JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
MINISTRY OF ECONOMY
THE REPUBLIC OF POLAND

THE FOLLOW-UP STUDY ON RESTRUCTURING PLAN OF ENTERPRISES CONTROLLED BY THE STATE IN THE REPUBLIC OF POLAND

FINAL REPORT

AUGUST, 1998

SYES CO., LTD.

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PREFACE

In response to a request from the Government of the Republic of Poland, the Government of Japan decided to conduct a follow-up study on Restructuring Plan of Enterprises controlled by the State, and entrusted the study to the Japan International Cooperation Agency (JICA) (The original study was conducted from August 1996 to March 1997.).

JICA sent to Poland a study team headed by Mr. Watanabe, SYES Co., Ltd. and constituted by members of SYES Co., Ltd. from February 28, 1998 to March 27, 1998.

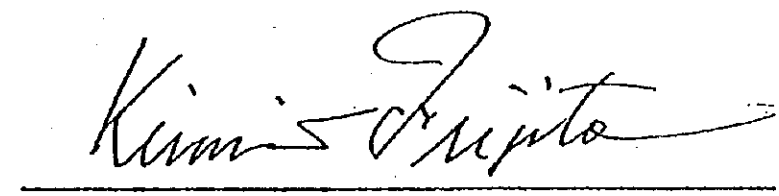
The team held discussions with the officials concerned of the Government of Poland, and conducted a field study at the study area.
After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the furtherance of the restructuring of Polish companies controlled by the State and to the enhancement of the friendly relations between Poland and Japan.

I wish to express my sincere appreciation to all those who participated in this study project for their close cooperation extended to the team.

August 1998

Kimio Fujita
President
Japan International Cooperation Agency



August, 1998

Mr. Kimio Fujita
Japan International Cooperation Agency
Tokyo, Japan

Dear Mr. Fujita,

Letter of Transmittal

We are pleased to submit to you the final report on the Follow-up Study on the Restructuring Plan of Enterprises Controlled by the State in the Republic of Poland.

The study team conducted this study starting from February 1998 under the contract with JICA. The study team has made recommendations to the Government of Poland and the enterprises controlled by the state in Poland based on our experiences obtained during the follow-up studies on the restructuring program for PZL-Mielec Engines Co. and other four enterprises which were chosen as model enterprises.

We would like to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs and the Ministry of International Trade and Industry for the generous support extended to the study team. We also wish to express our deep gratitude to the Ministry of the Economy, PZL-Mielec Engines Co., other four enterprises and relevant organizations in Poland, the Embassy of Japan in Poland and JICA Austria office, for their assistance and advice.

Very truly yours,

Akira Watanabe

Akira Watanabe
Team Leader
Study Team for The Follow-up Study on the Restructuring Plan
Of Enterprises Controlled by the State in the Republic of Poland
SYES Co., Ltd.

CONTENTS

1. Summary

Mielec Engines Co.

(1) In 1997, the following year when the JICA study was conducted, Mielec Engines Co. which was selected as a model enterprises in the study on the restructuring of enterprises controlled by the state in the Republic of Poland, has stepped toward its privatization goal as the successful achievement of its 5 years restructuring program .

(2) Among other items, the 5 year business plan which was formulated by the company with the advice of the study team was a major driving force for this success.

(3) The plant people have continued their KAIZEN activities.

The most visible output of KAIZEN is the exhibition of 400 sets of machinery which have been repainted as a voluntary movement of workers.

Diagnostic study on 5 enterprises selected by the Ministry of Economy

(1)The team studied the current status and problem areas of enterprises in terms of their competitiveness in the EU market and their restructuring activities.

(2) The productivity of all enterprises remains at a low level due to various factors; namely the inventory, overproduction, processing imbalance, waiting time etc.

(3) There is retardation in their restructuring progress. One of the decisive factors is the leadership of the top management .

(4) The study team tried to organize small groups for 5 enterprises to start KAIZEN activities. This kind of technology transfer was well accepted and appreciated by the top management people and employees.

The study team's experience at the model company enabled them to conduct the technology transfer to other enterprises in such a short time.

Seminars

Two seminars took place at Mielec and Warsaw respectively. The success of Mielec Engines Co. and valuable experiences in the diagnostic studies for 5 enterprises made the seminar instructive for other state-owned companies.

About 40 people participated in each seminar. At Warsaw, top executives of all representative enterprises joined the seminar. The seminar focused on the following themes:

(1) Improvement of productivity by small KAIZEN team activities.

(2) Recommendations for the industry and the government to reform the automotive industrial structure by strengthening the auto motive parts sector

2. Introduction

2-1 Background of the Study

In March of 1996, the scope of work on the study on the restructuring plan of enterprises controlled by the state in the Republic of Poland was signed between the Japan International Cooperation Agency (JICA), and the Polish Ministry of Commerce and Industry (now the Ministry of Economy) and a model Company. The field studies were carried out in Poland by SYES Co., Ltd., in two stages between August and December in 1996. The final report of the study was submitted to the Ministry of Economy in March 1997.

The study team conducted analyses of the macroeconomic situation in Poland, the diagnoses on the model company in terms of the corporate management, finance, marketing, product development, production and formulation of a proposed medium- and long-term management plan for the company.

At the final meeting which took place in March 1997, the Ministry of Economy and the Mielec Engines Co. expressed their desire to have a follow-up program.

On December 11,1997, Mr. Tomasz Bryzek, a deputy director of the Ministry of Economy, requested the Embassy of Japan in Poland to conduct a follow-up program organized by JICA. Accordingly the JICA decided to implement such a follow-up study.

On February 11,1998, the Ministry of Economy selected 5 enterprises to be subjected to diagnostic studies. (Please refer Table2-1, Figure 2-1)

2-2 Objective of the Study

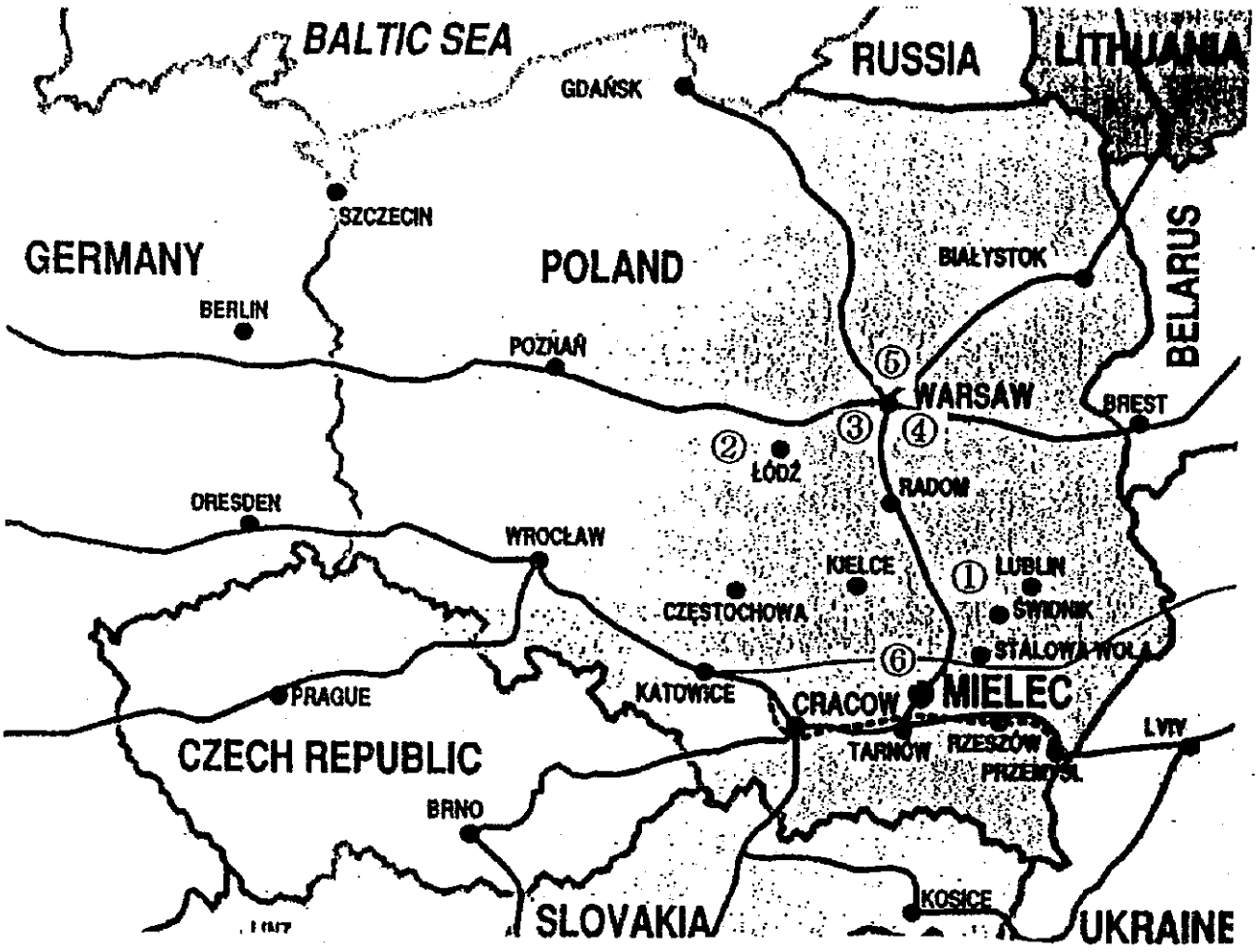
2-2-1 Follow-up of Mielec Engines Co.'s Restructuring Plans

Since March 1997, Mielec Engines Co. has been carrying out its own restructuring activities on the basis of the JICA report. The present work is an additional survey to evaluate the results thereof, diagnose any inadequacies and furnish guidance regarding the improvement of the results of such restructuring activities.

