60	25.00	22.00	40.00	1.10	E
A463	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E
A502S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E
A511SP	[illegible]	[illegible]	[illegible]	[illegible]	33.50	50.00	[illegible]	E
AF1028	[illegible]	[illegible]	1.00	[illegible]	20.00	40.00	[illegible]	E
ARCOMET (Belgium)								
ARCO 12	0.80	6.50	0.30	14.00	12.50	22.00	1.00	E
ARCO 14	1.00	8.00	0.40	16.00	14.50	22.00	1.00	E
ARCO 16S	1.00	8.00	0.40	16.00	14.50	22.00	1.00	E
ARCO 18S	1.00	10.00	0.40	20.00	16.00	22.00	1.00	E
ARCO 20S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E
T10	[illegible]	[illegible]	[illegible]	[illegible]	13.00	[illegible]	[illegible]	E
T20	1.50	14.00	0.70	[illegible]	15.50	30.00	1.00	E
City 20	[illegible]	14.00	0.70	[illegible]	15.50	30.00	1.00	E
TM20	[illegible]	14.00	0.70	[illegible]	15.50	30.00	1.00	E
TR20	1.50	14.00	0.70	20.00	15.50	30.00	1.00	E
T24	2.00	12.50	0.70	24.00	20.00	45.00	1.00	E
City 24	2.00	12.50	0.70	24.00	20.00	45.00	1.00	E
TM24	2.00	12.50	0.70	24.00	20.00	45.00	1.00	E
TR24	2.00	12.50	0.70	24.00	20.00	45.00	1.00	E
T25	[illegible]	11.00	1.00	25.00	20.00	45.00	1.00	E
City 25	[illegible]	[illegible]	[illegible]	[illegible]	20.00	45.00	1.00	E
TM25	[illegible]	[illegible]	[illegible]	[illegible]	20.00	45.00	1.00	E
TR25	[illegible]	11.00	1.00	25.00	20.00	45.00	1.00	E
T33A	[illegible]	13.30	1.00	30.00	23.50	45.00	1.00	E
City 33	4.00	13.30	1.00	30.00	23.50	45.00	1.00	E
TM33	4.00	13.30	1.00	30.00	23.50	45.00	1.00	E
TR33	4.00	13.30	1.00	30.00	23.50	45.00	1.00	E
T40A	4.50	14.30	1.00	40.00	36.50	60.00	1.00	E
T80A	10.00	15.00	2.27	40.00	36.50	60.00	1.00	E

NOTE: all models can be crawler mounted

Model	Max load t	Min radius m	Max load t	Max radius m	Max height under hook m	Max hoist speed m min	Max slew speed rpm	Power source
ASTOM (Italy)								
ATS 512	[illegible]	3.01	0.50	12.00	10.00	20.00	0.90	E
ATS 622	1.60	11.00	0.60	22.00	18.00	36.00	1.00	E
ATS 618	1.00	11.05	0.60	18.00	15.00	24.00	1.00	E
ATS 727	1.80	13.05	0.85	25.00	20.00	36.00	1.00	E
	1.80	13.05	0.70	27.00	20.00	36.00	1.00	E
ATS 308	3.00	10.00	0.75	30.00	21.00	40.00	1.00	E
ATS 1525	3.00	15.00	1.50	25.00	24.50	40.00	1.00	E
ATS 1030	3.00	12.50	1.00	30.00	24.50	40.00	1.00	E
ATS 833	[illegible]	11.50	0.75	33.00	24.50	40.00	1.00	E
ATS1035B	[illegible]	14.50	1.00	35.00	22.00	40.00	1.00	E
ATS 1340	[illegible]	[illegible]	[illegible]	[illegible]	32.00	50.00	0.80	E
ATS 1342	[illegible]	12.00	1.30	42.00	28.00	50.00	0.80	E
ATS 1142	[illegible]	11.50	1.10	42.00	32.00	50.00	0.80	E

Section A3

TOWER CRANES

SELF-ERECTING

Model	Max load @ min radius t	Min radius m	Max load @ max radius t	Max radius m	Max height under hook m	Max hoist speed m/min	Max slew speed rpm	Power source
BPR-CADILLON (France)								
CHRONO FLASH 13	1.00	7.30	[illegible]	13.00	12.00	20.00	1.00	E
CHRONO 16	1.60	9.15	[illegible]	16.00	17.00	30.00	1.00	E
CHRONO 20	1.80	9.15	[illegible]	20.00	17.00	36.00	1.00	E
CHRONO 22	1.80	10.60	[illegible]	22.00	17.00	36.00	1.00	E
CHRONO 25A	3.00	10.50	1.00	25.00	20.00	36.00	1.00	E
CHRONO 30A	3.00	12.30	1.00	30.00	20.00	36.00	1.00	E
CHRONO FLASH 35	4.50	10.30	1.00	35.00	24.00	50.00	0.80	E
CIR 35	4.50	10.30	1.00	35.00	24.00	50.00	0.80	E
CHRONO FLASH 40	4.50	12.30	1.00	40.00	24.00	50.00	0.80	E
CIR 40	4.50	12.30	1.00	40.00	24.00	50.00	0.80	E
CHRONO 40S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E
CHRONO 45	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E
CHRONO 50	10.00	13.50	2.00	50.00	38.00	60.00	0.70	E
CHRONO 55	10.00	14.70	2.00	55.00	38.00	60.00	0.70	E
CATTANEO* (Italy)								
CM 47	0.70	9.00	0.50	12.00	■	10.00	1.00	E
CM 60	0.80	9.00	0.60	12.00	■	12.00	1.00	E
CM 45	0.80	11.00	0.60	16.00	■	16.00	1.00	E
CM 46	0.80	9.50	0.40	16.00	■	16.00	1.00	E
CM 3[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	■	18.00	[illegible]	E
CM 36R	1.20	11.90	0.60	20.00	■	18.00	1.00	E
CM 44	1.20	13.60	0.75	20.00	■	18.00	1.00	E
CM 43	1.20	12.00	0.60	22.00	■	18.00	1.00	E
CM 55E-80	1.20	13.90	0.60	25.00	■	18.00	1.00	E
CM 42	1.50	15.60	1.00	22.00	■	18.00	1.00	E
CM 41	1.50	14.20	0.75	25.00	■	18.00	1.00	E
CM 41R	1.50	13.00	0.60	28.00	■	18.00	1.00	E
CM 42T	3.00	8.90	1.00	22.00	■	24.00	1.00	E
CM 41T	3.00	7.60	0.75	25.00	■	24.00	1.00	E
CM 81	2.[illegible]	12.[illegible]	0.[illegible]	28.00	■	19.00	0.90	E
CM 5[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	■	22.[illegible]	[illegible]	E
CM 37[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	■	20.00	[illegible]	E
CM 34R	3.[illegible]	[illegible]	0.75	35.00	■	20.00	1.00	E
CM 40	4.00	11.50	1.20	30.00	■	26.00	0.90	E
CM 39	4.[illegible]	9.60	0.75	36.00	■	26.00	0.90	E
CM 39R	4.00	12.00	1.08	36.00	■	23.00	0.80	E
CM 52	4.00	14.00	1.15	41.00	■	33.00	0.80	E
CM 51	6.00	13.00	1.50	45.00	■	33.00	0.80	E
CM 21	1.20	14.50	0.60	25.00	■	22.00	1.00	E
CM 22	1.2[illegible]	15.[illegible]	0.75	22.[illegible]	■	22.[illegible]	1.0[illegible]	E
CM 29	1.[illegible]	1.[illegible]	0.75	25.[illegible]	■	25.[illegible]	1.00	E
CM 3[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	■	2[illegible]	[illegible]	E
CM 32	1.[illegible]	1[illegible]	0.75	3[illegible]	■	27.00	1.00	E
CM 27R	3.[illegible]	11.40	1.00	30.00	■	27.00	1.00	E
CM 28R	3.00	9.40	0.75	35.00	■	27.00	1.00	E
CM 35	4.[illegible]	11.[illegible]	1.00	3[illegible]	■	34.00	0.90	E
CM 36	4.00	10.90	0.75	41.00	■	34.00	0.90	E
CM 50i	4.00	11.80	1.00	40.00	■	34.00	0.80	E
CM 48i	4.[illegible]	14.10	1.00	45.00	■	34.00	0.80	E

*[illegible]

Section A3

TOWER CRANES

SELF-ERECTING

Model	Max load t	@	Min radius m	Max load t	@	Max radius m	Max height under hook m	Max hoist speed m. min	Max slew speed rpm	Power source
CIBINGRU (Italy)										
J40	[illegible]		[illegible]	0.30		8.30	13.50	25.00	●	E
J60	[illegible]		5.20	0.40		12.00	[illegible]	25.00	●	E
S20	1.20		7.50	0.50		16.00	19.50	25.00	●	E
JJS	1.20		11.70	0.50		22.00	[illegible]	33.00	●	E
S30	1.20		11.80	0.60		22.00	25.50	33.00	●	E
S40	1.50		11.00	0.60		25.00	29.00	33.00	●	E
J90	2.00		13.70	1.00		25.00	19.50	36.00	●	E
AS	1.20		15.70	0.60		30.00	24.00	34.00	●	E
ASS	1.50		15.00	0.90		30.00	26.00	34.00	●	E
AGS371020	[illegible]		[illegible]	1.00		37.00	[illegible]	40.00	●	E
AGS42752	[illegible]		[illegible]	0.75		42.00	[illegible]	40.00	●	E
SFA	[illegible]		[illegible]	1.00		42.00	[illegible]	40.00	●	E
ASG	[illegible]		15.00	1.00		45.00	[illegible]	44.00	●	E
COMANSA (Spain)										
SA-144 D	1.20		5.80	0.40		14.00	14.00	18.00	1.20	E
SA-167 D	1.30		10.10	0.75		16.00	16.00	30.00	1.20	E
SA-187 D	1.30		11.30	0.75		18.00	18.20	30.00	1.00	E
SA-227 D	[illegible]		9.90	0.75		22.00	22.50	40.00	1.00	E
SA-257 D	[illegible]		11.10	0.75		25.00	22.50	40.00	1.00	E
SA-3 120 D	[illegible]		[illegible]	1.20		30.00	[illegible] 50	50.00	1.00	E
SA-40100 D	4.00		13.40	1.00		40.00	31.00	80.00	0.80	E
SA-40150 D	[illegible]		[illegible]	1.50		40.00	[illegible]	[illegible]	0.80	E
SA-40200 D	8.00		13.70	2.00		40.00	32.00	54.00	0.80	E
SA-40210 D	8.00		14.40	2.10		40.00	32.00	54.00	0.80	E
SA-40300 D	8.00		18.30	3.00		40.00	31.50	54.00	0.80	E
SA-50200 D	10.00		14.90	2.00		50.00	38.00	42.00	0.80	E
COOCH* (UK)										
35 13	[illegible]		4.27	0.31		12.20	[illegible]	30.5	[illegible]	DH
46 13	[illegible]		[illegible]	[illegible]		14.00	[illegible]	30.50	1.00	DH
[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	DH
EPGEP* (Hungary)										
FT 40 50	[illegible]		[illegible]	1.15		35.00	[illegible] 50	[illegible]	0.80	E
FT 60 1	4.50		3.00	1.70		35.00	32.60	80.00	0.73	E
Az FTR 75	12.50		5.00	2.75		25.00	10.00	8.00	0.34	E

*manufactured by [illegible]

Model	Max load t	@	Min radius m	Max load t	@	Max radius m	Max height under hook m	Max hoist speed m. min	Max slew speed rpm	Power source
FERGRU (Italy)										
AF 412	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	E
AF 416	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	E
AF [illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	E
AF 519	[illegible]		10.30	0.50		19.00	[illegible]	40.00	1.00	E
AF 245	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	E
AF 720	1.20		11.00	0.60		22.00	15.40	40.00	1.00	E
AF 345	1.50		3.60	0.60		22.00	15.40	40.00	1.00	E
AF 825	1.00		13.00	0.80		25.00	15.40	40.00	[illegible]	E
AF 355	[illegible]		3.60	0.50		25.00	[illegible]	[illegible]	[illegible]	E
AF 445	[illegible]		[illegible]	[illegible]		25.00	[illegible]	[illegible]	[illegible]	E
AF 455	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	E

TOWER CRANES

SELF-ERECTING

Model	Max load t	@ Min radius m	Max load t	@ Max radius m	Max height under hook m	Max hoist speed m/min	Max slew speed rpm	Power source
FERRO (Italy)								
FSR 14*	[illegible]	[illegible]	0.30	[illegible]	13.00	[illegible]	[illegible]	E
FSR18*	[illegible]	[illegible]	0.50	[illegible]	16.00	36.00	[illegible]	E
FSR20*	[illegible]	10.76	0.75	[illegible]	19.00	36.00	[illegible]	E
FSR22*	1.50	9.80	0.60	22.00	19.00	36.00	0.90	E
F33.20	1.50	14.20	1.00	20.00	19.00	36.00	0.90	E
F33.24	1.50	13.50	0.75	24.00	19.00	36.00	0.90	E
F43.25	[illegible]	9.60	1.00	[illegible]	21.50	36.00	0.90	E
F43.28	[illegible]	9.50	0.85	[illegible]	21.50	36.00	0.90	E
F43.30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E
F53.30	[illegible]	12.20	1.10	[illegible]	23.50	[illegible]	0.90	E
F53.33	[illegible]	[illegible]	[illegible]	[illegible]	23.50	[illegible]	0.90	E
F53.35	[illegible]	[illegible]	0.75	[illegible]	23.50	[illegible]	[illegible]	E
FX13 30	[illegible]	[illegible]	1.30	[illegible]	32.00	45.00	1.10	E
FX10 34	4.00	9.50	1.00	[illegible]	32.00	45.00	1.10	E
FX7.5 37	4.00	8.10	0.75	37.00	32.00	45.00	1.10	E
FX12 39	4.00	13.60	1.25	39.00	36.00	45.00	1.10	E
FX10 42	4.00	11.60	1.00	42.00	36.00	45.00	1.10	E
FX8.5 45	4.00	10.70	0.85	44.50	36.00	45.00	1.10	E
*220V [illegible]								
FUOCHI MILANESI (Italy)								
RB 410	[illegible]	[illegible]	[illegible]	[illegible]	11.00	[illegible]	[illegible]	E
RB 512	0.73	7.00	0.50	[illegible]	11.00	10.00	0.90	E
RB5151	[illegible]	[illegible]	0.50	[illegible]	13.20	10.00	[illegible]	E
RB 516	0.80	9.00	0.50	[illegible]	15.50	34.00	[illegible]	E
RB 718	1.20	11.00	0.70	18.00	17.00	34.00	0.90	E
RB 620	1.20	11.00	0.60	20.00	17.00	34.00	0.90	E
RB7 522	1.20	14.00	0.75	22.00	17.00	38.00	0.90	E
RB822	1.40	13.00	0.80	22.00	20.00	38.00	0.90	E
RB 1020	1.40	13.00	1.00	20.00	20.00	38.00	0.90	E
RB 725	1.40	13.00	0.70	25.00	20.00	38.00	0.90	E
RB 1030	[illegible]	[illegible]	[illegible]	[illegible]	23.00	[illegible]	[illegible]	E
RB 7251	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E
RB 8 5221	[illegible]	[illegible]	[illegible]	[illegible]	17.00	[illegible]	[illegible]	E
RB 10201	[illegible]	[illegible]	1.00	[illegible]	17.00	[illegible]	[illegible]	E
AM 618*	[illegible]	12.00	0.60	18.00	20.50	42.00	[illegible]	E
AM 720*	1.20	12.00	0.70	20.00	24.00	38.00	1.00	E
AM 622*	1.20	12.00	0.60	22.00	24.00	38.00	1.00	E
AM 725*	1.40	13.50	0.70	25.00	24.50	38.00	0.90	E
AM 626*	1.40	13.50	0.60	26.00	24.50	38.00	0.90	E
AM 728*	1.40	14.00	0.70	28.00	24.50	38.00	0.90	E
AM 1028*	1.50	15.00	1.00	28.00	29.00	40.00	0.90	E
AM 830*	[illegible]	15.00	0.80	30.00	29.00	40.00	0.90	E
AM 1230*	[illegible]	[illegible]	1.20	[illegible]	29.00	50.00	0.90	E
AM 1035*	4.00	10.00	1.00	35.00	29.00	50.00	0.90	E
AM 1525*	4.00	10.00	1.50	25.00	29.00	50.00	0.90	E
AM 1235*	2.00	22.50	1.20	35.00	32.00	50.00	0.90	E
AM 1040*	4.00	12.80	1.00	40.00	29.00	50.00	0.90	E
AM 1240*	4.00	14.00	1.20	40.00	29.00	50.00	0.90	E
AM 1242*	4.00	14.40	1.20	42.00	29.00	50.00	0.90	E
AM 1045*	4.00	14.40	1.00	45.00	29.00	50.00	0.90	E
AM 1246*	5.00	14.30	1.20	46.00	35.00	50.00	0.90	E
AM 1640*	6.00	13.00	1.60	40.00	35.00	50.00	0.90	E
AM 134[illegible]*	[illegible]	[illegible]	1.30	[illegible]	35.00	50.00	0.90	E
*[illegible]								