The study team confirmed the trace of progress in the restructuring plan by the model company since December 1996, particularly confirmation of specific measures concerning the product development, the plant operation and the investment in connection with promotion of that firm's medium- and long-term plans.

Table 2-1 Enterprises for Diagnostic Study

	Name Of Company	Products	Location
①	KRAŚNIKS.A, Fabryka Lodysk Tocznych	Roller BRG	Krasnik
②	POLMO ŁÓDŹ S.A. Fabryka Osprzetu Samochodowego	Carburetor,Compressor	Lodz
③	MERA—BLONIE Zaklady Mechaniczno-Procyzyjne		Blonie
④	TELECONTA	TeleComunication Relay	Warszawa
⑤	WUZETEM Warszawskie Zaklady Mechaniczne, PZL-WZM.S.A	Injection Nozzles	Warszawa
⑥	PZL-Mielec Engines Co.	Diesel engines, Gene-set Ambulance	Mielec



2-2-2 Simplified diagnosis of five selected enterprises

It was intended to make a simplified diagnosis of five selected enterprises in order to facilitate reinforcement of international competitiveness in manufacturing industries in view of Poland's upcoming join in the EU, to make proposals for strengthening of management policy, to improve productivity and product quality, and to carry out technology transfer by OJT on the shop floors of the plants.

Prior to the study team sent questionnaires to the enterprises. They provided the team with preliminary information through the answers to the questionnaires.

2-2-3 Seminars

Two seminars were undertaken as effective means to pervade study results to other enterprises, private consultants and government staffs.

The first seminar which took place at Mielec was addressed to people of Mielec engines Co., its affiliated enterprises, and two selected enterprises which the study team diagnosed. Major themes were productivity improvement by means of KAIZEN activities and the Total Productivity Maintenance.

The second seminar at Warsaw was conducted as a part of eight programs in the "The Industrial Weeks March 1998 " which was organized by JICA.

The study team delivered three presentations: recommendations to the Polish automotive industry sector and the government, KAIZEN activity by small teams and the quality & cost.

2-3 Team Members

Table 2-2

Name	Work Assignment	Diagnosis Assignment
AKIRA WATANABE	Leader Business Management I, Product Development	Group A of simplified company diagnosis
HIDEO TASHIRO	Production Technology, Production Management I	Group A of simplified company diagnosis
YASUO YAMAMOTO	Business Management II, Plant and Equipment Planning	Group B of simplified company diagnosis
NAOHISA MIYAKAWA	Production Technology, Production Management II	Group B of simplified company diagnosis

Mr. KAZUCHIKA SATO , a JICA development specialist in industrial management joined the team from March 16 through March 26,1998.

2-4 Study Schedule

Table2-3

	Date		Group A Watanabe, Tashiro	Group B Yamamoto, Miyakawa	Transfer and Stay
1	2/28	Sa	LV. Tokyo Ar. Warsaw		Warsaw
2	3/1	Su	Team Meeting, Meeting with JICA specialists in Warsaw		Warsaw
3	3/2	Mo	Ministry of Economy, Embassy of Japan, Move to Mielec		Warsaw-Mielec
4	3/3	Tu	Study on Mielec Engines Co.		Mielec
5	3/4	We	Ditto		Ditto
6	3/5	Th	Ditto		Ditto
7	3/6	Fr	Ditto		Ditto
8	3/7	Sa	Preparing reports		Ditto
9	3/8	Su	Move to LODZ	Move to Krasnik	
10	3/9	Mo	POLMO LODZ S.A.	Krasnik S.A	
11	3/10	Tu	Ditto	Ditto	
12	3/11	We	Ditto	Ditto	Move to Mielec
13	3/12	Th	Report to Mielec Engines, Preparation for Seminar		Mielec
14	3/13	Fr	Seminar I		Mielec
15	3/14	Sa	Preparation for reports		Mielec
16	3/15	Su	Ditto Move to Warsaw		Mielec-Warsaw
17	3/16	Mo	TELECONTA	MERA	Warsaw
18	3/17	Tu	Ditto	Ditto	Ditto
19	3/18	We	Ditto	Ditto	Ditto
20	3/19	Th	Preparation for Seminar		Ditto
21	3/20	Fr	Wuzetem		
22	3/21	Sa	Ditto		Ditto
23	3/22	Su	Ditto		Ditto
24	3/23	Mo	Seminar, Visit to Embassy of Japan		Ditto
25	3/24	Tu	JICA Warsaw Office,		Ditto
26	3/25	We	Ministry of Economy Lv. Warsaw	Lv. Warsaw	
27	3/26	Th	Visit JICA Vienna, Lv. Vienna	Ar . Tokyo	
28	3/27	Fr	Ar. Tokyo		

Note Interpreters Mrs. Anna Jachowicz, Mrs. Anna Ohmi, Dr. Roman Pawlak

3. Follow-up study of Mielec Engines Co.

3-1 The decisive turning point in 1997

In the year 1997, the model company made great strides toward its privatization.

1) Mielec Engines Co. was approved to join the Euro Park Mielec in 1997.

It was made possible by the turnover growth rate of more than 15% at the time of application to the Euro Park Mielec.

Company's 5 year business plan satisfied the following requirements:

Maintainance of at least 700 employees

Investment of more than 5 million Zt.

Other four excellent firms in the WSK Mielec group such manufacturers of diesel injection pumps, Boeing's aircraft doors, plastics etc. were also approved to join the EPM.

2) Borrowing

The company can borrow money for its investment from WTI, a deposit and investment bank which is 100 % owned by the Bank of Lublin and of the British capital

The WTI was established in early 1997.

Amount of total borrowing 3 to 4 million Zt.

3) Stock holding share

	Current	Future
BDK (The Bank of Lublin)	48.8	40.8
WSK (Mielec parent firm)	21.3	21.3
ARP(Industrial Development Agency))	19.8	18.9
WTI	0	8.8

(2) Other major events in 1997

It must be noted that the continued marketing effort of the company made it possible to regain the markets in the Eastern countries which the Company lost at the collapse of COMECON since 1989.

1) Realization of the new series of generator-sets of power ranges; 30KVA, 40KVA, 55KVA and 70KVA.
2) Production of pump-sets for principal headquarters of state fire brigades.
3) Manufacturing of ambulances using FIAT DUCATO 10 model.
4) Entry in the list of qualified subcontractors of OPEL Co. : machining of cylinder heads for engines.
5) Expansion of supplying items for KAMAX Co. which is one of the largest truck manufacturers of CIS.
6) Development of distribution networks for generator sets of small power range.
7) Acquisition of EURO-2 certification for engines destined for city-bus.

8) Production of prototypes of generator sets driven by bio-gas.
9) Start of a new testing department for engines
10) Introduction of budgeting system in each production unit starting in the fourth quarter, 1997.
11) Completion of the integrated information system.
12) Completion of the preparation work considering the pre-audit of quality management system ISO 9001.
13) Contract for 200 engines for Turkish customers.

Strategy for 2001

The company has formulated its own strategy for 2001.

The core portion of the strategy consists of the following items:

1) Attainment of the competitive position in the domestic market
2) Enhancement of the overseas trade
3) Strengthening of marketing activities
4) Modernization of production system to improve productivity
5) Elevation of employee's motivation
6) Discipline for the financial consciousness of employees
7) Development of the flexible organization to solve problems by team activities
8) Strict execution and control of the business plan
9) Development of Euro-3 engines. The target production capability of engines will be 3,500 per year.

Fig. 3-1 shows the company's projection for engine production as compared with JICA plan.

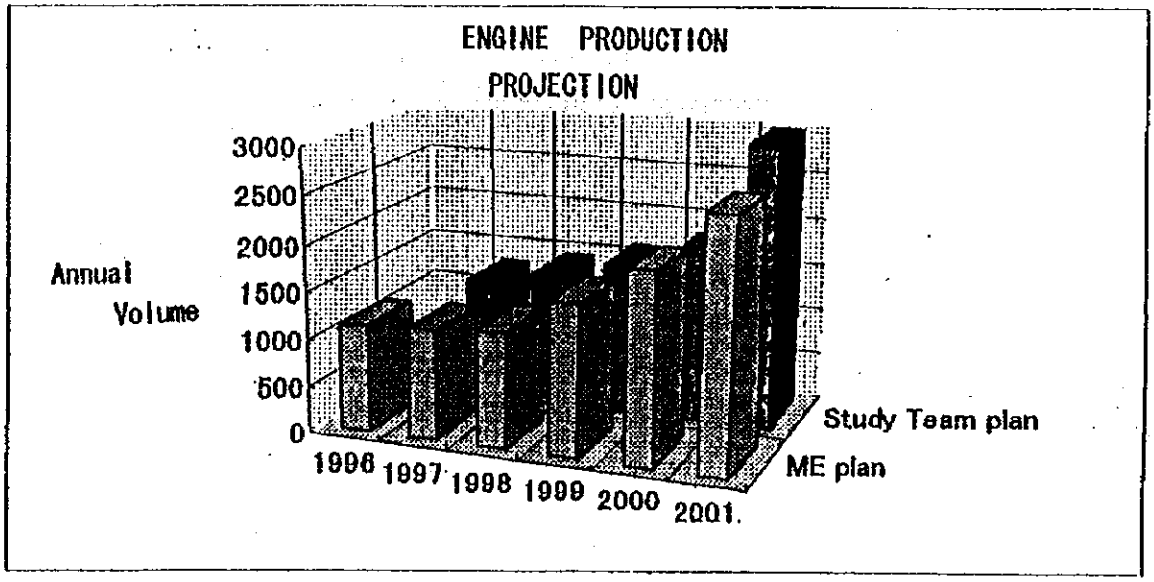


Figure 3-1

3-2 Product engineering

3-2-1 Euro2 engine

This year the Company obtained the Euro 2 certification for its horizontal engine SW11/302/1 for the bus installation. It followed the vertical model MD11E2 ECO-Engine. The emission level of EURO regulations are as follows:

Table 3-1

	MD11E	EURO 2	EURO 3
HC	0.85	1.10	0.6
CO	2.29	4.00	2.0
Nox	6.28	7.00	5.0
PM	0.14	0.15	0.1

Despite Company's readiness for the production of new engines, the start of production will be in January 1999 due to the delay of customer's (Jeltz) certification program. Nevertheless, the ECO Engine is the first Polish diesel engine with the EURO 2 certification.

3-2-2 Euro 3 engine

Due to the late start of production of the Euro 2 engines, the EURO-3 program is retarded.
However, Mielec Engines Co. is investigating future market demand for heavy duty diesel engines in Poland and overseas.
Although the Company succeeded in developing Euro 2 engines by the strong support from Crakow Institute of Technology, and by financial incentives from KBN, the Company intends to develop the Euro 3 engine by their own effort. However, due to its high R&D and facility investment cost, the feasibility of the project must be carefully studied. When it implements the project, a new strategy is necessary such as to find a strategic alliance.

3-2-3 Other products

Some new products as generators to be installed on the chassis, new small series generator sets, bio-gas engines, NCC engines have been developed for sales in 1997.

3-2-4 Engineering management

A new engine test bench with a Laboratory Automation system is about to be completed. This will make engine test and design work more efficient.

The product engineering office is renovated and equipped with new CAD/CAM terminals.

3-3 Production facility/investment; Current status, problems and recommendations

3-3-1 Current facility

Table 3-2

	Product	Number of Machine
Machining	Cylinder Block	58 Special Purpose
	Cylinder Head	25 Special Purpose
	Connecting Rod	20 Special Purpose
Assembly	Slat conveyer	

1) Since machines are linked by conveyers and their distance is so far, operators can only handle one machine at one time.
2) Excessive cylinder blocks are supplied to the assembly line.
3) The assembly line is too long. Improvement is necessary for the parts store shelf location and its dust proof.
4) A new machining center was planned to be installed in March 1998.The cost of which is 270,000Zt. With another existing machining center, the company plans to machine cylinder heads of a diesel engine model which are ordered from Opel at a rate of 170,000 unit a year. This will improve the plant operation.

3-3-2 Recommendations for the current manufacturing system

1) To maximize plant operation, it is recommended that increase in-house manufacturing crank shafts and cam shaft have to be manufactured in house..
2) Tool center
   The tool storage is not well organized.
3) The machining loss time is saved by supplying tools by the tool center staff according to the tool exchange program rather than carried by machine operators to the tool center.
4) The preset is necessary to eliminate the stop time of multiple spindle/drill transfer machines. The preset method for multi spindle machinery is a state- of-the-arts.
5) Limit gage management
   The useful life period should be indicated on the gage, preferably by color indication.

3-3-3 Investment plan

1) Euro-2 engines will be manufactured from 1999.

The company will install 4 machining centers to replace 11 old special purpose machine.

This could make manufacturing more flexible, thus enabling manufacturing Euro-3 engines in future.

3-4 Production: Current status of production department and recommendations concerning further restructuring plan

3-4-1 Engine machining plant

(1) Current status

The number of engines produced in 1997 was 100 pieces per month as equal as in 1996.

In March 1998 after concluding the contract with the Turkish company, 130 engines were produced monthly,

The monthly number of engines produced will be increased up to 140 pieces this year.

The defect percentage of cylinder block and head casts decreased as follows:

	1996	1997
Cylinder blocks	about 30%	less than 20%
Cylinder heads	about 30%	less than 7%

The above results were achieved due to the cooperation of the supplier (Rzeszow), who implemented KAIZEN activities at their factory. Rzeszow Company received complaints from Mielec Engines Company before. However, the foundry modified their casting method, which resulted in the product quality improvement. Besides, Mielec Engines Company informed Rzeszow Company of their intention to change this cast supplier to other ones unless they do not reduce the percentage of defects. It was a strong stimulation to the supplier and the results are remarkable.

The production at the cylinder block line is continued at the rate of 10 units per day. Thus the production plan revised at the time of the previous study is maintained. The number of processed pieces was 30 per day. Thus it remains at a satisfying level.

The number of the complete engine stock has remarkably decreased. For instance, engines produced for Jelcz Company are shipped there regularly 4 times a month at the fixed dates. Therefore, the number of pieces in stock amounts maximum to three day production. However, it often happens that engines for export are stored for longer periods of time. (So far the engine stock used to amount to 1,5 month production). Thus the results of kaizen activities are satisfactory.

The number of works in process at the cylinder block line has been maintained at 30 per day, but at

the beginning of the engine assembly line there is a stock of about 30 pieces. This problem is still caused by the shortage of certain parts (the delay in arrival of cylinder liners). The kaizen team has continued its efforts to solve this problem in vain because of the often overdue payments. This problem needs further consideration.

3S[1] activities at the cylinder block line have given a good start to the enormous job of painting all the machines (about 400) at the cylinder head line and part processing line as well. The repainted machines look as good as new. It is a great success of the circle activities. Every Saturday for about 6 months, all workers did the job competing with each other. The workers themselves completed the change of mentality process at their own accord. They were obviously praised by the company management (their former president) and visitors. They have become proud of their workplace. All that led to the great success of circle activities.

The 3S circle activities have been continuously practiced. The Study Team believes circle members need a next objective to achieve.

(2) Recommendations for further restructuring plan

"Problems with products always generate from the production plant, the source of the company achievements lies in the production plant as well".

The production department obviously operates with the support of its employees. Therefore a change of the employees' mentality and stimulation their ambition is necessary for the development of the company. The company management ought to think of a good employee stimulation policy at the right timing. Recommendations for the further restructuring plan, especially with regard to production plan improvement are offered as below:.

1) Continuation of circle activities

Since the 3S movement started, the employee's mentality and enthusiasm have improved. In the implementation of the circle activities the selection of a theme and its recognition among the members are vitally important.

The subject is an energy saving program. For instance, two following points came to our attention while we visited the factory on March 3 and 4,1998.

(a) The lights at the cylinder block and head lines, as well as at the engine assembly line were unnecessarily bright. That is obviously a waste of electricity. The main switch should be off. If it is really too dark, each machine should be equipped with the individual lighting system. However, in order to do so the system of electric wiring must be partly changed.

(b) While visiting the production site, we could hear the sound of compressed air leakage in

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[1] . 3S is the first 3Ss,Seiri, Seiton and Seisou, of the 5S. 3S is a first step before the 5S is mastered.

several places (about 20 places altogether). It seems that effect as letting the compressed air leaks out for 24 hours. This is an enormous waste. Every day after work the main valve of the machine should be turned off or the operators should repair the places of leakage. It doesn't have to be done by the maintenance people, but can be done by the machine operators after they receive a proper instruction.

The team recommends that all the circle members make even the smallest improvements.

2) Establishment of cost centers

This subject concerns the circle activities whose objective is to reduce the waste by controlling the cost. This problem has been mentioned during our previous visit but as it has not been sufficiently explained, nothing has been done about it. The finance and accounting department is not the only one responsible for the problem of production cost.

The production department itself should make the budget planning, try to carry it out and reconsider it. This system can work successfully according to the "plan, do, check, action circle".

Since computerization at Mielec Engine Company is already implemented at the top level management, it is advised that computers be introduced to every day work of section managers, foremen as well as the machine operators as soon as possible.

In Japan every effort is made to minimize the waste by the combined efforts of management and employees including assistant foremen.

2) Maintenance Department

① Current status

The Preventive Maintenance has been applied to the cylinder block line. In the table below the data taken before and after implementing Preventive Maintenance have been compared.

After analyzing the above data the following has become clear:

. The monthly breakdown time decreased by 32% which is a good result.

. On the other hand, the number of breakdowns increased.

. The break down time of four main machines decreased remarkably. It is almost certain that it is due to the active assistance of the top level management.

. On the other hand the types of breakdown almost haven't changed. (the types of breakdown which occur repeatedly haven't decreased)

The maintenance system has hardly been changed. There is still a lot of room for continuous improvement. The Preventive Maintenance system is not simple.

② Recommendations for further restructuring

As it has already been explained during the previous Maintenance Seminar, in order to implement Productive Maintenance the following four functions are necessary:

Inspection Planning, Maintenance Technique, Repair and Coordination.

At present the biggest problems of Mielec Engine Company are the following:

Functions	Present Status	Future
Inspection and Planning	1 person (additional post)	1 person (full time) cylinder block and head line 1 person (full time) all other equipment
Maintenance Technique		1 person (full time) to reduce breakdown number and hours to modify for easy repair and inspection
Repair	5% Maintenance Group only	10-15% operator will join maintenance people and will do the repair job with maintenance people
Coordination		2 people (section manager and general manager, but this is an additional post They must control four functions

So far even no person has been appointed as a maintenance engineer. A team consisting of a maintenance engineer and an inspector will surely be successful, making maintenance improvements as seen in the following 3 points.

. The number and time of breakdown will decrease. The monthly objective of 8,8 hours/month is possible.

. Decrease of repeated breakdown (mechanical, electric, hydraulic, compressed air)

. Improvement of the operator maintenance skill (by training)

Even the best maintenance planning will not reduce the amount of breakdowns if the number of maintenance employees is too small and the employees' abilities are inadequate to do all planned repairs.