Section A3

TOWER CRANES
SELF-ERECTING

App 1

Model	Max load @ Min radius t @ m	Max load @ Max radius t @ m	Max height under hook m	Max hoist speed m/min	Max slew speed rpm	Power source
HITACHI* (Japan)						
C 8	1.00 ■	1.00 5.00	40.00	36.00	0.72	E
C 10	1.00 ■	1.00 10.00	50.00	45.60	0.61	E
C 20	2.00 ■	1.30 15.00	60.00	50.00	0.56	E
C 60-2	3.50 ■	1.50 30.00	89.00	44.20	0.37	E
* Manufactured and marketed by Hitachi Construction Machinery Co						
IMENASA GRUAS (Spain)						
14K	1.25 14.00	0.75 18.00	20.00	30.00	0.90	E
24K	1.50 18.00	0.85 24.00	20.27	40.00	0.90	E
LIEBHERR* (Germany)						
20K	2.00 11.70	0.85 24.00	20.00	40.00	0.90	E
22K	2.50 12.20	0.90 24.00	20.00	40.00	0.90	E
26K 2	2.50 13.80	1.00 28.00	22.50	40.00	0.90	E
28K 2 4	3.00 11.00	0.82 28.00	22.00	40.00	0.90	E
30K 2	2.50 14.40	1.05 28.00	22.00	40.00	0.90	E
30K 2 4	3.00 11.50	0.87 28.00	22.00	40.00	0.90	E
35K 2	2.00 21.90	1.00 33.00	26.00	50.00	1.00	E
35K 2 4	3.50 13.60	0.93 33.00	26.00	50.00	1.00	E
38K 2	2.00 22.70	1.00 33.00	26.00	50.00	1.00	E
38K 2 4	3.50 13.90	0.93 33.00	26.00	50.00	1.00	E
50K 2	2.30 24.00	1.00 40.00	32.70	50.00	0.80	E
50K 2 4	4.50 13.90	0.95 40.00	32.70	50.00	0.80	E
54K 2	2.30 25.30	1.07 40.00	32.70	50.00	0.80	E
54K 2 4	4.50 13.90	1.02 40.00	32.70	50.00	0.80	E
63K 2	3.05 25.30	1.15 43.00	32.70	53.00	0.80	E
63K 2 4	6.00 13.80	1.10 43.00	32.70	53.00	0.80	E
68K 2	3.05 26.20	1.23 43.00	32.70	53.00	0.80	E
68K 2 4	6.00 13.80	1.18 43.00	32.70	53.00	0.80	E
102K 2	4.20 29.70	1.20 60.00	33.50	60.00	0.80	E
102K 214	8.00 16.40	1.00 60.00	33.50	60.00	0.80	E
125K 2	4.00 29.70	1.27 60.00	33.50	60.00	0.80	E
125K 214	8.00 16.40	1.07 60.00	33.50	60.00	0.80	E
* Manufactured and [illegible]						
NOTE: some of the double [illegible] maximum radius are [illegible] different jib lengths. These cranes may [illegible]						
MICHEL (France)						
79 Cadette	0.40 4.00	0.32 7.00	13.50	■	■	■
P13	1.20 8.00	0.40 13.00	14.00	■	■	■
12 13 DT	0.70 4.00	0.50 15.00	14.00	■	■	■
14 15 DT	1.50 4.00	0.50 18.00	14.00	■	■	■
17 20 DTN	1.50 4.00	0.60 22.00	16.00	■	■	■
20 22 DT	2.00 10.00	0.80 22.00	26.00	■	■	■
MUNSTERS HMC (Holland)						
ST 25-28	3.00 8.00	1.00 25.00	18.00	45.00	0.90	E
STE 25-28	3.00 8.00	1.00 25.00	18.00	45.00	0.90	E
TK 25-28	3.00 8.00	1.00 25.00	18.00	45.00	0.90	DE
MT 25-28	3.00 8.00	1.00 25.00	18.00	45.00	0.90	DE
ST 30 36	4.00 [illegible]	1.20 30.00	23.00	45.00	0.90	E
STE 30-36	4.00 [illegible]	1.20 [illegible]	[illegible]	45.00	0.90	E
MT 30 36	4.00 [illegible]	1.20 [illegible]	[illegible]	45.00	0.90	DE
ST 35-36	4.00 [illegible]	[illegible]	[illegible]	45.00	0.90	E

Section A3

TOWER CRANES

SELF-ERECTING

Model	Max load t	Min radius m	Max load t	@ Max radius m	Max height under hook m	Max hoist speed m/min	Max slew speed rpm	Power source
STE 35-45	4.00	11.01	1.00	35.00	24.00	45.00	0.90	E
ST 40-58	[illegible]	12.50	1.25	[illegible]	[illegible]	45.00	0.80	E
STE 40-58	5.00	12.50	1.25	40.00	30.00	45.00	0.80	E
CR 4[illegible]	4.00	12.70	1.50	[illegible]	24.50	22.50	0.90	DE
CR 58[illegible]	5.00	14.80	2.20	30.00	22.50	22.50	0.80	DE
CR 740	6.00	13.40	3.00	24.50	23.00	25.00	0.75	DE
CRL 740	6.00	13.40	3.00	24.50	23.00	25.00	0.75	DE
CRL 850	10.00	10.00	3.50	24.50	23.00	16.50	0.75	DE
PEINER* (Germany)								
SMK 201*	1.50	[illegible]	0.75	23.00	[illegible]	40.00	0.90	E
SMK 203*	[illegible]	[illegible]	1.05	25.00	[illegible]	40.00	0.90	E
SMK 205*	[illegible]	11.80	0.90	33.00	[illegible]	45.00	[illegible]	E
SMK 106/2*	4.00	13.80	1.20	35.00	45.00	47.00	1.00	E
SMK 108/2*	[illegible]	14.42	1.30	40.00	[illegible]	52.[illegible]	0.90	E

*Manufactured [illegible] ... und [illegible] GmbH

Model	Max load t	Min radius m	Max load t	@ Max radius m	Max height under hook m	Max hoist speed m/min	Max slew speed rpm	Power source
PEKAZETT (Germany)								
TK 2010/2	1.50	14.20	1.00	20.00	18.00	45.00	0.90	E
TK 2510/2	2.50	12.20	1.00	[illegible]	18.00	45.00	0.90	E
TK 2810	[illegible]	14.30	1.00	28.00	[illegible]	45.[illegible]	1.10	E
CTK 3012	4.00	[illegible]	1.00	[illegible]	[illegible]	[illegible]	1.00	E
CK 4112	[illegible]	12.40	1.20	41.00	[illegible]	60.00	1.00	E
POTAIN (France)								
313B/A1B	[illegible]	[illegible]	[illegible]65	[illegible]	[illegible]	[illegible]	[illegible]	E
321C	[illegible]	14.60	1.00	25.00	[illegible]	50.00	1.00	E
326D	3.00	13.00	1.00	30.00	[illegible]	50.00	1.00	E
331B	4.00	13.40	1.00	35.00	26.00	50.00	0.80	E
331B Self-propelled	4.00	12.90	0.85	35.00	26.50	50.00	0.80	DE
336A	[illegible]	15.70	1.00	40.00	[illegible]	50.00	0.80	E
336A Crawler	[illegible]	[illegible]	2.00	[illegible]	[illegible]	[illegible]	[illegible]	DE
356A	[illegible]	[illegible]	1.20	[illegible]	[illegible]	[illegible]	[illegible]	E
[illegible]	[illegible]	[illegible]	1.50	45.00	32.80	60.00	0.80	E
[illegible] Crawler	[illegible]	[illegible]	3.50	[illegible]	[illegible]	[illegible]	[illegible]	DE
386A	[illegible]	17.90	1.30	50.00	36.20	60.00	0.80	E
386A Crawler	[illegible]	17.90	4.10	31.00	[illegible]	[illegible]	[illegible]	DE
400A	[illegible]	17.80	2.00	[illegible]	[illegible]	[illegible]	0.70	E
400A Crawler	10.00	17.80	4.72	33.75	24.30	48.00	0.70	DE
SAN MARCO (Italy)								
Magnum 10 [illegible]	[illegible]	[illegible]47	0.40	11.44	10.00	32.[illegible]	[illegible]	E
22-205	[illegible]	[illegible]	1.00	22.00	20.50	32.[illegible]	[illegible]	E
24-205	[illegible]	[illegible]	0.80	[illegible]	20.50	32.[illegible]	[illegible]	E
26-205	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	32.[illegible]	[illegible]	E
28-205	[illegible]	[illegible]	0.70	[illegible]	[illegible]	32[illegible]	[illegible]	E
14X15RB	[illegible]	[illegible]	0.50	[illegible]	[illegible]	32[illegible]	[illegible]	E
14X15RB [illegible]	1.20	[illegible]	0.50	15.00	[illegible]	32[illegible]	[illegible]	E
16X20RB	[illegible]	11.20	[illegible]	[illegible]	[illegible]	32[illegible]	[illegible]	E
16X22RA	[illegible]	13.50	0.60	22.[illegible]	[illegible]	32.00	1.00	E
M22X26	2.00	14.35	1.00	26.20	22.00	32.00	0.90	E
M22X2[illegible]	[illegible]	12.60	0.80	[illegible]	[illegible]	32.[illegible]	[illegible]	E
M22X3[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	32[illegible]	[illegible]	E
SM7[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	32[illegible]	[illegible]	E
SM8[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E
SM[illegible]16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E
SM[illegible]16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Section A3

TOWER CRANES

SELF-ERECTING

Model	Max load t	@ Min radius m	Max load t	@ Max radius m	Max height under hook m	Max hoist speed m min	Max slew speed rpm	Power source
TORNBORGS (Sweden)								
T-36	3.00	13.00	0.80	32.00	37.00	33.00	0.90	E
T-50B	4.50	12.50	0.90	40.00	44.00	40.00	0.90	E
T-80	4.50	18.20	0.90	50.00	48.50	40.00	0.90	E
VITKOVICE (Czechoslovakia)								
MB 1030.1	8.00	15.60	3.20	32.00	28.70	60.00	0.90	E
MB 0330	4.00	11.10	1.00	32.00	25.00	48.00	1.00	E

App. M

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LEGAL ANALYSIS

of the assets of "ZREMB-FAMABUD" Factory of Construction machinery in Szczecin.

The following legal analysis has been made on the basis of materials and information obtained from the management of the Factory. It determines the state of assets as of September 26, 1991.

I. Introduction

The formation of the enterprise and its organizational-legal transformations.

By virtue of a disposition of the Minister of Heavy Industry /dated March 2 1956/ a state enterprise has been formed under the name "Szczecin Factory of Construction Machinery in Szczecin" /Szczecińska Fabryka Maszyn Budowlanych w Szczecinie/ with its headquarters in Szczecin on the Odra River, at Łady and Dubois street.

The enterprise has taken over management and usufruct of real estate of the former "Arsenał" factory and on April 1, 1956 started its activities in the field of manufacturing of construction machinery.
On the basis of a disposition of the Minister of Heavy Industry dated March 2, 1956 on the formation of a state enterprise under the name "Szczecin Factory of Construction Machinery" in Szczecin, the enterprise has undertaken statutory activities /production of construction machines/ starting with April 1, 1956. Its supervisory body was the Association of the Construction Machinery Industry.

On the basis of a decision of the Association of the Construction Machinery Industry in Warsaw, upon consent of the Patent Office of the Polish People's Republic, in March

1966 the Factory was granted the right to use the short name of the enterprise "FAMABUD".

By virtue of a Resolution of the Council of Ministers no. 66/72 on the formation of the Construction Mechanization Association "ZREMB" and by virtue of a decision of the Minister of Construction Materials Industry no 155/Org dated July 31, 1972 the enterprise was subordinated to the Ministry of Construction of Construction Materials Industry. As a result, the name of the enterprise has been changed into "Szczecin Factory of Construction Materials ZREMB-FAMABUD", and its immediate supervisory body was the ZREMB Construction Mechanization Association in Warsaw.

On the basis of a decision no 26/or of the Minister of Construction and Construction Materials Industry issued on April 26, 1974, the following two enterprises were merged on April 1, 1974:

- Szczecin Factory of Construction Machines "ZREMB-FAMABUD", and
- Spare Parts Manufacturing Plant "ZREMB" in Szczecin, formed on the basis of a disposition of the Office of the Voivodship People's Council in Szczecin dated January 31, 1958 on the formation of a state enterprise under the name:
Szczecin Reconstruction Base, with all changes introduced later.

The merged enterprises acted under the name: Szczecin Factory of Construction Machines "ZREMB-FAMABUD".

By issuing a disposition no 136/or on December 29, 1974 the Minister of Construction and Construction Materials Industry granted the rank of a supervisory enterprise to the Szczecin Factory of Construction Materials "ZREMB-FAMABUD". On the basis of that, on January 1, 1975 SFMB "ZREMB-FAMABUD" has started exercising direct supervision over grouped enterprises:

- Gorzów Factory of Construction Mechanization "ZREMB"

- Słupsk Factory of Construction Machines "ZREMB-JEZIERZYCE"

- Gniezno Factory of Construction Mechanization "ZREMB"

performing the functions stipulated by binding regulations regarding enterprises, in a scope resulting from the Statute. Supervision over the activities of "ZREMB-FAMABUD" has been exercised by the Association of Construction Mechanization "ZREMB" in Warsaw.