As hiring new repair specialized employees would be against the management policy of Mielec Engine Company, it is advisable to instruct the skilful operators how to do the repairs, so as they become able to do the maintenance work. On fixed repair days everybody should participate in doing maintenance jobs.

Days are over when all the maintenance work is done by maintenance specialists.

Mielec Engine Company needs to invest in equipment and renovate its machines. It is important to purchase machines which are easy to operate and seldom breakdown. At the time of purchase the expertise of maintenance engineer becomes an extremely important factor. Buying a cheap machine often leads to the waste of money. It is necessary for the company to have an experienced maintenance engineer in order to avoid such a waste.

From the above it can be said that the maintenance activities are important for the future activities of the factory. Improvement of maintenance technology and maintenance system requires persistent efforts.

"We don't live for today only, there is future to think of".

3-4-2 Engine Assembly Department

(1) Current status

The Kaizen team still exists and its activities are continued.

However, it is not continuos but occasional and not team-wise

Achievements for the past one year:

1) Improvement in quality and delivery from the foundry:

Casting failure rate: Cylinder block 30%('96) → less than 20%('97)

Cylinder head 30%('96) → less than 7%('97)

The leadership of the top management and staff in charge of the products against the supplier contributed this improvement.

The foundry specialist also started to improve die designs.

The mutual collaboration works increased the mutual trustworthiness.

2) Short supply of parts for the assembly line

No statistical data are available to judge the actual improvement of the team activity. There is difficulty to solve some worse cases. However, the general trend seems favorable. The following are the cases reported from the company:

- ✧ Mielec Co. (The supplier of pressed parts was regarded as one of the worst suppliers at the last study)

  Some critical manufacturing processes such as press and paint works of parts are difficult for the suppliers, because they can not meet the quality requirement. Therefore, these work is done in house at Mielec Engine Co. Some other parts are ordered from different suppliers.
- ✧ Advanced payment by the Company for a supplier which suffers from money supply.
- ✧ Relaxation of payment delay of 14 days to 30 days in favor of a supplier
- ✧ Improvement in the ordering procedures such as noticing 3 months in advance, current month plan and immediate notice of change. It was determined at the last study as the improvement activity.
- ✧ Supply shortage problem of Mielec injection pump manufacturer is completely solved.
- ✧ During the team's visit to the plant, the engine assembly line was shut down due to machinery failure of cylinder heads at a supplier. Mielec Engines people still suffer from such an
- ✧ incidental troubles of diversified causes.
- ✧ Even though the records of the supply shortage is exhibited on the board to attract attention of the relevant people, their analysis and necessary actions are not practiced. However, such

improvement as providing container of small pieces for assembly, attachment of the parts numbers or production volume control charts have started.

A paint booth to increase their in-house job was fabricated by themselves to reduce purchasing cost.

✧ Inventory in the form of intermediate and final products are reduced by means of a computer control system, and the monthly inventory data are early obtainable. Annual reduction rate of final products was about 10.3% in 1997. It is 22.5% when adjusted by the inflation rate.

(2) Problem

It seems that the improvement activity has brought out some visible outputs.

However, it is achieved by eagerness of the top management and limited number of employees in charge of the activities. The improved work should be standardized so that every body can do it.

(3) Recommendations

①To make a procedure to control the status of improvement activities

Example: Improvement suggestion system

- ✓ Preparation of the format for planning and follow up activities
  Application of a successful case to other activities having improvement potentiality
- ✓ Organization of a promotion office
  Expansion of the education and training systems
  Commendation enrollment of teams

② To make walk ways of the plant or assembly line side clean and encourage the workers to elevate their motivation to keep all the machinery clean and study by themselves. It takes one year to improve but one week to lose.

3-5 Recommendations

3-5-1 Evaluation

Evaluation by the study team is summarized as follows:

(1) Strength

- Mielec Engies Co. has already formulated its own strategy for 2001.

It is featured by a positive engine sales target which is carefully verified by market studies.

The company is creating the eastern market

The finance strategy and the investment program have turned positive and future oriented.

- The company has developed the Euro 2 engine by themselves. The company's long history brought forth this culture as an aircraft and diesel engine manufacture.
- The company has various end user products.
- The corporate organization is flexible, adaptive and agile for environmental change.
- The company can be proud of excellent human resources at different levels from executives to

the rank and file workers.

(2) Weakness

- Lack in systematic product planning
- Inter departmental linkage

3-5-2 Recommendations

The study team admires the company for its distinguished achievement in 1997.
However, in pursuit of its integrity, the study team made the following recommendations for the Company's executives on March 13,1998:

(1) In order to implement the 5 year business plan in terms of the cash flow which the study team formulated in collaboration with the company, the annual cost reduction of 5% is strictly required. Since the purchased cost amounts nearly 70% of the total material cost, its cost reduction is most critical and at the same time not as easy as in-house cost. It can not be implemented by business negotiation like bargaining but by more scientific means as the bench marking. The Value Analysis(VA) method is an example.

(2) The future vision and plan of the heavy duty diesel engine, in particular the post Euro 2 engine will destine the survival of the company. If the company fails in its product development, it may lead to withdrawal from the engine business.
The study team recommended that the company organize permanent steering committee to discuss and formulate the future diesel engine plan. In order that the corporate procedure for the product planning and marketing has to be established. This kind of procedure is required by ISO 9001. However, the 9001 activity with regard to the product planning seems to be not satisfactory. The company has to overcome this deficiency as soon as possible by promoting ISO 9001 activity as a minimum goal.

(3) It seems that the company will grow until 2001 if the macroeconomics predicted by the government works as planned. However, in order to materialize the company's grand plan, namely, " the company will be survived as a major player in the diesel engine market of the Central Europe with sufficient competitiveness for the market economy", the next corporate strategy and its action plans will be necessary.
In such a global economy era, in particular in the diesel engine manufacturing business, a strategic alliance of any kind will be necessary for the company's survival. The company has to establish its comparative advantage in the EU and its neighboring economic blocks mostly its eastern markets.

4. Summary of diagnostic studies for 5 selected enterprises

4-1-1 Strength found by diagnostic studies

Five selected companies reacted positively to accept the results diagnoses by JICA team. By the strong leadership of the top management they are proceeding toward a common goal, privatization.

(1) POLMO ŁÓDŹ

1) The company obtained the ISO 9001 certification from German TUF
   Procedures prescribed by ISO 9001 are faithfully practiced at the production, product engineering and marketing & planning departments respectively.
2) The corporate quality philosophy and some other basic concepts and methodologies of the quality control such as the definition of 5S and control charts are exhibited at many places to attract employee's attention.
3) Production plans for one year, one three quarter, one month, ten days and daily are reviewed and updated every month.
4) The company puts emphasis on the employees education according to the program.

(2) FLT KRAŚNIK

1) ISO 9001 certification obtained through the practice of manufacturing process and machinery
2) Very low defect rate of ball bearings of 4~30mm, 3PPM.
3) 45% of products are exported to advanced industrial countries.
4) The company operates the integrated in-house production from raw material processing to final product

(3) TELECONTA

1) The company operates the integrated in-house production from raw material processing to final products.
2) Well experienced employees
3) Some parts are of high precision
4) Most parts are labor integrated and high value added

(4) MERA BŁONIE

1) One of the plants is an excellent assembly plant in term of working environment and well disciplined workers compared with other enterprises the study team visited. It seems to be made possible by the strong leadership of the plant manager.
2) The study team showed the company staff a video film on Kaizen activities. People comprehended easily the secrecy of the Kaizen..
3) People are eager to understand how to implement KAIZEN activities.

4) Procedures for ISO 9001 have been completed. Application period will be June 1998.
5) Supplying meter clusters to DAEWOO by Just -In -Time system.

4-1-2 Problems common to 4 enterprises

1) Most of them have already obtained or will obtain in the middle of this year ISO 9001 certificate. Although the procedures are well prepared, their practice is not so satisfactory according to the on site studies.
2) In some places, unsafe works are tolerated.
3) Obsolete facilities and equipment installed excessively before the collapse of the socialist regime are deteriorating productivity
4) Practice of 5S is insufficient: Poor maintenance of machinery, oil leakage from machinery, dirty floors and tips on the floor.
5) The line process balance is not adjusted, and the production volume in terms of customer's demand variation is not frequently controlled.
6) Waste time in jig and tool changes is too high.
7) Continuous KAIZEN activities are not conducted. People do not know how to implement them.
8) Lack of Preventive Maintenance due to the insufficient number of specialists in the maintenance department.

Table 4-1-1 shows a comparison of a productivity indicator for the representative companies. In general, the productivity level is about one tenth of the average value of Japanese small and medium enterprises of equivalent industrial scales. One of the decisive factors of this low productivity level is due to the loss of markets after the collapse of COMECON. However, by eliminating wastes in the manufacturing processes, the productivity will be doubled. Recent recovery in markets in particular in the Eastern countries and the domestic demand growth may contribute to the sales growth of these companies.

(3) Short term KAIZEN activities by small teams

Three enterprises conducted KAIZEN activities which are summarized in the table 4-1-2.
Even though the visiting time was too short, these enterprises are very cooperative to the study team in are an attempt to absorb practical method and knowledge through the OJT.

1) 5s is the basis of the plant KAIZEN activity. We start with 3S activities.
2) Elimination of waste: Energy saving (save electricity, lighting and air leakage)
   Appropriate allocation of workers for line process balance
   Line process balance control by production volume
3) Setting optimum inventory and its obedience: to have an awareness that having an excessive inventory is equal to keeping valueless idle money in the warehouse. To have a feeling of

guilty for having excessive inventory.

4) Reinforcing the maintenance system: In collaboration with maintenance engineers and inspectors
5) Plant managers have to walk around the shop floor to find out problems and to make suggestions to solve them.
6) Organize voluntary QC circles as a part of small team activities in order to motivate their mentality changes
7) Company-wide deployment of the suggestion systems: Establishment of promotion offices, acceptance, assessment and award systems

4-1-3 Conclusion

(1) Keep promoting KAIZEN activities through the company-wide campaigns.
   1) Promotion of plant employee's voluntary activities and eagerness of the top management
   2) Continuation begets power: incessant activities needed until achievement of the goal

(2) Labor-management collaboration
   1) KAIZEN does not mean personnel cut
   2) Effective use of excessive personnel for KAIZEN activities
   3) Transferring further excessive personnel for engineering and sales department for development of the firm
   4) It is most essential that these concepts should be understood by talking, adjustment and negotiations among the employees and management concerned.

Table 4-1-1 PRODUCTIVITY COMPARISON 1997

Enterprise	Turnover (Z1)	Number of Employee	Turnover (Upper column Z1) /No. of Employee
A	57,136,000	739	77,316 ¥3,332,459
B	41,625,834	714	58,300 ¥2,420,900
C	215,000,000	4,450	48,315 ¥2,077,545
D	11,800,000	169	69,822 ¥3,000,235
E	47,973,220	812	59,080 ¥2,540,440
apanese Auto Parts Industry	404,300,000,000	546,429	739,895
Total	¥17,384,909,000,000		¥31,815,478

Figure 4-1-2 Results of KAIZEN Circle Activities for the productivity improvement in Poland

Major Products of the Enterprise	NO of Employees	Themes of KAIZEN Activities	No of Circle Members	Start Date	Term	Reaction		
						Readiness	Activity	Output
Heavy Duty Diesel Engines	780	Reduction of in-process stocks in the cylinder block machining line (Line workers + Staff)	5	'96/9	9 Mon.	◎	◎	◎
		Reduction of assembly line parts supply (Line workers ; Staff)	4	'96/9	9 Mon.	◎	◎	◎
Ball/Roller Bearings	4,500	Reduction of fixture change time for three grinders for machining bearing laces (Line workers + Staff)	9	'98/3/10	3 Mon.	◎	ON-Going	NA
Telecommunication Relays	120	Study on a strategy for survival (Staff)	6	'98/3/17	★	○	ON-Going	NA
Mechanical/ Electrical Parts	800	Reduction of in-process stocks in the assembly line for effective use of workers and quality improvement (Lineworkers + Staff)	6	'98/3/17	★	◎	ON-Going	NA

Note ◎ :Excellent ○:Good ★:Until output will come out

4-2 KRAŚNIK

Company Survey Sheet

Sequential No.		Date of survey:	March10-12 , 1998	Name of survey personnel	HT,YY

	Item	Surveyed content
1	Name of company	FLT-KRAŚNIK S.A
2	Address	FABRYKA LOZYSK TOCZNYCH- KRASNIK
3	Telephone/fax:	TEL: 48-837-7441 FAX:48-837-7666
4	Established/Commence of operations:	Established: 1938 Commencement of operations: 9/15/1948
5	Capitalized at:	
6	Persons responsible for management:	President: ROMAN WERESZCZYNISKI Person in charge of production:ZBYSKAW DABRCWSKI
7	Situation regarding shareholders:	Owner: National Main shareholder(s): National
8	Number of employees	Total number: 4,440 Number of white-collar workers 790____ (those in technical positions2,560 ____) (Number of men:3,115) Number of blue-collar workers __3,660___ (those who are direct workers 2,000_____)
9	Building plot/building:	Plot area: Built area
10	Turnover	21,000,000 Zt
11	Product structure (percentages of sales)	Ball Bearing 4-30% Roller Bearing Inner dia max 270mm
12	Sales to (percentage of exports and countries exported to)	Domestic: 55% Automotive30% Agriculture,Steel Mine, Industrial Export:45%(Germany, France, UK, Netherlands, Czech, USA)
13	Amount of purchases	6,000,000 Zt
14	Purchased from	Domestic, Steel for balls from Germany,Italy and Czech)
15	Main equipment	Ball manufacturing 400 NSK,ASK Inner/outer lace cutting and forging 4, HATEBUUR(Germany) Turning and grinding 800, Assembly, Precision Inspection Power station, Waste water processing, Parts machining
16	Production footing	2,3 shift
17	Process divisions	Cold and hot processing, Machining, Assembly, Inspection
18	Problems/main items that need to be improved	No circle team activities, Poor 3S(as a precision parts manufacturer), Break down maintenance Starts circle activities taking above conditions into consideration
19	Other matters worthy of mention	ISO 9001 certification obtained, Defect rate of balls 3ppm Amount of investment in '95,'96, '97 is 5% of the turnovers Large factory lot, Integrated production from raw material to final product

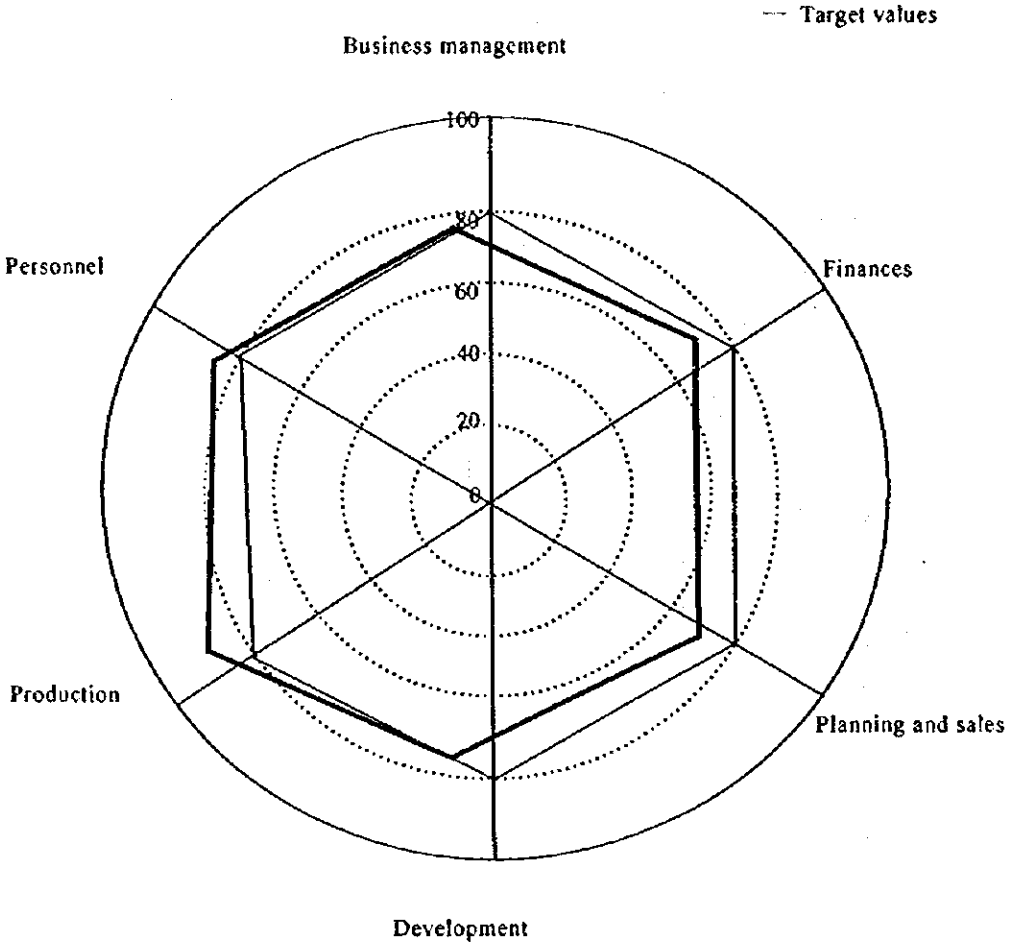
Company Diagnosis and Evaluation Table

Date of evaluation: March10-12, 1998

	Diagnosis items	Matters considered relevant judging from hearings, local surveys, etc.	Evaluation points: Excellent -- Good -- Fair				
Management and control	Leadership and character of the president	Positive and responsive to the team	✓	4	3	2	1
	Specialized technical capability of managers		5	✓	3	2	1
	Business strategy and medium- and long-term planning	Planning restructuring	5	✓	3	2	1
	Degree of enthusiasm regarding innovation	Positive to facility replacing with new machinery	5	✓	3	2	1
	Decision-making ability and judgment		5	✓	3	2	1
	Policy indicated by the president (regarding ISO-9001)	Excellent QC system	✓	4	3	2	1
			Average 4.3				
Planning and sales	Information collection and analysis ability (information on society, market demand, other companies, technology,etc.)	Regular meetings with dealers Frequent visit to customers	5	4	3	2	1
	Product planning capability (particularly capability to develop new products and price competitiveness)	Allocated 120 persons to make large scale rolter bearings	5	4	3	2	1
	Market research	Allocates 85 persons	5	4	3	2	1
	Situation regarding preparation of sales network	20 persons visit dealers in regular routine	5	4	3	2	1
	Situation regarding service	Aiming zero inventory, Challenging to JIT system	5	4	3	2	1
			Average 4.0				
Development	Number of technical personnel and technical level	120 people	5	✓	3	2	1
	Situation regarding acquisition of patents and other industrial technology rights		5	✓	3	2	1
	Situation regarding preparation of technical standards		5	✓	3	2	1
	Situation regarding use of external technology		5	✓	3	2	1
	Degree of use of CAD and CAM		5	✓	3	2	1
	Situation regarding preparations for ISO-9001 status	Well managed by process	5	✓	3	2	1
	Present situation regarding development facilities		5	✓	3	2	1
			Average 3.8				
Production	Production technology footing	production engineer 101	5	4	3	2	1
	Quality control system	QC center 217, line staff 233	5	4	3	2	1
	Situation regarding setting of work standards	Providing them by process	5	4	3	2	1
	Situation regarding production facilities	There are old machinery, replacing program being proceeded	5	4	3	2	1
	System and actual conditions of maintenance management	Concentrated maintenance, Early stage of the preventive maintenance	5	4	3	2	1
	Setting of standard times		5	4	3	2	1
	Cost management	Data are not analyzed and utilized	5	4	3	2	1