On December 29, by virtue of Disposition no 218/or /annex I.3/ of the Minister of Construction and Construction Materials Industry, a state enterprise was formed under the name: Industrial Complex of Construction Machines "ZREMB" in Poznań from seven state enterprises united in the Association of Construction Mechanization "ZREMB", including "ZREMB-FAMABUD". On January 1, 1977 the disposition entered into force.

On the basis of a disposition no 259/or /annex I.4/ of the Minister of Construction and Construction Materials Industry dated May 5, 1982, the Industrial Complex of Construction Machines "ZREMB" was divided. As a result a state enterprise - the Szczecin Factory of Construction Machines "ZREMB-FAMABUD", among others, was formed. The enterprises formed as a result of the division bear joint and several responsibility for obligations from before January 1, 1982 (the day the disposition entered into force) /annex/.

The disposition no 267/or of the Minister of Construction and Construction Materials Industry dated also May 5, 1982 formed a state enterprise under the name: Szczecin Factory of Construction Machines "ZREMB-FAMABUD" in Szczecin with headquarters in Szczecin. The object of the enterprise's activities is;

- production of tower construction cranes and elements of machines and facilities, as well as spare parts to the

manufactured goods,

- supplying of service, and performing of renovation services.

This disposition includes the obligation of detailed specification of assets factors which can be allocated to the enterprise.

On the basis of a resolution no 118 of the Council of Ministers issued on May 23, 1982 SFBM "ZREMB-FAMABUD" became an obligatory member of the Association of Enterprises of Construction Machines and Construction Facilities "ZREMB" in Warsaw.

On the basis of a disposition of the Council of Ministers issued on February 5, 1983 SFMB "ZREMB-FAMABUD" has been recognized as one of the enterprises of basic significance to the national economy.

By virtue of an Act passed on 23.10.1987 on the formation of an office of the Minister of Industry /Journal of Law no 33/Dziennik Ustaw no 33/ and Resolution no 164/87 of the Council of Ministers dated 23.11.1987 on the granting of a statute to the Minister of Industry, annex to the statute item 78, the founding body for the Factory becomes the Ministry of Industry.

II. ANALYSIS OF THE LEGAL STATE OF REAL ESTATE AND PREMISES

According to the documents presented to us, the factory is in possession of the following real estate:

1. by virtue of perpetual usufruct:

a) in Szczecin
(i) at 12 Cukrowa street
(ii) at 2 Lady street

(iii) at 20 Dubois street

b) in Łobza
a) at 1a Wojcelska street

c) in Dźiwnówek
(i) at Kamińska street (holiday center)

2. by virtue of ownership:
a) in Szczecin
(i) at Rosenbergów street

3. by virtue of lease:

a) in Sieraków, Suchań commune (recreation center)
b) in Szczecin
(i) at 2 Łady street
(ii) at 12 Cukrowa street.

Ad 1.(i) Real estate situated at 12 Cukrowa street. On the basis of a Decision of the Office of the City People's Council - Department of Municipal, Housing, Spacial Economy, and Environment Protection in Szczecin GT/I/II/C/73 (annex II.1 + protocol of transfer and receipt) issued on 12.10.1973 the Szczecin Factory of Construction Machines "ZREMB-FAMABUD" has been granted usufruct of real estate (without any buildings on it) in Szczecin, at Cukrowa street, comprised of lot in 5/3, 5/1, 5/2, 7/1 with total area of 235,816 sq.m.

The decision also indicates that further lots no 2/1 and 6/1 with total area of 8,433 sq.m. situated at Krakowska and Huzarów streets will also be passed over upon the destruction of those streets. However, there is no evidence that such a decision has been issued.

In accordance with the above decision the Board of Ground Economy in Szczecin was to pass the above mentioned lots in the form of protocol of transfer and receipt on November 1,

1973. However, there is a lack of such a document.

On the basis of a decision of the City Board - Department of Ground Economy and Environment Protection - GT-044/11/73/78 issued on July 14, 1978 (annex no II.2 + protocol of transfer and receipt) it has been declared that the right of usufruct of lots no 8/1 and 8/3 with area of 6,564 sq.m. situated at Cukrowa 8, 10, 12 street granted to the Industrial Complex of Construction Machines ZREMB in Poznań has expired. However, there is no decision which would grant the right of usufruct of the above parcels.

Due to a change in the numbering of the lots situated at 8, 10, and 12 Cukrowa street, the numbers of the above lots have been changed /annex II.3/.

The land consisting of lots 8/1 and 8/3 was to be taken over by the Board of Ground Economy in Szczecin on 31.07.78 in the form of protocol of transfer and receipt. However, there is no evidence of that.

On the basis of a Decision issued on June 27, 1984 by the City Authorities - Department of Geodesy and Ground Economy GT-044/11/73/84 (annex no II.4) it has been declared that the right of usufruct of lot 8/5 with area of 35,427 sq.m. situated at 8 Cukrowa street granted to the Szczecin Factory of Construction Machines "ZREMB-FAMABUD" has expired.

The grounds were to be taken over by the City Authorities - Department of Geodesy and Ground Economy in the form of protocol of transfer and receipt on 16.07.1984, to which there is no evidence of.

The grounds remaining in usufruct with area of 176,772 sq.m. are comprised of lot no. 8/6.

There is a lack of any evidence of what had happened to the difference between the area remaining in usufruct 176,772

sq.m. and an area which, according to the calculations, should have remained in usufruct of the Factory 193,885 sq.m. (229,312 sq.m. - 35,427 sq.m. = 193,885 sq.m.).

In accordance with Art. 2 item 1 and 2 of the Act passed on September 29, 1990 on the amendment of the act on ground economy and expropriation of real estate (Dz. U. no 79/90 item ...) the grounds managed by a state legal person have become by virtue of law the object of perpetual usufruct. The act speaks of management and not usufruct, as it appears from the above decisions and the Act dated July 14, 1961 on the grounds economy in cities and residential areas. Article 80 item of the act on grounds economy passed on April 29, 1985 changes the form of "usufruct" to "management" effective as of August 1, 1985.

For the purpose of enfranchising an enterprise, an application should be submitted to the Voivodship Mayor (Wojewoda) - regarding State Treasury real estate - or board of the commune - regarding real estate belonging to the State Treasury for a declaratory decision confirming the acquiring of rights, which can form the basis for making an entry in the land and mortgage register of the right of perpetual usufruct.

At present the map of the area and the description of the real estate described above is being updated. The updating is to be completed in the near future.

As far as the buildings are concerned - at 12 Cukrowa street there is a building, the seat of the Factory which, in accordance with the above mentioned Act on the amendment of the act on ground economy and expropriation of real estate, has become, by virtue of the Act, the property of the enterprise (has been built with the enterprise's own means).

The mode of procedure, as for the completion of the process of expropriation, is analogical as in the case of

expropriation of grounds.

Ad. 1a (ii) Real estate situated at 2 Łady street

A lack of decision on the granting of the right of usufruct of grounds situated at 2 Łady street in Szczecin / board of management of the enterprise.

However, there is a civil law agreement and the consent of the City Authorities - Department of Geodesy and Ground Economy GiGG/GT/8224/85/83/84/3/90 dated October 1990 (annex no II.5), which permits the passing over of grounds situated in Szczecin at 2 Łady street comprising the geodetic lot with area of 2 hectares 1607 sq.m. to the Szczecin Factory of Construction Machines "ZREMB-FAMABUD" which was managed by the A. Warski Szczecin Shipyard.

By virtue of an agreement dated December 3, 1990 the A. Warski Szczecin Shipyard in Szczecin with headquarters at 1 Hutnicza street passed over the management of grounds with area of 20,662 sq.m. situated in Szczecin at Łada street for an unlimited period of time by a protocol of transfer and receipt (annex II.6) on December 21, 1990.

On December 21, 1990 the Shipyard passed the above mentioned grounds to the Factory by a protocol of transfer and receipt /annex II.7/.

Up till January 31, 1991 a new division of the lots was to take place.

By virtue of a Decision issued on March 27, 1991 GNG II-Mi/7415/63/91 (annex II.8) the Regional Office /Urząd Miejski/ in Szczecin approved the design for the division of the lot - no 1/2 with area of 2 hectares 167 sq.m. situated at 2 Łada street within 15/1 on the Odra River, passed over to the Adolf Warski Szczecin Shipyard in Szczecin on the basis of a decision issued on June 25, 1984 by the Department

of Geodesy and Ground Economy of the City Authorities in Szczecin GT-044/85/83/84. The lot was to be divided into lots:
- no 1/4 with area of 2 hectares 662 sq.m. assigned to the Szczecin Factory of Construction Machines "ZREMB-FAMABUD" in Szczecin
- no 1/3 with area of 945 sq.m. assigned to the A. Warski Szczecin Shipyard in Szczecin.

According to the opinion given on February 27, 1991 by the Department of City Planning and Architecture of the City Authorities in Szczecin UAN-II.D/8330/L-2/91 the grounds situated at 2 Łady street were assigned to the shipping industry and could be used until the Szczecin Shipyard was reconstructed.

The description of the real estate/lot no 1/4 together with the map is enclosed in annex no II.9.

From the above documents and the act on ground economy and expropriation of real estate dated April 29, 1985 (Dz. U. 1991 no 30 item 127) it appears that the lot no 1/4 with area of 2 hectares 662 sq.m. by virtue of law has been passed for perpetual usufruct of the Factory of Construction Machines "ZREMB-FAMABUD".

In accordance with the quoted act the management has been established on the basis of civil law agreements concluded between state organizational entities upon consent of the appropriate bodies (such was the agreement between the Shipyard and the Factory), as well as on the basis of administrative decisions (decisions approving the division of the lots should be regarded as such).

As a result, the Factory can apply for the approval of the Voivodship Mayor or the Commune Board in order to settle the legal status of the above lot (the same procedure as in 12 Cukrowa street).

A lack of documents describing the legal status of the buildings, garages, and facilities, as well as data regarding the means with which they were built.

Ad. 1a (iii) Real estate at 20 Dubois street

On the basis of a decision of the City Department dated June 25, 1984 GT.044/85/83/84 /annex II.10/ it has been declared that the right of usufruct of the lot no 1 with area of 42,775 sq.m. situated at 20 Dubois street together with the buildings granted to the Szczecin Factory of Construction Machines ZREMB-FAMABUD the moment it has been formed, has expired.
A lack of a evidence (protocol of transfer and receipt) confirming the transfer the real estate between the entities. At present it is informally in the possession of the factory.

1b. Real estate situated at 1a Wojcelska street in Łobza

By virtue of a decision ZGT-4-44/23/73 issued on 25.09.1973 /annex II.11 + map/ by the Office of the District People's Council in Łobza - the Department of Municipal, Spatial Economy, Environment Protection and Communication - the lot 189/9/class IIIb - 5075 sq.m. and class IVa 1045 sq.m. has been passed under perpetual control and usufruct of the ZREMB Manufacturing Plant of Spare Parts (which is a part of the FAMABUD Factory), as it appears from the decision with total area of 6470 sq.m. (but 5075 sq.m. + 1045 sq.m. = 6.020 sq.m.). Protocol of transfer and receipt dated October 19, 1973 (annex no II.12) passes the right of usufruct of grounds with area of 6470 sq.m. situated at Wojcelska street marked on the map as lot no. 189/9 for an unlimited period of time to the "ZREMB" manufacturing Plant of Spare Parts in Szczecin.

The above inconsistency has been cleared in a letter sent on 27.08.1991 by the Regional Office in Stargard Szczeciński GNG

DD 7410.5/100/91, in which the Office informed that lot no 189/9 mentioned in the above decision does not correspond to the number in the record files; the correct number of the lot is 129/9 with area of 6470 sq.m., which consists of R-IIIb-0 with area of 1520 sq.m., RIVa with area of 1045 sq.m., B-RIIIb-0 with area of 3555 sq.m., and OW-O with area of 350 sq.m.

The final change of number of the lot was made in 1984; as a result the above lot no 732 (former no 129/9) has the area of 6439 sq.m. (i.e. neither 6470 sq.m. nor 6020 sq.m.).

After making an estimate pricing of the buildings and facilities located on this area in Łobza, it turned out that these buildings and facilities /i.e. the shop building, living quarters, concrete chimney and the fence/ have not been constructed solely from the Factory's own means, and as a result the amount of 75.201.625 zł. must be accounted for with the State Treasury. After having accounted for it, the Factory becomes the owner of the above mentioned buildings and facilities and can apply to the Voivodship Mayor to fully settle the ownership status. Such a decision can be expected in the nearest future.

Ad. 1c(i) Holiday center in Dźiwnówek at Kamieńska street

By virtue of a decision issued on December 31, 1974 by the Chief of the District /Naczelnik Powiatu/, /annex II.13 + map/ in Kamień Pomorski forest grounds with area of 4436 sq.m. situated in Dźiwnówek on lot 378/6 have been passed to "ZREMB-FAMABUD" for the purpose of constructing a holiday center. The decision does not clearly state for how long the grounds have been passed over, however it can be assumed that for an unlimited period of time. The use of those grounds, other than that mentioned above, can cause the taking away of those grounds. A lack of data whether the

buildings and facilities constructed on those grounds i.e. :
- multifunctional building,
- 26 accommodation quarters,
- a residential building and associated facilities,
- fence around the center and sewage containers,
have been constructed with the factory's own means, and thus what is their legal status.

By virtue of a notarial deed dated October 9, 1985 Rep. A no 25401985 concluded at the State Public Notary Office in Szczecin /annex II.14/, the Factory has taken over (purchased) for perpetual usufruct lots no 371/7 with area of 991 sq.m. and taken into possession the residential building with area of 137 sq.m., as well as another building with area of 43 sq.m. Both parties asked for an entry to be made in the land and mortgage register no. 848, which would acknowledge the above rights acquired by the Szczecin Factory of Construction Machines "ZREMB-FAMABUD". A lack of an entry in the land and mortgage register.

Allotments at 3/2 Resenbergów street in Szczecin

By virtue of a notarial deed dated March 25, 1981 Rep. A. no 429/1981 concluded at the State Notary Office in Szczecin, the "FAMABUD" Factory has acquired possession of an empty lot no 3/2 with area of 9999 sq.m. from a physical person. Simultaneously, the agreement provided for the drawing up of a new land and mortgage register and making appropriate entry of ownership rights of the Factory of Construction machines in Szczecin.

The above legal activity should be considered as contradictory to Article 128 of the Civil Code and the rule of unanimity of national assets, according to which all national (state) property is granted indivisibly to the State. After the amendment of Article 128 of the Civil Code on February 1, 1989, state legal persons acquired real estate, by way of civil law transactions, on behalf of the

State Treasury, which they managed themselves.

Due to the revealing of the above ownership rights in the land and mortgage register (a lack of entry) on the one hand, and contradiction between the agreement and Article 128 of the Civil Code on the other, the Factory's ownership rights of the above lot should be considered at least doubtful.