	Diagnosis items	Matters considered relevant judging from hearings, local surveys, etc.	Evaluation points: Excellent -- Good -- Fair				
Production	Situation regarding inventory management 39/ Activities for reduction of inventories	Zero policy and no inventory	✓	4	3	2	1
	Rejects depot	Small number of in process stocks	5	✓	3	2	1
	Situation regarding measures for dealing with deficiencies	Production engineers manage it	5	✓	3	2	1
	System and record to date of management of orders placed outside		5	✓	3	2	1
	Situation regarding tool management	Centralization system	5	✓	3	2	1
	Record to date concerning improvement activities	Zero, Start from now	5		3	✓	1
	Situation regarding implementation of "5S" campaign	Not good as a precision parts maker	5	✓	3	2	1
			Average 3.4				
Personnel	Personnel grooming system for office work and technical departments	'97 3,580,65,700hour according to its own program	✓	4	3	2	1
	Personnel grooming system for the shop floor department		✓	4	3	2	1
	Employee discipline	The studybtem made lectures twice 120 and 80 people group	5	✓	3	2	1
	Rate of employees staying with the company		5	✓	3	2	1
	Work system	2 and 3 shift	5	✓	3	2	1
	Situation regarding labor unions	4 unions, in good relation	5	✓	3	2	1
		Rotation 6% annually	Average 4.3				
Finance	Preparation and management of medium- and long-term profit plans	Annual and restructuring plan	5	✓	3	2	1
	Situation regarding preparation of financial statements		5	✓	3	2	1
	Level of rate of ordinary profit to turnover	Profit ration 1-3%	5	✓	3	2	1
	Wage level	1,0502t	5	✓	3	2	1
	Levels of research and development and plant and equipment investment	5% of the turnover in '95, '96, '97	5	✓	3	2	1
			Average 4.0				
		Overall evaluation points = sum of the average points / 79.6					
Other aspects	Content of concrete implementation of restructuring plans	Personnel cut of 1,500 in 3 years	✓	4	3	2	1
	Content of concrete implementation of plans for promotion of privatization	December 1998-January 1999	5	✓	3	2	1
Other matters worthy of mention							

Summary of Results of Evaluation of the Company _KRAŚNIK S.A.



Explanation of Content of Overall Evaluation

Strengths	ISO 9000 procedures well broken down by process and machine Low defect rate of bearing balls 3PPM High ratio of extorting to advanced countries Manufacturing of large roller bearings Meeting small lot of various models production (180 models() Higher investment to replace machinery The integrated production(high value added) Good human resources Well constructed infrastructure Direct sales to domestic customers
Weaknesses	Obsolete machinery Higher % of indirect workers No circle team activities. It just started on March 10 with 250 participants from P-8(production department) Poor 3S Many trivial problems, in other words, many themes to be improved
Problems	Over capacity, Privatization program targeted by December, 1998 to January 1999 High cost of land lease payment Difficulty to find a business partner
Other aspects	Needs to increase export to ex-USSR block, southeast Asia, and China The team recommended utilization of the trade company for sales promotion

4-3 POLMO ŁÓDŹ

Company Survey Sheet

Sequential No.		Date of survey:	March9,10,11, 1998	Name of survey personnel	NM,AW

	Item	Surveyed content
1	Name of company	POLMO ŁÓDŹ Co.
2	Address	PL 93-126 ŁÓDŹ 99 Przybyszewskiego str.
3	Telephone/fax:	TEL: 42/84 65 03 FAX:42/81 43 36
4	Established/Commence of operations:	Established: Commencement of operations: 1908
5	Capitalized at:	38,623,745 zt
6	Persons responsible for management:	President: Mr. Jerzy Kujawa Person in charge of production:
7	Situation regarding shareholders:	Main shareholder(s):NIF 312 PIAST
8	Number of employees	Total number: 714
9	Building plot/building:	Plot area: Built area:
10	Turnover	45,000,000 zt
11	Product Sales structure	Compressor:42%, Carburetor 38%,Fuel pump 14%
12	Customers (percentage of exports and countries exported to)	Wholesale: 60%, OEM: 38%, Retail: 2% Export 10%:Germany,France,Belgium,Columbia, UK, Hungary, Slowenia, Czech, China, South Africa, Argentina, Bulgaria Spain)
13	Amount of purchases	16,800,000 zt
14	Purchased from abroad	None
15	Main equipment	Machining, Automatic Machining, Machining of Fluid-Flow Elements, Plastic Working, Thermal and Treatment
16	Production footing	I shift, Partly 2 Shift
17	Process divisions	Assembly, Machining
18	Problems/main items that need to be improved	The firm has well established ISO 9001 procedures and people understand what to do. But they do not know how to do. Practice is they have to do.
19	Other matters worthy of mention	1) Useless land and building they have to sell out 2) Carburetor for engines of over 600 cc will be no more sold in near future. Current production share of 38% has to be replaced by other products.

Company Diagnosis and Evaluation Table

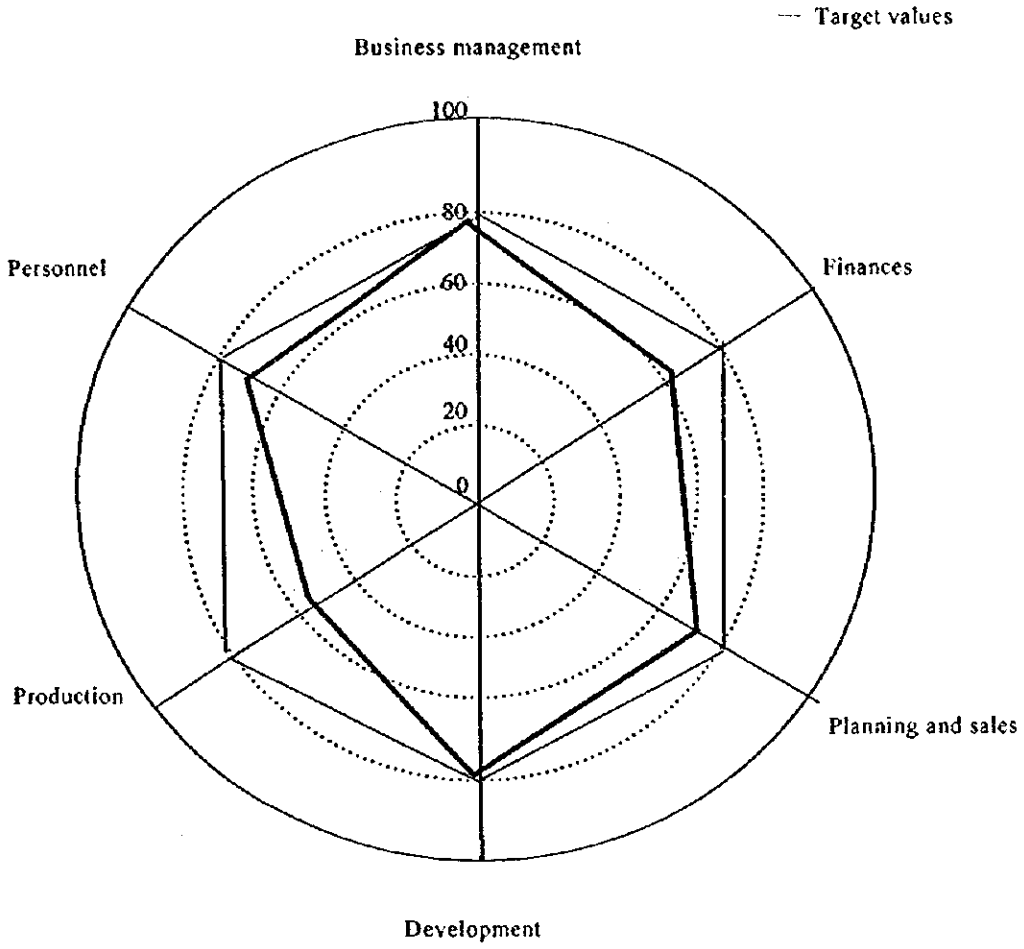
Date of evaluation: March , 1998

	Diagnosis items	Matters considered relevant judging from hearings, local surveys, etc.	Evaluation points: Excellent -- Good -- Fair				
Management and control	Leadership and character of the president	Competent executives	5	✓	3	2	1
	Specialized technical capability of managers	Conservative	5	4	✓	2	1
	Business strategy and medium- and long-term planning	Formulated the corporate strategy in 1997	5	✓	3	2	1
	Degree of enthusiasm regarding innovation	Moerate	5	4	✓	2	1
	Decision-making ability and judgment	Cautious	5	4	✓	2	1
	Policy indicated by the president (regarding ISO-9001)	Well prepared	5	✓	3	2	1
			Average 3.3				
Planning and sales	Information collection and analysis ability (information on society, market demand, other companies, technology,etc.)	Try to collect customer's needs	5	✓	3	2	1
	Product planning capability (particularly capability to develop new products and price competitiveness)	Good practice of ISO 9001	5	4	✓	2	1
	Market research	Well studying EU market	5	✓	3	2	1
	Situation regarding preparation of sales network		5	✓	3	2	1
	Situation regarding service	Good service for compressors	5	✓	3	2	1
			Average 3.8				
Development	Number of technical personnel and technical level	47 people, Competent engineer	5	✓	3	2	1
	Situation regarding acquisition of patents and other industrial technology rights	Patent acquisition '95 2, '96 2	5	✓	3	2	1
	Situation regarding preparation of technical standards		5	✓	3	2	1
	Situation regarding use of external technology	Testing	5	4	✓	2	1
	Degree of use of CAD and CAM	12 terminals, Better than average	5	✓	3	2	1
	Situation regarding preparations for ISO-9001 status	Took certificate in Dec,'97 It took 4 years	5	✓	3	2	1
	Present situation regarding development facilities		5	4	✓	2	1
			Average 3.3				
Production	Production technology footing		5	4	✓	2	1
	Quality control system	Good practice of ISO 9001	5	✓	3	2	1
	Situation regarding setting of work standards	Good practice of ISO 9001	5	✓	3	2	1
	Situation regarding production facilities	Low operation due to low level sales, Need more maintenance	5	4	3	✓	1
	System and actual conditions of maintenance management	Separated to subsidiary firm for the restructuring (24 people)	5	4	✓	2	1
	Setting of standard times	No system for assembly lines	5	4	3	✓	1
	Cost management	Managed by sales department	5	4	✓	2	1

	Diagnosis items	Matters considered relevant judging from hearings, local surveys, etc.	Evaluation points: Excellent -- Good -- Fair				
Production	Situation regarding inventory management Activities for reduction of inventories	Inventory taking at every 3 months, Monthly data control Not good.	5	✓	3	2	1
	Rejects depot	Well managed	5	✓	3	2	1
	Situation regarding measures for dealing with deficiencies	QC methods, data control are well practiced	5	4	✓	2	1
	System and record to date of management of orders placed outside		5	4	✓	2	1
	Situation regarding tool management	Separated to subsidiary company	5	4	✓	2	3
	Record to date concerning improvement activities	Line imbalance, Low operation volume	5	4	3	✓	1
	Situation regarding implementation of "5S" campaign	Well demonstrate for education purpose but people do not know how to practice	5	4	✓	2	1
			Average 2.9				
Personnel	Personnel grooming system for office work and technical departments		5	4	✓	2	1
	Personnel grooming system for the shop floor department		5	4	✓	2	1
	Employee discipline	Due to low plant operation not as good	5	4	3	✓	1
	Rate of employees staying with the company		5	4	✓	2	1
	Work system	1 shift (some 2 shift)	5	4	✓	2	1
	Situation regarding labor unions	Good	5	4	✓	2	1
			Average 2.8				
Finance	Preparation and management of medium- and long-term profit plans	Well prepared	5	✓	3	2	1
	Situation regarding preparation of financial statements		5	✓	3	2	1
	Level of rate of ordinary profit to turnover	Deficit	5	4	3	✓	1
	Wage level		5	✓	3	2	1
	Levels of R&D Investment plant and equipment investment	3% 5% (1998)	5	✓	3	2	1
			Average 3.0				
		Overall evaluation points = sum of the average points / 63.6					
Other aspects	Content of concrete implementation of restructuring plans	People understand problems	5	✓	3	2	1
	Content of concrete implementation of plans for promotion of privatization	The company knows what to do.	5	✓	3	2	1

Other matters worthy of mention
The study team showed a video tape for plant managers and other staffs. The video shows one of the largest carburetor makers in Japan about its productivity improvement.
The team try to apply U-line system for the assembly line employing U-line system. Implementation of the proposal from the study team was not realized during the visit.
The study team pointed out the plant safety and the 5S .

Summary of Results of Evaluation of the Company _POLMO ŁÓDŹ



Explanation of Content of Overall Evaluation

Strengths	Share hold by PIAST #12 NIF Well planned the strategy foe 2001 ISO 9001: well established cooperate procedures Variety of products with high value added Skilled human resources Exhibition of quality activities Well practiced statistical quality control Positive restructuring plan and its practice
Weaknesses	Negative legacy such as unnecessary land and buildings. Production over capacity Termination of carburetor production (for over 600cc engines) Manufacturing line process imbalance. This affects vitalization of plant people
Problems	Lower productivity Imbalance between processes Less flexible manufacturing system Insufficient practice of 5S
Comment	✓ The company can be excellent by its own exertions when its weakness will be conquered by its restructuring plan. ✓ The company needs more vitalization to enhance Kaizen activities. Employees have to be motivated by strong leadership of top management.

4-4 MERA-BŁONIE

Company Survey Sheet

Sequential No.		Date of survey:	March 16-18 , 1998	Name of survepersonnel	NM,YY

	Item	Surveyed content
1	Name of company	MERA—BLONIE
2	Address	Btonis
3	Telephone/fax:	TEL: 48-72-725-3555 FAX:
4	Established/Commence of operations:	Established:1953 Commencement of operations:1953
5	Capitalized at:	1,458,571.43 $
6	Persons responsible for management:	President: Person in charge of production:
7	Situation regarding shareholders:	Owner: Stata Main shareholder(s):
8	Number of employees	Total number: 1,777 Number of white-collar workers299 ____ (those in technical positions 79 ____) Number of blue-collar workers 47
9	Building plot/building:	Plot area: 120,0008 ㎡ Built area: 46,000 ㎡
10	Turnover	16,726,000$ (1997)
11	Product structure (% of sales)	Central lock 0.6% Parking Meter 0.4% Public Pay Phone 47.9% Sub-contract Machining 30.3% Cash Register 20.4%
12	Sales to (% of exports and domestic)	Export 2.5% France, Netherlands, USA ,Sweden
13	Amount of purchases	12%, Intermediate product 25%
14	Purchased from	Liemel, PAPAL: Poland Johnson: Japan Plastic material :GE Europe
15	Main equipment	Chalmers(Swiss),Raskin(Swiss), 2 M/C(Japan) Electro-discharge process machine
16	Production footing	1 shift, Partly 2 shift
17	Process divisions	
18	Problems/ main items that need to be improved	Cost control Worse 5S in press, machine shop Plant KAIZEN
19	Other matters worthy of mention	Poor environmental protection, Privatization in mid 1998

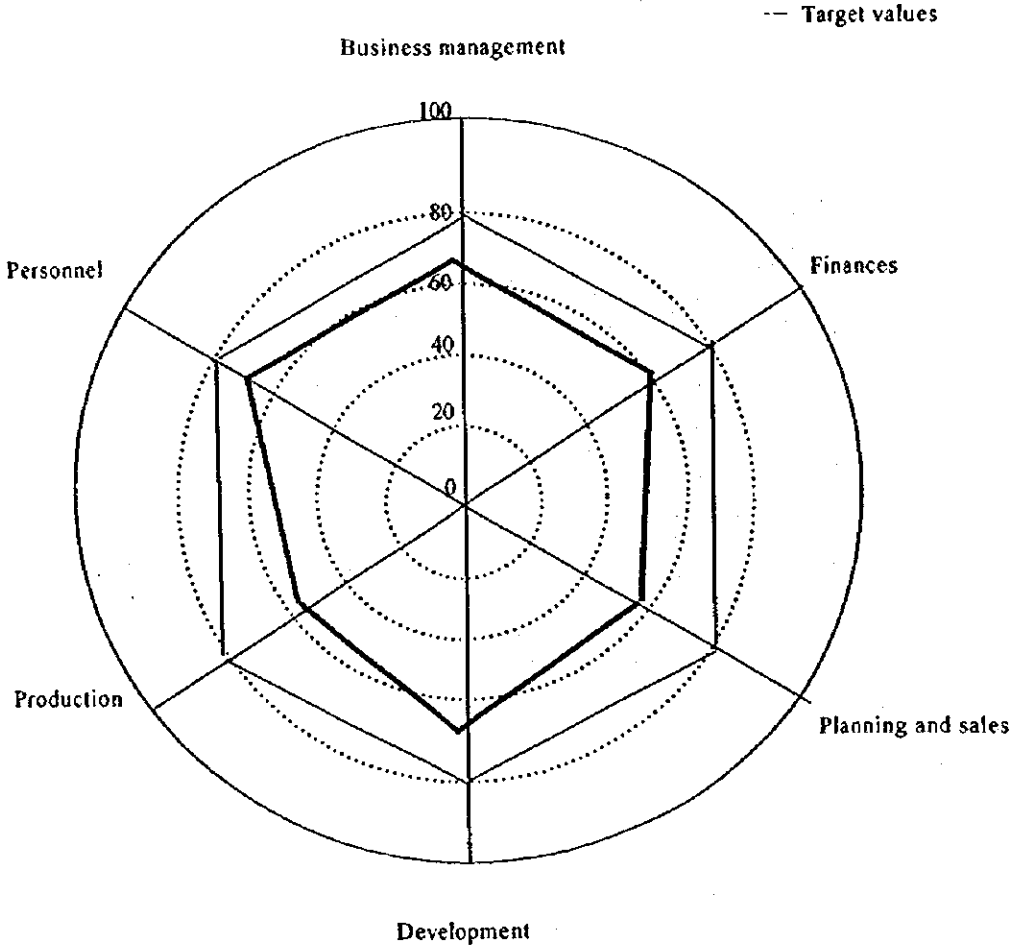
Company Diagnosis and Evaluation Table

Date of evaluation: March , 1998

	Diagnosis items	Matters considered relevant judging from hearings, local surveys, etc.	Evaluation points: Excellent -- Good -- Fair				
Management and control	Leadership and character of the president		5	4	✓	2	1
	Specialized technical capability of managers		5	4	✓	2	1
	Business strategy and medium- and long-term planning		5	4	3	✓	1
	Degree of enthusiasm regarding innovation		5	✓	3	2	1
	Decision-making ability and judgment		5	4	✓	2	1
	Policy indicated by the president (regarding ISO-9001)		5	✓	3	2	1
			Average 3.17				
Planning and sales	Information collection and analysis ability (information on society, market demand, other companies, technology,etc.)		5	4	3	✓	1
	Product planning capability (particularly capability to develop new products and price competitiveness)		5	✓	3	2	1
	Market research		5	4	✓	2	1
	Situation regarding preparation of sales network		5	4	✓	2	1
	Situation regarding service		5	4	✓	2	1
			Average 3.0				
Development	Number of technical personnel and technical level		5	4	✓	2	1
	Situation regarding acquisition of patents and other industrial technology rights		5	4	✓	2	1
	Situation regarding preparation of technical standards		5	✓	3	2	1
	Situation regarding use of external technology		5	✓	3	2	1
	Degree of use of CAD and CAM		5	✓	3	2	1
	Situation regarding preparations for ISO-9001 status		5	4	✓	2	1
	Present situation regarding development facilities		5	4	✓	2	1
			Average 3.4				