Despite the legal presumptions drawn from making the entry of the Factory's ownership of the real estate (presumption that land and mortgage register is true, principle of reliability of land and mortgages registers), we believe that the legal status should be settled in an analogical way as in the case of granting control over the real estate i.e. treat the acquiring of the above real estate by the Factory as a faulty legal transaction, transferring, by virtue of law, the right of ownership to the State Treasury, and limit the Factory's right to management. As a result of the act on the amendment of the act on ground economy passed in December 1990, this right of management, by virtue of law, has been transformed into the right of perpetual usufruct.

II. REAL ESTATE OWNED AND TRANSFERRED BY VIRTUE OF LEASE.

Ad. 3(2) Premises situated in Sieraków.

On 20.11.1987 the Factory concluded a lease agreement with the Regional Board on State Forests in Szczecin on the leasing of forest grounds with area of 23,000 sq.m. comprising department 681 c, d, f Forest Inspectorate 1 obr Dobrzany. /annex III.1/

The agreement has been concluded for a period of ten years and expires on 31.12.1998. The Factory /the lessee/ is entitled to keep the existing holiday center without the right of reconstruction and modernization, passing of the premises to third parties or using it for other purposes.

The center consists of the following buildings and facilities:

- holiday premises (7 buildings),
- warehouse building,
- a barrack,
- a room for the water supply system,
- a multifunctional building,
- a sanitary building,
- associated facilities /fence around the premises/,
- equipment of the premises,
- sewer,
- transformer station and distribution station,
- cable line.

Ad. 3b (i) Premises situated at 2 Łady street.

On the basis of an "agreement on cooperation" concluded between the Factory and the Office for Construction and Expertise of Maritime Facilities and Premises, Machinery Mechanics - "Maritime Consultans" with headquarters in Szczecin, at 16 Łysowskiego street, the Factory has passed over the possession of grounds with area of 2 hectares 1607 sq.m. lot no. 1/2 at 2 Łady street together with the buildings and facilities located on them.

The holder of the grounds is the A. Warski Szczecin Shipyard (look page ....), and the Factory, not having any legal rights to those grounds, had them in actual possession. On that basis the Factory receives monthly 340 million zloty. The agreement has been concluded for a period of 10 years from the moment of signing the protocol of transfer and receipt /lack of such document/ - with the possibility of termination upon a 12 month's notice.

The parties have obliged themselves to undertake reconstruction of the Plant at 2 Łada street in order to obtain more effective use.

In accordance with annex 2 to the lease agreement concluded on 29.03.1991 the monthly payment during the period between 1.04.1991 and 30.06.1991 amounts to 402 million, and according to annex no 3 the payment during the period between 1.07.1991 and 31.12.1991 remains the same i.e. 402 million zł./annex III.3/

On 13.02.1991 a lease agreement was concluded between the Factory (the Lessor) and "Polar Box Production" Limited Liability Company (the Lessee), according to which "ZREMB-FAMABUD" acting as the owner /lack of evidence/ has leased out /annex III.4/:

1/ production room with area of 4,128 sq.m.,
2/ administrative building with area of 90 sq.m.,
3/ administrative rooms situated in the hallway with area of 40 sq.m.,
4/ warehouse space, adjacent to the production room with area of 300 sq.m.,
5/ other rooms situated in the main building with area of 144 sq.m., located in Szczecin at 2 Cukrowa street.

The above agreement raises doubts. § 5 point 1 of the agreement states that "the Lessee shall pay rent in the amount of 27,012 DM per month" which is contradictory to Article 358 § 1 of the Civil Code, which states that,with certain exceptions, any liability can only be expressed in the Polish currency.

The agreement concluded for a period of one year (till 13.02.1992) can be subject to extension for further one year periods or for an unlimited period of time if the lessee submits an appropriate statement three months prior to the expiration of the contract. § 7 of the agreement states that additional agreements will be signed between the parties enabling the lessee to take advantage of additional services upon a separate payment. However, there is no evidence of such agreements.

It appears from the information presented by the Factory that the agreement has been terminated with the termination date effective on March 27, 1992.

Lease of premises at 12 Cukrowa street

On July 1, 1991 the Factory (the lessor) has leased out (annex III.5) the following premises located on the area of the plant at 12 Cukrowa street to "IKAR" Manufacture and Sale of Clothing, a civil partnership company in Szczecin (the lessee).
(i) a cloak-room and bath, numbered 1 and 3, situated in part A of the administrative building with area of 238.3 sq.m.
(ii) warehouse rooms in the basement of part A of the above building with area of 35 sq.m.

The agreement has been concluded for a period of one year i.e. till June 30, 1992, however, it could be extended for the following one year period, or for a limited period of time, if the lessee presents an appropriate statement three months prior to the expiration of the agreement. The parties can terminate the agreement upon a three month's notice in the case of concluding the agreement for an unlimited period of time. The parties have determined that the lessee will pay rent in the amount of 9,882,000 zł.

AGREEMENTS ON LEASE OF MACHINES AND EQUIPMENT

Between 1987 and 1991 the Factory concluded civil law agreements with third parties on the passing of personal assets of the Factory to dependent possession, in most cases lease.

The first of such agreements was an agreement concluded on November 4, 1987 (annex IV.1) with the Industrial Plant of

General Construction No 1 with headquarters in Szczecin, at 34/35 Bohaterów Warszawy street /the Plant/ and the "Śródmieście" Housing Cooperative with headquarters in Szczecin at 6 Ofiar Oświęcimia street, by virtue of which the Coop passed over 43 flats altogether located in houses "A","B", "C" at Parkowa street. The Factory has passed to the Plant the right of usufruct of a construction crane ŻB/100 for a period of 5 years till November 30, 1992. The Plant has promised to incur the cost of the amortization in the amount and in accordance with the binding regulations, as well as payments allocated to the Fund of foreign debt service according to the state as of 1987 - 2% of the net value.

On January 1989 the Factory signed a lease agreement No 10/88 (annex IV.2) with the State Machinery Center in Choszczno (the lessee) at 28 Jagiełły street, by virtue of which the Factory has leased a multiradial drilling machine 2M55 manufacturer's no 6288 inv. no 4/401-2/2 in exchange for a monthly rent fee in the amount of 19,729 zł. for a period of one year (from 4.01.1989 till 31.12.1989).

The agreement can be extended at the lessee's motion one month prior to the expiration of the lease agreement, or the agreement can be terminated by either party upon a written one month notice at the end of any calendar month.

A lease agreement No 1/89 (annex IV.3) has been concluded between the same parties on 13.03.1989, where the State Machinery Center has leased a milling-drilling machine HCW 110 manuf. no 2161, inv. no 401-8/5 for a period between 14.03.1989 and 31.12.1989.

The rent fee has bee fixed in the amount 35,119 zł. per month. Terms of extension and termination of the contract - the same as in the agreement above.

The same parties concluded a lease agreement no 3/89 (annex

IV.4) on April 8, 1989, by virtue of which the lessee (the State Machinery Center) in Choszczów at 28 Jagiełły street) leased a hydraulic press PHWn-63 manuf. no 18, inv. no 4/421-9/98 for a period between April 10, 1989 and December 31, 1989. The rent fee was fixed in the amount of a monthly amortization fee i.e. 4,835 zł. Terms of termination and extension of the agreement - same as above.

On June 1, 1990 the Factory concluded a lease agreement no 1/90 /annex IV.5/ with the Electromechanics Plant FAR, Andrzej Radzisławski (lessee) 70-154 Szczecin, 3a Legnicka street, by virtue of which the lessee has leased from the Factory a radial davit ŻW-500 manuf. no. 2591, inv. no. 6/641-/235, construction year 1989 - for a period between June 1, 1990 and December 31, 1990 with the possibility of extension on the lessee's motion and upon consent of the lessor (the Factory).

The rent fee has been fixed in the amount of 40,000 zł. The parties can terminate the agreement upon a notice presented at the end of calendar month. According to the annex no 1/91 to the above agreement the lease period has been extended till December 31, 1991 and the period of the termination notice extended from one month to two months. The amount of the rent fee has also been changed into 233,300 zł. per month.

On August 28, 1990 the Factory concluded a lease agreement with the Craftsmen Cooperative BUDOMETAL 70-100 Szczecin 28/83 Dąbrowskiego street - General Ironwork, T. Gran, eng. (lessee) of the following content /annex IV.6/:

The Lessor (the Factory) has leased to the lessee a universal piston lathe TUD 50x1500 manuf. no 36935 constr. year 1975 inv. no 400-0/476 and a horizontal knee type milling machine FWD323 manuf. no 0083 constr. year 1977 inv. no 402-2/89. The lease period has been fixed from November 1, 1990 till December 31, 1991 with the possibility of extension and

termination, same as in the above agreements: no 1/89, no 3/89, no 1/80.

After the expiration of the lease period, the lessee can apply for the right of pre-emption of the leased fixed assets. The parties have fixed the monthly rent in the amount of:
- for the lathe TUD 50 - 213,136 zł
-for the knee type milling machine FWD32B - 568,496 zł paid once every quarter of the year.

By virtue of a lease agreement no 4/90 (annex IV.7) dated October 4, 1990 the Factory has leased to the State Machinery Center, 73-200 Choszczowo 28 Jagiełły street (lessee) a universal angle lathe 1A64 manufactured in the USSR, manuf. no 5709, constr. year 1976, inv. no 400-0/502 for a period from October 1, 1990 till December 31, 1991. The lease fee has been fixed at 1,704,169 zł. After the expiration of the lease period the lessee can apply for the right of pre-emption. The lease can be extended and terminated on the same basis as the above agreements.

On November 13, 1990 the Factory agreement no 5/90 (annex IV.8) leased JVO MAX Limited liability company (lessee) Szczecin, 38 Dąbrowskiego street a semi-automiatic welder DEP40J manuf. no 2573, a feeder ZP-2 manuf. no 13912, inv. no 4/484-05/343, semi-automatic welder EP-1-315 manuf. no 6441, feeder BS-1-315-P7, inv. no 4/484-05/105, and a semi-automatic welder DEP 630, manuf. no 1237, feeder ZP-2, manuf. no 13902, inv. no4/484-05/441 for a period from November 14, 1990 till December 31, 1990. The terms of extension and termination of the agreement - same as in the above agreements. The lessee has the right of pre-emption of the leased fixed assets.

The parties have fixed a monthly rent in the following amounts:

- for the semi-automatic welder DEP 400 - 55,494 zł.
- for the semi-automatic welder EP 1-315 - 131,821 zł.
- for a semi-automatic welder DEP630 - 44,556 zł.
paid every quarter of a year.

According the presented documents the last agreement concluded by FAMABUD is one no 1/91 (annex IV.9) with PROMET, a limited liability company (lessee) 71-570 Szczecin, 12/9 Cedyńska street. By virtue of this agreement the Factory has leased to the lessee a semi-automatic welder EP-1-400, manuf. no 3591, inv. no 4/484-05/174 for a period from April 9, 1991 till December 31, 1991. The lease fee has been fixed in the amount of a monthly amortization payment, dividends, general insurance and profit. The lessee has the right of pre-emption on the same basis as in the above agreements. The termination and extension of the agreement is done in the same way.

V. LIMITED PROPERTY LAW ESTABLISHED ON BEHALF OR BURDENING OF THE ENTERPRISE'S ASSETS.

No evidence has been presented that there exists a limited property law on behalf or burdening the assets of the enterprise.

VI. PARTICIPATION IN COMPANIES

From the information submitted to us by the legal department of the enterprise, the Factory has shares in the following companies:

- Industrial company "ZREMB" Sp. z o.o. in Warsaw; the object of the company's activities is production of construction machines and facilities and supplying, on partners' behalf, of cooperation elements and techinical equipment,

- "TASKO" company sp. z o.o. in Poznań; the object of the

company's activities is performing organizational, service, trade, information, and assisting functions

- "DOMEX" company sp. z o.o. in Szczecin; the object of the company's .ctivities is housing construction and desiging activities in this field

- sewage system company in Dźiwnów; the boject of the activities is protection of natural environment in the seaside region.

The shares of the enterprise in the Companies: "ZREMB", "TASKO", "DOMEX" and sewage system "DŹIWNÓW" do not comprise real estate of the enterprise.

In the "ZREMB" Company in Warsaw with initial capital of 501,000,000 zł "FAMABUD" in Szczecin has capital shares in the amount of 10,000,000 zł. /10 shares/; the notarial deed PBN in Warsaw dated September 27, 1988 Rep. No A-I-9683/88.

In the "TASKO" Company in Poznań with initial capital of 57,000,000 zł., the share of "FAMABUD" Szczecin amounts to 5,000,000 zł. /5 shares/; notarial deed PBN in Poznań dated June 7, 1989 Rep. A,I,II-3434/89.

In the "DOMEX" Company in Szczecin with initial capital of 2,000,000 zł., the shares of "FAMABUD" in Szczecin amount to 132,000 zł.; notarial deed PBN in Szczecin dated October 3, 1988 Rep. A no 3299/1988.

In the sewage system company "DŹIWNÓW", within the binding law on use and conservation of inland waters, the shares of "FAMABUD" amount to 120,000 zł.

IV. Liabilities and obligations of the Factory.

From the information obtained from the legal department of

the enterprise it appears that

(i) the Factory's liabilities amount to 784,000,000 zł.
including: to legal persons - 614,000,000
to natural persons - 170,000,000

(ii) the Factory's obligations are .....
including: to legal persons - .....
to natural persons - .....

The above sums do not include interest, stipulated fines and procedure costs.

A detailed list of court trials conducted by the Factory is included in annex VII.1.

It should also be stressed that due to the difficult financial situation of the Factory and similar situation of its creditors, the number of disputes taken to court is decreasing. One of the reasons is the fact that, as it appears from the act and the disposition on the costs and court fees, in order to file a statement of claim on economic issues, the registration must be made, which is charged by the court, in the amount of 12 % of the value of the object of dispute.

VIII. CLAIMS OF THIRD PERSONS TO THE ASSETS OF THE ENTERPRISE

Lack of revealed claims of third persons to the assets of the enterprise.

IX. CREDITS AND LOANS

As it appears from the presented documentation, during the years 1987-1991 the Factory has taken the following credits and loans:

1. On August 20, 1987 a loan agreement was concluded with the Poznań Enterprise of Steel Constructions and Industrial

Equipment "MOSTOSTAL" in Poznań /annex IX.1/ (lender), on the basis of which the Factory, for manufacturing 2 fitting cranes MQ=1.6 Mg for the fitting of a container MAN V=100,000 cu.m. (the manufacture is ruled by a separate agreement dated January 12, 1987), has received a loan in the amount of 30 million zloty, paid up after three years in different three month installments.

2. On the same day the Factory concluded a loan agreement with the Fatory of Lighting Equipment "POLAM-GOSTYNIN", taking an interest-free loan in the amount of 30 million zloty for the manufacturing (within the time limits set by the agreement - the last one passed on August 31, 1988) of 3 fitting cranes ŻB-75/100/annex IX.2/

The paying up of the loan is to take place between 1991 and 1993 in installments, 10 million before the end of each year.

3. On August 7, 1991 the Factory concluded an credit agreement with the Pomeranian Credit Bank, Division III in Szczecin /annex IX.3/, on the basis of which the Bank has granted to the Factory a credit in the amount of 7,000,000,000 (seven billion) zloty to be used for financing of liabilities. The securing of the credit are the agreements on cession of liabilities concluded on August 7, 1991 and April 10, 1991 (see point 2 of the agreement).
The Factory has promised to pay the credit up by September 26, 1991 in the amount of 6,000,000,000 (six billion) zloty. The interest on the credit amounts to 74 % annually, and the Bank has taken a commission in the amount of 1 % of the credid sum.

X. INVENTIONS AND UTILITY PATTERNS

During the years 1988-1991 the following solutions have been submitted to the Patent Office for legal protection:

1. Invention "Tower crane" - inventor Mariusz Żelachowski,

the application has been registered under the number P-275 904 on 18.11.1988.

2. Utility pattern "Zderzakowa przystawka podzialowa" creator Leonard Baliński, the application was registered under the no W-86 888 on 3.04.1989.

3. Utility patter "A device for supervising the functioning of manufacturing of pieces of pipes", creators: Mieczysław Nurkiewicz and Wacław Kowalik, the application was registered under the no W-86 713 on 18.03.1989.

4. An invention "a method and device for cuttinf pipes with simulataneous flattening" - creators: Mieczysław Nurewicz and Wacław Kowalik, application was registered under the no P-278 346 on 18.03.1989.

5. Utility pattern "rope sheave" - creator: Mariusz Żelachowski, Stanisław Kalinka and Mieczysław Nurkiewicz, the application was registered under the no W-91 862 on 23.01.1991.

6. Invention "a method of obtaining a ring of a rope sheave" - creator: Mieczysław Nurkiewicz, the application was registered under the no P-288 on 23.01.1991.

As of this day - the Patent Office has not issued any decision regarding the acceptance of any of the above soultions to be utility patterns or inventions.

XI ENVIRONMENT PROTECTION

1. Air

"ZREMB-FAMABUD" in Szczecin obtained "a decision on the allowable level of emission of pollution" given by the Voivodship Office in Szczecin on September 25, 1989, in which allowable kinds and amounts of pollution emitted to the

atmosphere are defined and the factory's obligations regarding them:

1) replacing diesel carts with electric carts by 1996,

2) the control of emmission of a casting cleaning plant OB-1000 by constructing a ventillation system with an emitter.

2. Noise

"ZREMB-FAMABUD" in Szczecin has the "decision on the allowable level of noise penetrating the environment" issued by the Voivodship Office on March 21, 1990.

The duties of the factory:

- tunning out of the outer fans (from the Cukrowa side) by constructing an additional case.

On April 21, 1990 "ZREMB-FAMABUD" asked the Voivodship Office in Szczecin not to conduct any noise tests until the fans are tunned out. The Office has agreed.

3. Sewage

"ZREMB-FAMABUD" in Szczecin has "an agreement on the supply of water and sewage disposal" concluded on October 16, 1990 with the Regioanl Enterprise of Waterlines and Sewage Systems in Szczecin, in which allowable amounts of sewage, the concentration and size of pollution are described.

The factory pays small fines for exceeding the allowable amount and quality of sewage. The factory does not have a sewage treatment plant.

XII. INVESTMENTS UNDER WAY.

On January 4, 1988 the Factory concluded an agreement no

172/44/88 with the Enterprise of Production and Installation of Electric Construction Equipment "ELEKTROMONTAŻ" (contractor) in Szczecin at 15/16 Bohaterów Warszawy street /annex XII.1 + annexes/. On the basis on this agreement and its annexes 1, 2, 3 the contractor has obliged himself to perform work in the undertaking "II stage of the reconstruction of ZREMB-FAMABUD Factory", and the Factory has obliged itself to pay a sum of 105,752,800 zloty for the performed work. Up till now the Factory has paid a due amount resulting from an invoice of 24,748,350 zloty, and it denis to pay any of the following invoices due to the fact that the work was not finished on the set date 21.06.1991 (annex no 3).

There is a lack of information on the fullfilment of obligations by both parties.

XIII. CONCLUSIONS AND RECAPITULATION

While evaluating the legal status of the assets of the enterprise, it should be stressed that in most cases the enterprise has the legal title enabling appropriate protection of its rights or unrestricted management of the possessed assets. As for the real estate, the Factory has documents enabling it to apply for an entry of the rights of perpetual usufruct of the possessed lots in a land and mortgage register.

Part of the movable assets have been rendered for possession to third persons, on the basis of civil law agreements concluded for an unlimited period of time (mainly lease).

The ownership of those facilities, however has always remained in the hands of the Factory.

In accordance with Article 2 item 2 of the act on grounds economy dated September 29, 1990, the land and other facilities located on area owned by the State Treasury, which on the day the act entered into force were managed by state legal persons, as of December 5, 1990 have become, by virtue of law, the property of those persons.

The acquiring of the property by those persons has been free of charge, provided those facilities had been constructed from their own means.

Real estate managed by those persons has been passed over for their perpetual usufruct.

In our opinion, for the purpose of clearing with the State Treasury, it should be assumed that the enterprise's own means include:

1. fund resources which are included in costs coming from amortization and profits e.g. development fund,

investment fund, background development fund, social and housing fund, founding fund and enterprise fund.

2. bank credits paid out from the above means.

As of today, no global system of accounting with the State Treasury has been worked out.

The acquiring of ownership of the buildings and facilities is confirmed by a decision of the voivode which also refers to the issue of perpetual usufruct which, in turn, forms the basis for an entry of the ownership right in the land and mortgage register.

As it has already been stated, such decisions /with very few exceptions/ have not been taken and it can be supposed that due to the enormous amount of work to be done by the state administration they will not be taken in the near future.

Therefore, the issue of the amount of the payments should be considered as perpetual usufruct and the issue of whether the Factory has been acquiring the ownership of the buildings and facilities free of charge or upon payments should be considered unclarified.

This causes a significant problem for the Factory, because it cannot be clearly excluded that the Factory will not be able to give proof of its own investment in a way stipulated by the voivode.

The procedure of confirming the source of the investment funds has not been determined yet, that is why there is no way to state how the investment of the Factory's own resources will be proved.

When assuming that the investment has not been made from the Factory's own resources, a necessity would arise to purchase the buildings and facilities, partly or in whole, from the

State Treasury.

On the part of the Factory's debts, a liability in benefit of the State Treasury would be added.

At present, it is impossible to even roughly estimate such a liability.

In accordance with Article 44 of the act on ground economy and expropriation of real estate, which determines the rules of fixing prices of land, buildings and facilities, it should be expected that the voivode will adopt a method of reconstruction for fixing the value of buildings and facilities.

A price fixed according to this method can significantly differ from the value of the buildings and facilities fixed by a company of accountants which has made the economic analysis for the Factory.

A lack of a decision on the part of the voivode regarding perpetual usufruct and paid or free acquiring by the Factory of ownership of buildings and facilities, leave the issue of any future debts of the Factory open.

Such a situation will cause the possible future investor or shareholder /if the enterprise is wound up or transformed into a company/ to set a condition for the purchase of shares or even entering into negotiations, that the legal status of "FAMABUD-ZREMB" is all clarified, and by this the following is understood:

a) obtaining appropriate decisions of the voivode regarding perpetual usufruct and the issue of the buildings and facilities which had been put up on the land. In the case of acquiring the ownership of the buildings upon a payment, the exact liability should be determined.

b) on the basis of the above documents and current geodetic maps together with the current numbers and area of the lots, making an entry in favor of the company of the right of perpetual usufruct of land and ownership of buildings and facilities in a land and mortgage register kept for the real estate.

We suggest that the above activities be undertaken so that the potential transactor is introduced to a company with a clear legal status.

As of the day the analysis has been made, we have not been presented with documents indicating the source of means from which the buildings and facilities on the land of the Factory have been constructed. It should be supposed that in few cases documents exist which reveal setting accounts with the budget, former Associations or other superior entities.

All in all, it should be assumed that the Factory's right to the real estate do not raise doubts, although the legal clarification of most of them is not complete.

SZCZECIŃSKA FABRYKA MASZYN BUDOWLANYCH
„ZREMB-FAMABUD"

71-004 SZCZECIN. UL. CUKROWA 12

Telefon: centrala 82-42-11 do 18
Telex: 042-22-40 Telefax: 82-28-52
KONTO: PBK III/O Szczecin Nr 368012-707

Znak: DN/1/92

Szczecin, dnia 2.01.1992

H. Stańko-Jakiel
6.01.92

Pan Andrzej LIPKO
Minister Przemysłu i Handlu
ul. Wspólna 4
00-926 W A R S Z A W A

Dotyczy: wpłynięcia na zmianę decyzji Prezesa Agencji Rozwoju Przemysłu

W dniu 31 grudnia 1991 roku Prezes Agencji Rozwoju Przemysłu oświadczył, że Agencja nie wypełni zobowiązania, podjętego przez Zarząd Agencji w dniu 27.11.1991 r. o zasileniu finansowym "FAMABUDU" kwotą 8 mld zł /osiem miliardów/.

Agencja w minionym roku warunkowała udzielenie w/w pomocy podjęciem przez Ministerstwo Przemysłu i Handlu decyzji o wdrożeniu procesu naprawczego w "FAMABUDZIE". Departament Restrukturyzacji Ministerstwa Przemysłu i Handlu pismem znak: DR.P/302/91 z dnia 9.12.1991 r. powiadomił Agencję o podjęciu prac dla wszczęcia postępowania naprawczego w "FAMABUDZIE".

Pismem znak: ARP/DW"604/St.U/91 z dnia 9.12.1991 r. Agencja upoważniła Bank Morski w Szczecinie do podjęcia działań układowych w imieniu "FAMABUDU" z wierzycielami Fabryki. Kopia w/w pisma Departamentu Restrukturyzacji Ministerstwa Przemysłu i Handlu przekonała Wojewodę Szczecińskiego do podjęcia decyzji o wstrzymaniu egzekucji zaległych przez "FAMABUD" należności budżetowych do dnia 20 stycznia br. Zarząd Agencji podejmując decyzję o udzieleniu "FAMABUDOWI" pomocy finansowej opierał się na diagnozie stanu technicznego i ekonomiczno-finansowego "FAMABUDU" opracowanej przez Eksperta Agencji Panią mgr inż. Halinę Stańko-Jakiel oraz wnioskach z raportu zagranicznej firmy consultingowej, która na przestrzeni 1991 r. badała "FAMABUD" na zlecenie UNIDO.

Oświadczenie Prezesa Agencji o wycofaniu gwarantowanej "FAMABUDOWI" pomocy finansowej stawia "FAMABUD" w świetle niewiarygodnego partnera w stosunku do wierzycieli, Wojewody Szczecińskiego, Banku Morskiego oraz praktycznie przekreśla realizację rozpoczętego programu restrukturyzacji "FAMABUDU", tworzonego w ramach postępowania naprawczego.

Niewielka kwota 8 mld. zł gwarantowanej pomocy finansowej, zdaniem Banku Morskiego /dysponenta/ nie musiałaby być udzielona już na początku stycznia. Ważne jest aby Agencja podtrzymała swoją decyzję z dn. 27.11.1991 r. Mając tę gwarancję Bank Morski mógłby prowadzić negocjacje układowe z wierzycielami "FAMABUDU".

Proszę Pana Ministra o wpłynięcie na zmianę decyzji Prezesa Agencji.

Z należytym szacunkiem

Do wiadomości:
[redacted]

DYREKTOR
mgr inż. Jerzy Kłosowski

19670
(3 of 4)

RESTRUCTURING STRATEGY
ACTION PLAN

for

ZREMB - FAMAHUD

UNIDO

PILOT PRIVATIZATION PROJECT

project No. [illegible]

Arnold Hill Sp. z o.o.
Chartered Accountants

RESTRUCTURING STRATEGY
ACTION PLAN

for
ZREMB - FAMABUD

UNIDO
PILOT RESTRUCTURING PROJECT

project No TF/POL/90/904

Arnold Hill Sp. z o.o.

RESTRUCTURING ACTION PLAN

FOR

ZREMB-FAMABUD

C O N T E N T S

RESTRUCTURING STRATEGY ACTION PLAN
FOR
ZREMB - FAMABUD

1. INTRODUCTION

101. The information contained in this action plan is taken from the various chapters of the final report and brought together. This action plan does not give details of why the restructuring is required. This is left to the report. The action plan therefore only gives firm recommendations and courses of action Famabud needs to pursue.

102. The restructuring strategy action plan is summarised in the attached table.

103. Once each phase of the restructuring plan has been completed the action must be reviewed to determine whether further action should be taken. Such action would include reducing the indirect and administration staff further. Additional reviews of direct and indirect production costs should also be carried out.

104. The main purpose of the action plan can be summarised as follows :

a. To change the organisational structure increase decision making efficiency and reduce unnecessary overheads
b. To make the production process more suitable to todays economic environment of competition and Polands recession.
c. To make the company demand led and not production or supply led.

2. RESTRUCTURING ACTION PLAN

201. The following paragraphs will summarised what the company needs to do to restructure. The details are included ir various sections of the report. The same order is taken as shown in the summary schedule. After the subject heading an

Attached is formal restructuring plan detailing the individual tasks to be performed and a formal timetable of implementation.
A separate schedule has been prepared showing which individuals have been assigned the task. This schedule also gives an appropriate narrative.

Description of task Task Subtask	Short term		Medium term				Long term		
	up to 1 month	up to 2 months	up to 3 months	up to 4 months	up to 5 months	up to 6 months	up to 9 months	up to 1 year	up to 2 years
Introduction of new management information system (including Purchase of Additional Computer Software and Hardware)		A							
Introduce Standard Costing System			A						
Appoint Finance Director	B								
Appoint Marketing Director	B								
Review Quality Control Procedures									
Introduce Task Book								F	
Training				C					
Factory Floor	C								
Design Department					D				
Daily Spoilage Report	C								
Quality Inspection Procedures	C								
Link to Wage Bonus System			E						
Compliance With BS 5750							F		
Review of Supplies	G					G		G	G
Formalised decision making process									
At Board Level	H								
At Departmental Level									
At Shop Floor Level	J								
Search For Joint Venture Partner	H								
Change Company Structure			K						
Factory Layout									
Tidyness	C								
Short Terms		C							
Long Term						L			
Implement 'Human Recource Development' Programme									
Marketing Department – Introduction of Marketing Expert	B								
Design Department					C				
Quality				M					
Shop floor						V			
Review of Wages System									
Simplify			A						
Introduced Form of Piece Rate			A						
Computerisation				N					
Search For Fabrication Work									
Brochure			O						
Marketing		O							
Job Costing System		C							
Market Spare Parts		O							
Market Repair Service		O							
Develop ZB–20 (with improvements)					P				
Carry Out Asset Disposal Programme									
Holiday Centres		N							
Hotel		N							
Plants			P						

Task Subtask	Short term			Medium term			Long term		
	up to 1 month	up to 2 months	up to 3 months	up to 4 months	up to 5 months	up to 6 months	up to 9 months	up to 1 year	up to 2 years
Change in Organisational Structure	B								
Storage									
Location	C								
Stock Control System						P			
Raw Materials Sold Off		G							
Design Efficiency									C
Production Labour									
Production	Q		Q			Q		Q	Q
Indirect	Q		Q			Q		Q	Q
Administration and Management	Q		Q			Q		Q	Q
Combining Departments		N							
Introduction Wider Range of Cranes									
Conception						S			
Design							F		
Launch								F	
									O
Power Consumption									
Electricity									
Assets To Have Restricted Use: –									
At Certain Times	C								
Factory Partially Lit	C								
Negotiations With Local Electricity Board		N							
Windows Cleaned	S								
Thermal									
Stop using Radiators	J								
Sealing Roof		C							
Extractors Shut off	J								
Height of Hot air blowers moved								C	
More exhaust stacks installed								C	
Holidays			M			M		M	M
Reduce Temperature in Stores	F								
Install Transparent Plastic Curtain								C	
Install Authomatic Gates							C		
Install double Glazing								C	
Leasing of cranes									
Marketing Exercise		C							
Implementation				O					
Feasibility study						C			
Reorganise Canteen		M							
Obtain additional finance & restructure existing debt	A								

FAMABUD restructuring plan — Key to personnel carrying out task

A. Finance Director after consultation with other main Board Directors
This task should preferably be done after appointment of Finance Director
B. Existing board in conjuction with outside consultant
C. Production Director
D. Production Director, but timing will depend on level and complexity of fabrication work received
E. Finance, Production and Personnel Directors
F. Production Director in conjuction with Technical Manager
G. Production and finance departments
H. Managing Director
I. Individual directors.
J. Department heads.
K. Finance Director. Task should be delayed until negotiations for a formal arrangements, such as a joint venture, is well under way with third party
L. Production Director. Should be left until a pattern of production has emerged and future can be predicted
M. Personnel Director in conjuction with Production Director
N. Finance Director
O. Marketing Director in conjuction with Production Director
P. Finance and Production Directors
Q. Personnel Director after consultation with Production, Finance & Managing Directors
R. Existing board.
S. Existing boards but will depend on current position of company

indicator is given to whether the action is short (S), medium (M) or long (L) term.

Introduction of a new management information system (S)

202. Firstly the company must be divided into cost centres or profit centres. Each of the 16 departments in the restructured enterprises must become accountable for itself and a cost centre. The finance director should be responsible for setting up this system.

203. Every cost centre must have a budget and therefore a plan to fulfil. The budget should be prepared from a "zero" base, that is assume that if a department does not exist there is no cost. Then calculate what costs that department should be incurring (and not what it is). Each department or cost centre must then prepare a plan of how to get to this required position.

204. Every department must report monthly via a management information system (MIS). They must report on:

performance for the month
reasons for the variance to the plan
action taken to correct the variance
whether next months plan can be fulfiled and reasons for any foreseen but not available variance
complaints by customers
new customer contacts
anything that many help the company recover from its crisis

205. Reports should be short and to the point. They will show what is good for one department is not necessary good for another. This natural conflict regarding departmental and company performance should be encouraged. Hidden problems cannot be resolved, but one in the open can.

206. Budgets and the recording of variances etc. should be carried out on a spread sheet package with good printing facilities. A cash flow could then be modelled and the plan monitored.

Standard and costing system (S)

207. The products should be costed on at least a 70% and 85% plant capacity working on a 2 shift 5 day working week. The 70 % is the efficiency which should be achievable at present and the 85% is the target.

208. Separate variable costs from fixed costs. Each of the 16 departments be prepared on this basis.

209. Variable cost of each department should be related to some function of the sales budget. An example is that a sales budget determines production and production determines the variable element of the labour cost and energy bill.

210. Calculate product price on planned production levels. Therefore the problem shifts from incorrect past pricing to plant capacity and sales drive.

211. The finance director should be responsible for setting up and maintaining the costing system.

Appoint Finance Director (S)

212. Urgent priority to have a Finance Director who can produce the right information for decision making.

213. The Finance Director and his key staff should be sent on regular courses to learn or improve their skills.

Appoint Marketing Director (S)

214. See separate marketing strategy action plan

Reviewed Quality Control Procedures (S,M,L)

215. Quality control procedures must be improved in the short term

and prepare the introduction of ISO 9000 (BS 5750) within 9 months. To achieve this the following is required :

a. Ensure that the quality control procedures in existence at present are actually being used on the factory floor.

b. Accurate daily spoilage report with explanation, names of individuals responsible for the mistakes and action taken to prevent situation reoccurring. For example items spoiled because they lie on the shop floor and not on wooden pallets.

c. Ensure that the quality control procedures installed are working and are not being used for any purposes other than the ones specified.

d. Factory floor wages should be linked to quality.

e. An internal training programme should be carried to lift quality standards

f. Quality Assurance procedures must be introduced in the design department for all design changes and improvements. This formal documents system is important in order to attract large customers.

g. Introduce task book so to record types of quality problems and their solution. The process for resolving the problem should be also recorded and the situation monitored on a regular basis.

Review of supplies (S,M,L)

216. Material stocks must be controlled. Excess stock must be sold as soon as possible. They have a low book value but a large realisable value.

217. In the medium to long term, lead times for ordering stock

should be reviewed and reduced. Stock should only be purchased for specific orders.

Formalised decision making process (S)

218. Decisions reached by senior management must always be recorded. Special files should be kept for that purpose. No major decision should be carried out without some documentation flow. A major decision an be defined if it has a legal or financial effect on the company or individual.

Search for joint venture partner (S)

219. All senior staff, especially in the marketing department should be aware of Famabud's policy to find a joint venture partner. All information in this area resulting from contacts made should be passed to the Managing Director.

220. The Managing Director should develop good contacts in the various government agencies and departments with respect to seeking a joint venture partner. He should also visit the various embassies and give information to the various commercial sections. Company brochures should be given to all contacts made.

Change in Company Structure (S)

221. On finding a joint venture partner the company's legal structure should be changed.

222. On failing to find a joint venture partner, company's legal structure should be changed once Famabud is on the road to recovery.

Factory Layout (S)

223. The factory must always be kept tidy. Any old crane work in progress should be stored away from the production areas (or scraped). Regular "housekeeping" is essential regarding safety.

224. Due to the uncertainly of which products are to be manufactured, it is difficult to rearrange the factory layout. But once product strategy has been determined the factory should be organised for efficient flow of work around the large machines.

Implementation of "Human Resource Development" Programme (S,M)

225. To bring the Famabud factory to international work standards, personnel need to be reeducated and a training programme started.

226. The visit of the marketing expert from the UK should be taken advantage of. He should instruct and train staff and not carry out the work himself.

227. All senior staff should be sent on management and skills development courses. These courses are increasingly available in Poland.

228. Specialist training courses should be attended by the marketing, design and quality control departments to develop their skills and professionalism.

229. Regular training courses and refresher courses should be conducted for the shop floor by senior management. The aim of the courses is to improve efficiency, quality and build up team spirit.

Review of wages system (S,M)

230. The wage structure needs to be simplified by negotiation with unions. Emphasis regarding bonus related pay should change to output per person and quality achieved.

231. The wages system should be computerised.

Search for fabrication work (S)

232. See marketing strategy action plan.

233. The accounts department should set up a job costing system that monitors the costs for each order. Overheads should also be allocated to each job.

Market spare parts and repair service (S)

234. See Marketing strategy action plan.

Develop ZB-20 (with improvements (M))

235. The ZB-20 self erecting crane which will be going into production soon. Once production starts the design should be received and modifications made to introduce features that are on western cranes.

Change in organisational structure

236. The organisational structure must be changed. The before and after diagrams are attached for the 16 new indirect labour and Administration departments. This Indirect labour should be reduced by 105 to 96.

237. In addition direct labour should be reduced by 76 to 96. The effect will be to increase factory efficiency and reduce current bad practices. Once sales increase direct staff can be hired.

Asset Disposal Programme (S)

238. Dispose of following assets after considering the valuations given in the final report and appendices:
- Two Holiday centres
- Hotel
- Two Factory sites

Storage (S,M)

239. All surplus stock should be sold. The various stock locations on the main site should be moved so that they are nearer

where the work is carried out.

240. The computer stock control system should be revised so that it gives information such as demand, lead times and excess stock. Stock ordering procedure should be controlled in such a way as to reduce the time materials are kept in stock.

Design efficiency (L)

241. The design department needs to be computerised (CAD), quality assurance procedures introduced and training given.

242. Partners which have a design office should be sought to increase design efficiency.

Introduction of a wider range of cranes (M,L)

243. The present self erecting crane ZB 20 should be developed in order that other larger models can be manufactured.
A new crane should be manufactured.

244. A new crane should be designed after carrying a market study. Also western crane features must be considered. The design should be carried out using CAD techniques including stress calculations.

245. The timing of the crane launch should be made after considering dates of various international fairs and the revival of the european economies.

Power consumption (S)

246. Carry out the 5 electricity cost saving points as detailed in chapter 10 of the final report. These includes restricting assets use, review of lighting, cleaning windows and negotiation with electricity board.

247. Carry out the thermal cost saving points as detailed in chapter 10 of the final report. These include stopping the use of radiators, sealing holes in the roof, shutting of extractors, reducing the height of the hot air, blowers, more exhaust ducts installed, plastic curtains, automatic double doors and double glazing.

Leasing of cranes (S,M)

248. See marketing strategy action plan.

Reorganise canteen (S)

249. The canteen losses should be cut by either closing it down or renting it out (at a minimal charge) to a catering firm or a group of employees.

Obtain additional finance & restructure existing debt (S)

250. Details of the additional finance required and restructure of debts are given in chapters 1,2 and 14 of the final report.

251. Additional finance and the restructure of the debt goes in hand with the progress of the whole restructuring strategy . Once the whole restructuring programme is well under way the final report and a business plan should be presented to various government departments and banks.

MARKETING STRATEGY
ACTION PLAN

for

ZREMB - FAMABUD

UNIDO

PILOT [illegible] PROJECT

project [illegible]

Arnold Hill Sp. z o.o.
Chartered Accountants

MARKETING STRATEGY
ACTION PLAN

for
ZREMB - FAMABUD

UNIDO
PILOT RESTRUCTURING PROJECT

project No TF/POL/90/904

Arnold Hill Sp. z o.o.

Marketing strategy
Action Plan
for Zremb - Famabud

CONTENTS

APPENDICES

Marketing Strategy

Action Plan

for Zremb Famabud

1. INTRODUCTION

101. In order to assist the management of Zremb Famabud in their marketing strategy we have prepared this action plan by extracting the relevant items from the Final Report and included other information from our extensive notes. It should be noted that this action plan does not contain anything that was not previously discussed with the Managing Director or his senior staff.

102. The need for separate action plan was discussed with UNIDO in Vienna. It was concluded this document was necessary in order to focus Famabud's management in taking a planned approach to increasing sales.

103. Due to the change to a market economy and Famabud losing its Monopolist position as a crane manufacturer, other products now need to be manufactured and sold on the home market and exported.

104. Famabud's marketing and sales strategy can be presented in nine groups:

a) Design and sell own products in Poland and ex-COMECON countries.
b) Produce fabrications to customer design (home and export).
c) Design and sell products in Poland and ex-COMECON countries, produced with the cooperation of other Polish companies. These other companies to supply electric motors, diesel engines, electrics, electronics, hydraulics etc.
d) Assemble and sell products from Western European countries to home and ex-COMECON market (under licence or another form of agreement).

e) Become agents and provide after sales service for Western European manufactured equipment sold in Poland.

f) Design and sell own products to Western European countries.

g) Assemble and sell Polish products produced in cooperation with other companies to Western European countries.

h) Manufacture products under licence or other type of agreement for Western European countries.

i) Become a service centre for own and subcontracted products sold in Poland and North East Germany.

105. The strategy is very wide because Famabud has a large manufacturing capacity to fill. It should initially concentrate on a,b,f and i in 104 above. The marketing staff when visiting companies should as their secondary task seek interest and develop c,d,e,g and h.

2. MARKETING DEPARTMENT

201. The purpose of the marketing department is to develop a sales strategy and achieve the required penetration in the home and export markets.

Marketing Director

202. Famabud must appoint a Marketing Director either from its own staff (such as the Technical or Production Director) or from outside the company. The post ideally should be filled by someone who:

a) has worked in exports before

b) has a reasonable technical background

c) is not afraid of making a pricing decision

d) has knowledge of contracts, and consequences of their non fulfilment

e) has a driving licence

f) has managed staff previously

g) is prepared to spend approximately 50% of his time travelling.

203. As stated in the report the Marketing director should be responsible

for the marketing, sales and product development departments.

Marketing staff

204. In order to attain successful sales orders a well staffed marketing department is essential. It should have 8 staff and a secretary. 4 of the staff should be responsible for home sales and 4 for exports. The export staff must be fluent in English and perhaps German. The home staff dealing with ex-COMECON countries should know Russian. The secretary should know English and perhaps Russian and German. The number of marketing staff has been increased by 4 to 8 to reflect the liquidity crisis in Famabud and critical nature of the Polish economy. Once plant capacity targets are reached through confirmed sale orders the number of marketing staff can be reduced.

205. The home marketing staff should develop the business in Poland and the ex-COMECON countries. This work will not be very fruitful in the short run, but needs to be developed to prevent other Polish or ex-Comecon companies from taking the market.

206. The export staff should concentrate on developing business with Western European countries. This does not only mean producing products for Western Europe but for companies which export all over the world.

207. The marketing staff salaries should be linked to the value of orders successfully completed.

3. WORK METHOD

301. From the two marketing sections (home and export) the staff members should take it in turns to be at Famabud and travelling. Each staff member should spend every other week in Famabud, doing the ground work, preparing for subsequent trips and reporting to the Director on his previous visits to potential customers.

302. The marketing department must be technically aware what can be produced by Famabud. Chapters 4 and 5 give the information in more detail but a few examples are:

cranes
bogies
gears
hardening of steel
large rings
pulleys
large screws
drilling
turning
machining
assembly work
fabrications (steel cut into any shape and welded.)

303. The factory at Famabud can produce complete products such as cranes, bogies and other fabrications. Its strengths lie in that it can supply parts of larger structures (or subassemblies) to other companies or it could receive subassemblies in order to complete the product in Poland ready for sale. The marketing staff must be aware of the manufacturing possibilities and act on them to produce orders.

304. Research work needs to be carried out by the marketing staff to form a planned strategy. The following sections give details on the information we have gathered during the assignment. This is a starting point for the marketing staff. It is not to be considered as an exhaustive list. Research work for products and items to be produced by Famabud can be obtained as follows :

a) Attend trade fairs in Europe such as Frankfurt, Leipzig and Poznań, not only to display Famabud products, but also for ideas for manufacturing in Szczecin. Furthermore the companies

displaying their products could be approached for possible :

- licence agreement for manufacturing their products in Poland
- Famabud to become an agent for them in Poland with final assembly work carried out in Szczecin
- become a supplier of fabrications or other items, such as pulleys, gears, screws, machined items etc. to these companies
- become a sales and service point for other companies in other countries

b) Obtain trade magazines and become member of various trade bodies such as ones connected with cranes and the railways. Famabud's name and products should appear in all the relevant trade journals and catalogues such as Cranes Today. Analyse the trade press for potential areas for cooperation or fabrication work. Make contact.

c) Visit the various Western European embassies and use their library material and trades index to obtain possible contact names and addresses. Addresses can also be supplied to you by ourselves.

d) Make contact with Polish manufacturers of complementary products such as electric motors, castings, electronics, hydraulics, galvanising, diesel engines. Develop mutual areas of cooperation. This increases Famabuds potential range of products.

e) Visit existing Famabud customers for more work but also to gather information for forming contacts with other companies.

305. It should be noted that Famabud geographic position also allows it to sell products or be an agent to the North East area of Germany. It should not consider itself to be a company in the North West of

Poland but also an entity in the North East area of Germany.

306. Start a file for each contact.

307. Each initial contact should be made by telephone asking details of:
   a) products made by them
   b) whether they are only a project and sales office with minimal manufacturing capability
   c) whether they are only subcontractors
   d) any brochures or sales information they have
   e) the number of employees and the latest annual turnover.

308. Decide which companies are worth visiting for Famabud to be a potential customer or alternatively a supplier to Famabud of a special item which is outside Famabuds capability to manufacture. Contacts should only be rejected if there is reasonable certainty that there will be no short or long term benefit.

309. Visit all companies which have possible potential. Avoid sending just circulars, for the response is usually almost nil. Make notes, not only on the technical side but, also on the personal background of the contacts such as first names, family details, hobbies, sport, drink and food preferences etc. This information will be very useful for subsequent visits. During the visit see how Famabud's capabilities can help the other company or contact. Make sensible proposals and do not ask for guaranteed long production lines. It may take several visits before an order is obtained. It is important to see the potential in every contact made and develop this over time. Ask for other contacts. Then if there is no potential do not pursue the contact further.

310. Give the contact a package of information about Famabud including a brochure, Famabud pens, drink mats, and technical information in the product areas concerned.

311. Where the contact develops into a potential order draft an offer letter with the potential customer and agree on prices (if necessary contact Famabud staff for technical, financial and cost information). Avoid delaying this action for it could cost you the order. In the office prepare the relevant contractual documents with the sales department.

312. Product prices must be flexible. For exports they should be related to the German Marks or US Dollars. Domestic price increases should not automatically mean the export prices increase. Price range for each product should be calculated, separately variable costs from fixed costs. Minimum price should be the variable cost plus a small margin. The maximum price should be based on absorbing all overheads plus a profit margin at 60% plant capacity. The finance department should be involved in setting the pricing guidelines.

313. Write up files soon after the visit, but before returning to the office. The files should contain the main points discussed in the meetings, the action to be taken by both parties and any personal information. On returning to the office write a "thank you" letter and include all action points.

314. Follow up orders made to obtain customer comments on quality, performance and delivery. Keep contact so that further orders are obtained.

315. The one week in two which is spent travelling should be planned so that as many contacts as possible in a given area can be visited.

316. Once contact is initially made, subsequent telephone calls will help to keep the contact from going stale, especially if the next planned visit is many months away.

317. The marketing department should produce a brochure after deciding

what products and markets it will penetrate both at home and abroad. The brochure must be of a high quality (western standard) and updated on a regular basis.

4. PRODUCTS - HOME & EX-COMECON COUNTRIES

401. Famabud's products and type of plant are suitable to manufacture and supply the home market and ex-COMECON countries. Since Poland was in the Comecon small trade organisation for about 30 years, this is therefore a natural market for the company. Due to the economic crisis in all the ex-Comecon countries the market prospect for short term is not very good. But Famabud must develop this market for long term gains.

Cranes

402. An example of why the home market cannot be ignored is that Potain, France's largest crane manufacture opened an office in Warsaw. In January and February 1992, Potain had received 6 orders for cranes. In the 14 month period from January 1991, Famabud had sold 10 cranes, 4 at a reduced price. It should be noted that Famabud has a stock of cranes ready for immediate delivery and Potain's customers are willing to wait several weeks for theirs. Potain cranes are more expensive than Famabuds. The price difference also reflects the transport cost from France and the customs duties. They offer, as standard, a 2 year repayment schedule. That is,a 25% deposit and then just over 3% per month for 24 months. The repayment amount each month is in zloties with the value linked to the French Franc. Famabud could offer similar terms with the repayment amounts linked to the inflation index.

403. The marketing staff must actively promote Famabud's range of cranes (including the new self erecting crane) on the home market at prices which compensate for the lower level of technology, longer time required for erecting and slower operating speeds.

Bogies

404. Until July 1991 there was a good possibility that orders for bogies would be received. Since completing the last order towards the end of 1991, no new orders have been received. Poland's rolling stock (locomotives, carriages, wagons and trams) are old and need replacing. In the process of reviewing the economy Poland will need to invest in better and faster trains, new wagons, carriages and trams. Famabud must make contacts with the relevant companies in Poland and other ex COMECON countries such as the Baltic states, Czechoslovakia, Hungary, Ukraine. Apart from the manufacturers of equipment, contact should be made with all the repair depots to supply replacements for the old rolling stock.

405. In Poland some of the main manufacturers of locomotives, carriages, wagons, trams and repair depots are shown in Appendix T.

Pulleys

406. Famabud's engineers have designed a pulley which is much lighter than one made as from a casting and is less prone to wear out the rope than fabricated equivalent such as a Polain design. The manufacturing cost calculations show that it is potentially cheaper than its competitors.

407. Complete the patenting of this pulley in Poland and obtain EEC and ex COMECON patents. In the long term obtain patents for other countries.

408. Contact all major manufacturers of products using pulleys in Poland, which include factories producing mobile cranes, lifts, escalators, dock side cranes, other lifting devices, lathes, milling machines, etc. This information can be obtained via GUS (Statistical Office) by specifying the industry coding. All ex COMECON countries have a GUS service. If requested Arnold Hill can supply this information for Poland.

409. Contact major end users and services organisations which replace pulleys on a regular basis such as city service departments (pulleys used in lifts in blocks of flats), construction companies etc.

Gears, gear boxes, large rings, special screws and various hardening processes.

410. Famabud has equipment for producing gears, shafts, assembled gears, large rings (up to 2 meters in diameter, with or without teeth), special large screws. In addition it has facilities for traditional heat hardening and for induction hardening. Local companies around Szczecin including North East Germany could be contacted. In Poland the areas contacted initially should be in the Szczecin, Koszalin, Słupsk, Gdańsk, Toruń, Bydgoszcz, Piła, Gorzów Wlkp. areas. The information can be obtained from GUS (Statistical Office) by defining the industries of interest and the counties. These companies should be circulated and visited in order to explain the cost advantage of using a specialist company such as Famabud.

Fabrications

411. Famabud is now in direct competition with many Polish companies which have the facility to produce fabrications. Famabud must compete on price, quality and delivery. In its brochure it should explain that it has (after first obtaining) all the necessary quality and inspection certificates such as the equivalent of BS 5750 (ISO 9000).

412. Fabricated products apart from those stated above will also include items such as containers for water, petrol, chemicals. Other items include pressure vessels and heat exchangers carried out to customer designs.

413. Famabud's competition in Poland includes the companies shown in Appendix U.

414. Some of the above companies are larger than Famabud and have similar or worse financial and capacity problems. The marketing effort should be concentrated therefore in the North of Poland and North East Germany then the rest of Germany with Sweden, Norway, UK, later still, the other European countries. Marketing drive in southern Poland is unlikely to be fruitful due to the large competition there and the cost of transporting large heavy items.

415. Marketing drive should be carried out by :

a) Reading local press for new construction and other projects being discussed or planned in the area. Any project with a steel content should be of interest. These would include port facilities, bridges, warehouses, factories, office buildings, shopping centres, pylons.

b) Read trade journals and trade press. Advertise services in these publications.

c) Contact companies in the industries given in Appendix S Priority 1, then Priority 2 and lastly Priority 3 from information obtained through GUS (we can also supply you with this information).

d) Develop a network of information gathering through complementary factories, local authority offices, local engineers, trade associations, local departments of trade and industry.

Road construction equipment - steam and vibration rollers.

416. We understand that there is no manufacturer of equipment in Poland for packing the road surface during construction such as steam rollers and vibration rollers. This is a product Famabud should develop preferably under licence or to be assembled in Poland. Appendix R should give first leads in this area. But more contact addresses can be supplied on request.

417. In the long term, when the construction sector is more buoyant, with the cooperation of other complementary factories in Poland, Famabud should develop its own products. It should be noted that the major parts of a steam roller need to be replaced every 3 to 5 years.

418. There are 3 recent proposed motorway plans under reviewed with the Council of Ministers. The capital financing is from German and Swedish sources. Famabud should make the relevant enquiries to ensure that they are included in the projects.

Galvanising

419. Increasingly, steel products are treated in some way to prevent rusting. One method is galvanising. Famabud must form working links with such companies in order to provide a more complete service.

5. LICENCED OR ASSEMBLED ITEMS FOR THE HOME, EX COMECON AND EEC EXPORT MARKET.

501. Famabud must begin cooperating with Western European companies to manufacture and assemble products which are to be sold in Poland or re-exported to Western European countries. It should be noted that a large number of companies in Europe export all over the world. Thus by manufacturing whole or a part of a product for a European manufacturer or design office it is quite likely that the end user may be on another continent. An example is NEI, a UK company, which sells cranes all over the world.

502. Examples of companies, and industries which Famabud must obtain business by contact from are included in Appendix P to S. In brief these include :

a. cranes
b. rolling stock including special wagons and carriages
c. construction equipment
d. heavy trailers for carrying raw materials, specialist vehicles such as refrigerated containers, low loaders, dust carts, steam

rollers

e. heavy farm equipment
f. containers for chemical industry
g. pressure vessels
h. heat exchangers
i. water and petrol tanks

503. The market for making fabrications is very large and therefore impossible to gauge its size. There are literally many thousands of companies in Western Europe that use or produce fabrications. Famabuds' contribution will be a very small percentage of the whole competitive market and therefore must complete on price, quality and performance. This market is so large that entering it will not cause any problems providing that criteria are met and a willingness to change to produce other products. Exporting to Western Europe is essential for short term survival.

504. A marketing expert from NEI will assist the marketing department in formulating the approach to these companies. His presence must be utilised in order to learn how to make a sale. He will not be at Famabud to make sales on behalf of the company. This is the Marketing Department's function.

505. Many companies in the EEC are looking for contracts in Poland. As there is competition for this work, price becomes very important. Famabud when contacting companies must ask them whether they have contracts in Poland. The reduction of the price due to lower labour, material and local transportation costs should be exploited. An example is that one very large UK company has signed a contract to sell to Poland continuous track laying equipment. The bulk of this contract will be manufactured in Poland.

506. Famabud's export marketing staff should always be on the look out for products which could be produced by Famabud or sold through

Famabud.

507. Famabud's staff should collect price information from all possible sources. This information should be taken into account when quoting for new work. Export prices must be based on what the market is willing to accept and not related to changing prices at home.

6. FAMABUD'S OWN PRODUCTS FOR EXPORT TO EEC COUNTRIES

601. All products and strategy in chapters 4 and 5 apply equally in this section. These include cranes, bogies, rolling stock, construction equipment, trailers, steam rollers, heavy farm equipment, containers pressure vessels, heat exchangers and water and petrol tanks. Addresses for initial contact are show in Appendices P,Q and R. Details of product groups that may be manufactured in whole or part are shown in Appendix S.

602. Famabud must operate quality assurance system such as BS 5750 or similar. Marketing staff when obtaining orders must ask what quality standards are required.

603. The export to Western Europe is vital for the short term survival of Famabud. Areas to concentrate initially are Germany, UK, Sweden and Norway. But enquiries or leads relating to other countries cannot be ignored.

7. MARKETING GOALS NECESSARY FOR FAMABUD'S RECOVERY

701. For Famabud to recover and overcome its liquidity crisis during the high rates of inflation in Poland, goals need to be set, monitored and achieved, by firstly, the marketing department and secondly, by converting the orders into sales.

702. Famabud's total capacity during a two shift working week is approximately 20,000 tonnes a year. Suggested targets for the next 20 quarters are shown in the table, below the key to the table is as

follows:

H = home

E = export

1. Bogies - quantity - The number of bogies that need to be sold of the type similar to that manufactured by Famabud

2. New crane - quantity - The number of new self electing cranes designed by Famabud

3. Old cranes - quantity - The number of old model cranes in stock that need to be sold

4. C Fabr. - tonnes - This relates to fabrications made from materials supplied by the customer. This includes assembly work and servicing of old cranes

5. O Fabr. - tonnes - Fabrications produced by Famabud to customer's design and specification using materials supplied by Famabud

Minimum Sale Targets

Quarter	Bogies Quantity		New crane Quantity		Old crane Quantity		C Fabr. tonnes		O Fabr. tonnes	
	H	E	H	E	H	E	H	E	H	E
1 1992					1					50
2					1					100
3	10	10	10	10	1		5		10	150
4	100	30	20	20	3		10		10	225
5 1993	100	50	25	30	3		10		15	275
6	200	50	25	30	1		10		20	350
7	200	50	25	30	1		10		20	450
8	200	50	25	30	1		10		20	550
9 1994	200	50	30	30	1		10		20	700
10	200	50	30	30	1		10		30	700
11	200	50	30	30	1		10		45	800
12	250	50	30	30			10		60	1000
13 1995	250	50	30	30			10		75	1200
14	250	100	30	30			10		90	1400
15	250	100	30	30			10		100	1600
16	350	300	30	30			10		100	1600
17 1996	350	300	30	30			10		125	1600
18	350	300	30	30			10		125	1600
19	350	300	30	30			10		125	1600
20	350	300	30	30			10		125	1600

8. THREE CASE STUDIES RELATING TO FAMABUD

801. The following 3 case studies views are that of the other party and not Famabud's. The importance of giving the other side of the story, is that it is that side which matters in the end. It is the potential customers perception of why an agreement could not be reached which determines whether or not he proceeds further or gain elsewhere.

NEI Clarke Chapman Marine

802. NEI of Newcastle is UK's largest crane manufacture. It also designs and produces special wagons and bogies. It is a subsidiary of Rolls Royce. The company has a design office and a small manufacturing operation. Most of its manufacturing work is subcontracted to companies in the UK, other EEC countries and to Hungary. It is looking for a manufacturing base in Poland.

803. NEI's Commercial Director and Production manager visited Famabud in November 1991. They were impressed by the location of the factory near a port close to the German boarder. Furthermore they commented that the factory was too big in relation to western standards but was well equipped to carry out large and complex fabrications. They therefore sent to Famabud in December 1991 detailed tender documentation for a dock cargo handling crane.

804. NEI received Famabuds offer in February 1992 for 10 to 15% of the whole project. NEI expected a quotation for 90% or more of the project. Famabud did not take up Arnold Hill's offer of help in putting the offer together.

805. Famabud stated that the fabrications were too heavy for them to lift within the factory and that one item (the ring of over 5 meters diameter) was too large to manufacture elsewhere because trees had

to be felled along the route.

806. NEI's production manager appreciated the problem but stated that he looked at the factory with this particular order in mind and by connecting the overhead cranes together with an equalisation bar 25 tonne could be lifted. For heavier loads there is room for a mobile crane. The large ring could be transported at an angle on a low loader using specially made supports.

807. NEI rejected the offer for the following reasons :

- The percentage of the whole fabrication accepted by Famabud was too small to make it economic for the items to be manufactured by them
- It was put together in a very amateurish way
- The pricing although not too far adrift to what NEI expected did not have the spread of values that would normally be expected, for the easier and more complex elements of the tasks
- It contained details of the inspection procedures and excluded the quality control system to be used

808. The Polish Director of Arnold Hill Sp. z o.o. paid a visit to NEI in Newcastle to discuss the rejection of the offer. On his reassurances NEI agreed to allow Famabud to submit another tender. In addition the commercial director of NEI stated that they would consider doing the following:

a) send someone to Famabud to help them formulate an offer together and explain how the problem areas could be overcome
b) help Famabud find subcontractors for items which they cannot manufacture themselves
c) help to calculate a realistic price for the job enabling Famabud to make a reasonable profit
d) on the assumption that the tender will be acceptable by NEI they

will be willing to send a production manager to be present at Famabud in order to advise them on the production planning, resolve any production problems and supervise the assembly work on the dock side.

809. NEI was prepared to give another 1500 tonnes of orders for Famabud to manufacture before November 1992. On receiving the poor offer letter from Famabud, NEI gave these orders to a Hungarian company.

810. Famabud have therefore lost significant hard currency revenue during their most critical period. It should be noted that NEI and Arnold Hill Sp. z o o. were on hand to help, but Famabud's Director did not take advantage of the assistance being offered.

Potain

811. Potain, France's largest crane manufacturer approached Famabud for fabrication work during the second half of 1991. Initially Famabud's large factory was built to produce cranes under licence from Potain 18 years ago.

812. Potain's representative stated that the pricing structure was wrong and that Famabud wanted to manufacture large quantities which Potain could not guarantee. Potain went to another company in Poland.

813. Potain is looking for a Polish company to manufacture or assemble cranes. They estimate that they need a facility which should eventually reach a production target of 400 cranes a year. They are now looking for a company to cooperate with.

Volvo

814. Volvo approached Famabud for manufacturing and assembly work. Volvo were to supply many of the items for assembly. Famabud's price for doing the work was so high, that a Volvo representative stated that the price was too high.

815. The work was won eventually by Bumar Łabędy in southern Poland. The offer from Bumar Łabędy was still economical after considering the additional transportation costs of raw materials, assemblies and the finished product. If the work was carried out at Famabud's factory in Szczecin, the transportation cost would have been insignificant in comparison.

Conclusion

816. Famabud's director must formulate, with expert assistance, the right Marketing and costing strategy in order to save the company. If the above 3 orders were not lost by Famabud, the factory would not be in such a critical situation. We have not had any other contact with Famabud's customers or potential customers and therefore cannot comment on whether these were isolated cases or a general problem within Famabud.

9. RESULTS FROM CONTACTING COMPANIES ON BEHALF OF FAMABUD

901. Arnold Hill Sp. z o.o. contacted by letter and telephone crane and fabrication supplies in the UK and other countries in western Europe. A cross section of the comments received included the following:

a) Poland is a risky place to invest in at the present time

b) The company should contact us and send their brochure

c) I have never heard of Famabud and I know the crane industry very well

d) Tower cranes are manufactured in Czechoslovakia and Hungary, we are not aware of Polish cranes

e) Quality has been a problem in the past. A Polish company has to prove it follows the international quality standards.

f) We may need companies in Poland to produce assemblies for us, ask them to send us a brochure on what they do.

g) Yes we are interested ask them to send an indication of prices.

h) No we are not interested to invest or subcontract work to Poland.

902. The above responses where is relation to our questions which included.

a) Are you considering investing in Poland.

b) Would you subcontract part of your work to a Polish factory experienced in making fabrications.

c) Have you considered asking a Polish company to produce a fabrication to your design and specification.

d) Do you know of Zremb Famabud, Poland's largest crane manufacturer.

903. A few of the foreign companies circulated knew of Polish factories such as Bumar Łabędy and Stalowa Wola.

904. Our conclusion from the exercise was that Famabud was not known in Europe and requires a good publicity drive through trade journals etc. In addition Famabud need to produce a brochure urgently (first mentioned to the Director in July 1991) in order to give it an air of stability and professionalism. This brochure must be prepared using expert help.

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Fax: 37 81 5 25 74

KRUPP INDUSTRIETECHNIK GmbH.

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Fax: 0 21 35 7 51 91

THYSSEN ENGINEERING GmbH.

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Nordhein-Westfalen
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UNION NAVAL DE LEVANTE S.A.

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Fax: 07 52 :7 73

KVAERNER EUREKA A.S.

Joseph Kellers vei
N-3408 Tranby
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Norway.
Tel: 03 85 90 00
Fax: 03 85 04 75

MISCELLANEOUS ARCHITECT AND BUILDERS METAL WORK

VIEILLE-MONTAGNE S.A.

Quai Saint-Paul de Sincay 32
B-4900 Liege (Angleur)
Liege
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Tel: 041 65 38 00
Fax: 041 67 63 74

MANNESMANN HANDEL AG.

Niederkasseler Lonweg 20
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WEBB SERVICE GmbH UND MISTER MINIT SERVICE.

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JUNGHEINRICH AKTIENGESELLSCHAFT.

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WIELAND-WERKE AG METALLWERKE.

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Fax: 0240 743 62

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SSAB SWENSKT STAL AB.

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LINDAB AB.

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RIVER, CANAL, HARBOUR AND COASTAL VESSELS

HOWALDTSWERKE-DEUTSCHE-WERFT AKTIENGESELLSCHAFT.

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Riedemannstrasse 1
D-2058 Bremenhaven 1
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MOBILE CRANES

KOBE STEEL, Ltd, VERBINDUNGSBURD DUSSELDORF.

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WABCO WESTINGHOUSE FAHRZEUGBREMEN EIN UNTERNEHMENSBEREICH DER WABCO STANDARD GmbH.

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Fax: 05 11 2 10 23 57

BUHLER GmbH.

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ALTOS HORNOS DE VIZCAYA S.A.

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INDUSTRIAL GROUPINGS OF INTEREST TO FAMABUD.

FIRST PRIORITY:

- Metal Bridges, Tunnel Constructions, Hydro-Electric Work, Pylons.
- Metal Claddings, Facings, Fronts.
- Miscellaneous Architectural and Builders' Metalwork.
- Metal Containers.
- Boiler work, Plate Work Piping and Tubing, Sub-Contractors.
- Industrial Steam Boilers and Accessories.
- Industrial Turned Metal Precision Parts, Screws and Bolts, General.
- Gear Wheels, Gears.
- Pulleys, Drums, Flywheels, Driving Gears, Rollers, Cones.
- Locomotives, Rail cars, Tram cars and Equipment.
- Railway and Tramway Carriages and Wagons.
- Rolling Stock Equipment and Accessories.
- Trailers.
- Railway Track and Overhead Line Equipment.
- Heavy Mechanical Handling Equipment.
- Locomotive and Wagon Handling Equipment.
- Mobile Cranes.
- Mechanical Handling Equipment, Special Purpose Accessories.
- Pallets and Containers.
- Hoisting and Materials Handling Equipment, Research, Design and Installation.
- General Mechanical Engineering, Fabrication and Machining to Specification, Prototype Design and Construction.
- Assembly Sub-Contractors.

APPENDIX S

SECOND PRIORITY

- Structural Metal Fabrications; Constructions; Prefabricated Buildings, Frameworks.
- Sheet Metal Products and Industrial Hollow-Ware.
- Boilers and Accessories.
- Ovens, Kilns and Furnaces for Miscellaneous Industries.
- Threaded Screws, Bolts and Fasteners, Classified by Type and Use.
- Couplings, Clutches and Variable Speed Equipment.
- Power Transmission Equipment, Drive Shafts.
- River, Canal, Harbour and Coastal Vessels.
- Sports Boats and Yachts.
- Marine Propulsion, Steering and Transmission Units, Boilers.
- Ships' Superstructure Components, Marine Equipment.
- Trailer Components.
- Sub-Contractors for Transport Equipment and Infrastructure to Specification.
- Sand and Gravel Extraction, Washing and Grading Equipment.
- Drilling, Boring and Injection Equipment.
- Exploration Equipment for Oil, Natural Gas, etc.
- Oil well Drilling and Extraction Equipment.
- Light Mechanical Handling Equipment.
- Gas Furnace Equipment.
- Steel Making Plant and Machinery.
- Kilns and Ovens.
- High Precision Engineering Work, Classified by Nature of Work.
- High Precision Engineering Work, Classified by Industry.
  Accessories, Eaves and Gutters.

THIRD PRIORITY

- Metal Cutting, Folding, Planing, Sawing, Boring, Reaming, etc.
- Metal Packaging Goods, Cases, Drums, etc.
- Tanks for Gases and Liquids.
- Heat Exchangers, Cooling Towers, Condensers and Radiators.
- Non-Electric Central Heating Systems, Hot Air Generators.
- Central Heating Equipment and Accessories.
- Non-Electric Drying Cabinets and Rooms, Industrial Driers.
- Screws and Bolts for Miscellaneous Use.
- Chains.
- Buses and Motor Coaches.
- Trucks, Lorries.
- Track and Shoe laying Vehicles, Amphibious Vehicles.
- Motorised Caravans, Mobile Professional Units.
- Trailer Caravans and Homes.
- Motor Vehicle and Truck Body Parts.
- Hydraulic Machines and Equipment, Water Turbines.
- Steam and jGas Engines and Turbines.
- Space Heating, Air Conditioning and Humidifying Equipment.
- Dust and Fume Collection and Extraction Equipment, Filtration and Cleaning Equipment.
- Blowing, Ventilating, Aeration Plant.
- Industrial Refrigeration Plant and Equipment, Freeze Drying Plant.
- Refrigerators, Freezers, Ice Chests, Institutional.
- Power Cultivators, Agricultural Tractors and Other Motorised Vehicles.
- Soil Preparing Equipment, Ploughs,etc.
- Soil Dressing Equipment, Harrows, Hoes, Etc. Spreaders.
- Crop Protection Equipment.
- Irrigation and Watering Equipment.

- Crop Harvesting Machinery and Equipment for Grain, Roots, Vegetables and Fruit.
  - Green Crop Harvesting Equipment.
  - Cereal Threshing, Agricultural Products Conditioning and Grading Equipment.
  - Hay, Grass, Chaff and Root Processing Equipment.
  - Cattle and Horse Breeding Farm Equipment.
  - Pig, Hog and Sheep Breeding Farm Equipment.
  - Forestry and Plantation Working Equipment.
  - Forestry Tools.
  - Water and Sewage Treatment Plant and Equipment.
  - Pulp and Cellulose Preparation Equipment.
  - Paper Making Equipment.
  - Mining Equipment for Underground Operations.
  - Open cast Mining Equipment and Salt Extraction Equipment.
  - Coal, Ore and other Mineral Dressing Equipment.
  - Quarrying and Stone Working Equipment.
  - Well and Rig Drilling Equipment, other than Oil.
  - Earth-Moving Machinery.
  - Road Making Machines.
  - Railway Track Laying and Lifting Equipment, Rail Logging Equipment.
  - Bridge, Gallery, Tunnel and Darn Building Equipment.
  - River and Inland Waterway Construction Equipment.
  - Harbour Construction and Maintenance Equipment, Cargo Handling Equipment.
  - Continuous Handling and Storage Equipment for Bulk Materials.
  - Continuous Handling and Storage Equipment for Individual Items.
  - Lifts, Elevators.
  - Industrial Tractors, Trucks and Materials Handling Vehicles.

APPENDIX T

a. POLAND'S MANUFACTURERS OF LOCOMOTIVES, CARRIAGES, WAGONS AND TRAMS.

GDAŃSK	Siennicka 25 80-958 Gdańsk.
GROWAG	27 Stycznia 4 62-065 Grodzisk Wielkopolski.
KONSTAL	Metalowców 7 41-500 Chorzów
KSP	Młyńska 14 63-600 Kępno.
LUBAŃ	Lenina 25 59-800 Lubań.
METALCHEM	Oświęcimska 121 45-643 Opole.
OLEŚNICA	Moniuszki 20 56-400 Oleśnica.
PAFAWAG	Pstrowskiego 12 53-609 Wrocław.
POLFLANSZ	Biała 5 86-006 Białe Błota.
PTKiGK	Wolności 337 41-800 Zabrze.

ZAMET	Zagórska 83 42-680 Tarnowskie Góry.
ZASTAL	Sulechowska 4a 65-119 Zielona Góra
ZNTK PKP	Zygmunta Augusta 11 85-082 Bydgoszcz.

b. REPAIR DEPOTS etc.

BUDEX	Sobieskiego 9 42-200 Częstochowa.
GDAŃSK	Siennicka 25 80-958 Gdańsk.
LUBAŃ	Lenina 25 59-800 Lubań.
OLEŚNICA	Moniuszki 20 56-400 Oleśnica.
PKP	Robocza 4 61-538 Poznań.
PTKiGK	Wolności 337 41-800 Zabrze.

ZNTK PKP	Boh. Stalingradu 35 73-110 Stargard Szczeciński.
ZNTK PKP	Wyspiańskiego 3 33-310 Nowy Sącz.
ZNTK PKP	Zygmunta Augusta 11 85-082 Bydgoszcz.

APPENDIX U

MAJOR FABRICATORS IN POLAND.

AGROMET.	Wolności 5/7 63-500 Ostrzeszów.
BUDIMOR.	Marynarki Polskiej 59 80-557 Gdańsk.
BUDOKOR.	Elbląska 14 01-737 Warszawa.
BUMAR ŁABĘDY.	Legionów 22 34-100 Wadowice.
CORPEX.	B.Krzywoustego 37 84-300 Lębork.
ELMOR.	Lęborska 24 77-100 Bytów.
ENERGOMONTAŻ-ZACHÓD.	Racławicka 15/17 53-149 Wrocław.
ENERGOPOL-7.	Sienkiewicza 22 60-959 Poznań.
FADOM.	Zwycięstwa 79 15-703 Białystok.
FAMAK.	Fabryczna 5 46-200 Kluczbork.

INSTAL.	Swojczycka 38 59-965 Wrocław.
METALEX.	Zawadzkiego 4a 76-200 Słupsk.
MOSTOSTAL.	Wołowska 70 60-167 Poznań.
	Skopenki 25a 37-450 Stalowa Wola.
	Poznańska 41 62-400 Słupca.
POiE.	23 Stycznia 26 86-300 Grudziądz.
POLMO.	Okulickiego 7 38-400 Krosno.
STAL-CHEMAK	Starzyńskiego 5 08-110 Siedlce.
STALOWA WOLA.	Os.Energetyków 20 27-450 Stalowa Wola.
ZAMTAL.	Staszica 1 26-200 Końskie.