Production	Production technology footing		5	4	✓	2	1
	Quality control system		5	4	✓	2	1
	Situation regarding setting of work standards		5	4	✓	2	1
	Situation regarding production facilities		5	4	3	✓	1
	System and actual conditions of maintenance management		5	4	3	✓	1
	Setting of standard times		5	4	3	✓	1
	Cost management		5	4	3	✓	1
	Situation regarding inventory management 39/ Activities for reduction of inventories		5	4	✓	2	1
	Rejects depot		5	4	3	✓	1
	Situation regarding measures for dealing with deficiencies		5	4	3	✓	1
	System and record to date of management of orders placed outside		5	4	✓	2	1
	Situation regarding tool management		5	4	✓	2	1
	Record to date concerning improvement activities		5	4	3	✓	1
	Situation regarding implementation of "5S" campaign		5	4	✓	2	1
			Average 2.53				
Personnel	Personnel grooming system for office work and technical departments		5	4	3	✓	1
	Personnel grooming system for the shop floor department		5	4	✓	2	1
	Employee discipline		5	4	✓	2	1
	Rate of employees staying with the company		5	✓	3	2	1
	Work system		5	4	✓	2	1
	Situation regarding labor unions		5	✓	3	2	1
			Average 3.17				
Finance	Preparation and management of medium- and long-term profit plans		5	4	✓	2	1
	Situation regarding preparation of financial statements		5	✓	3	2	1
	Level of rate of ordinary profit to turnover		5	4	✓	2	1
	Wage level		5	4	✓	2	1
	Levels of research and development and plant and equipment investment		5	4	✓	2	1
			Average 3.2				
		Overall evaluation points = sum of the average points / 61.6					
Other aspects	Content of concrete implementation of restructuring plans	No specific goals	5	4	3	✓	1
	Content of concrete implementation plans for	Mid 1998,still many problems	5	4	✓	2	1
Other matters worthy of mention							

Summary of Results of Evaluation of the Company ____ MERA—BLONIE



Explanation of Content of Overall Evaluation

Strengths	1. Housekeeping of assembly plant is better(Work environment andworkers) 2. Eagerness to follow to proposals of the team 3. Internal audit of 9001 finished. Application in July 1998 4. JET supply of meter clusters to Daewoo
Weaknesses	1 Waste of big facility investment due to sales reduction 2. Dispatch of new products to market needs and demand This id due to poor market study 3. Obsolete machinery and poor maintenance
Problems	1.Poor 5S for machinery of low operation 2.No maintenance capability, no self maintenance by operators 3.Shortcoming in product planning/marketing 4.Less awareness to safety 5.ISO 9001, biased to procedures but no practice 6.Large in process stocks at the assembly line
1 Showing the VIDEO was effective to attracts interesisual 2 Company staff's and plant people are very responsive to the Study team inorder to improve plant operation	

4-5 TELECONTA

Company Survey Sheet

Sequential No		Date of survey:	March16-18 , 1998	Name of survey personnel	HT,AW

	Item	Surveyed content
1	Name of company	TELECONTA
2	Address	NIP 113-00-99-894 UL ZUPNICZA 15,03-812 Warszawa
3	Telephone/fax:	TEL: 22-619-30-54 FAX:22-619-71-39
4	Established/Commence of operations:	Established: 1918 Commencement of operations:1995.4 Ltd.Co
5	Capitalized at:	10,000Zt
6	Persons responsible for management:	President:Tadeusz Surwillo Person in charge of production: Wojciech Sarnechi
7	Situation regarding shareholders:	Owner: 4 Main shareholder(s): 4
8	Number of employees	Total number: 123 Number of blue-collar workers (direct workers 70)
9	Building plot/building:	Plot area: 2 hectare Built area: 5,000 ㎡
10	Turnover	1996:16,500,000Zt, 1997:11,800,000, 1998: 600Zt(Plan)
11	Product structure (% of sales)	Telecommunication relay(PENTACONTA System)
12	Sales	Export: 6% CIS,Ukraine, Belorussia
13	Amount of purchases	3,180,000Zt (1997)
14	Purchased from	Domestic steel maker(Plate,Wire Bar)
15	Main equipment	Continuous cutting, punching(l:4m,t:6mm) Italy made Spot welder, Barrel grinder, Heat treatment facilities
16	Production footing	1 shift, 42hr/week
17	Process divisions	Parts process,assembly,test,delivery in line
18	Problems/main items that need to be improved	Obsolete facilities Purchased from Siemens 2 years ago
19	Other matters worthy of mention	The firm purchased the plant from Siemens, In 1994, introduced TERECONTA license and started production in 1995. The firm is trying to sell the plant.

Company Diagnosis and Evaluation Table

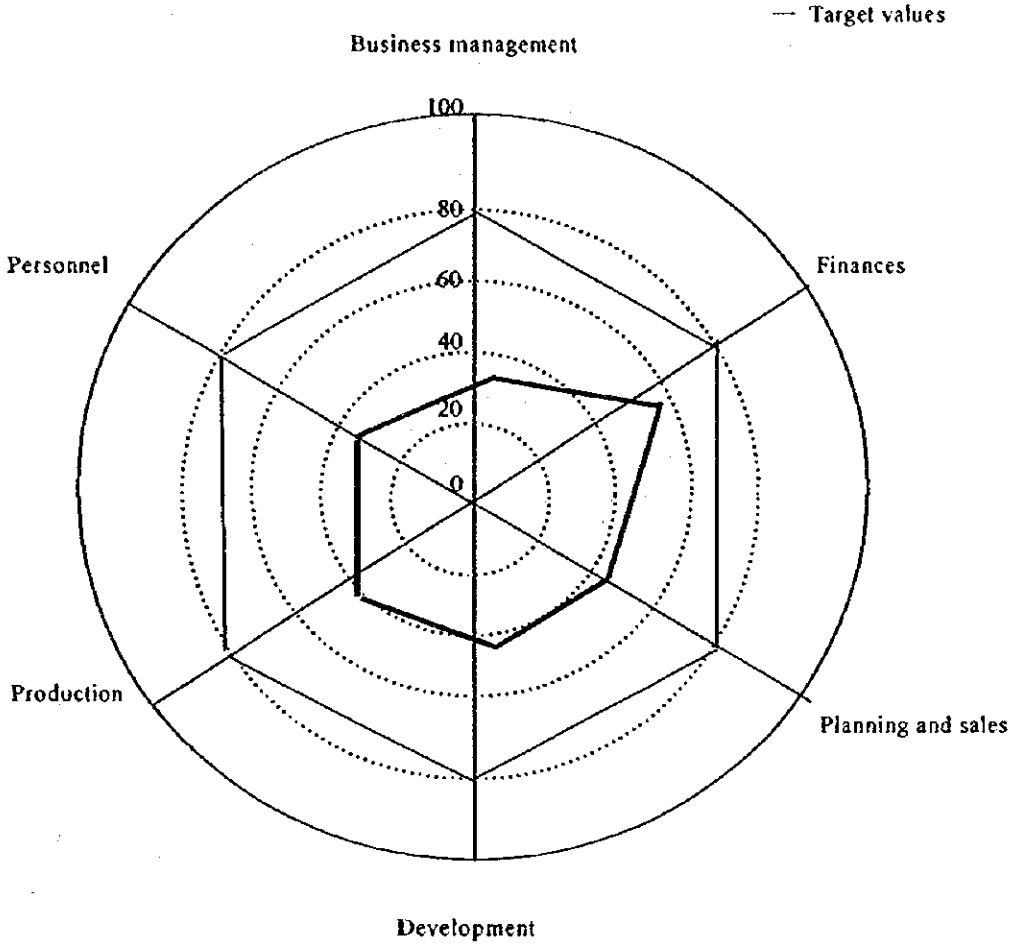
Date of evaluation: March , 1998

	Diagnosis items	Matters considered relevant judging from hearings, local surveys, etc.	Evaluation points: Excellent -- Good -- Fair				
Management and control	Leadership and character of the president	Good natured personality but need more corporate management competence	5	4	3	✓	1
	Specialized technical capability of managers		5	4	3	2	1
	Business strategy and medium- and long-term planning		5	4	3	✓	1
	Degree of enthusiasm regarding innovation		5	4	3	✓	1
	Decision-making ability and judgment		5	4	3	✓	1
	Policy indicated by the president (regarding ISO-9001)		5	4	3	2	✓
			Average 1.8				
Planning and sales	Information collection and analysis ability (information on society, market demand, other companies, technology,etc.)	Still having way of thinking of pre-privatization era Weak market creation	5	4	3	✓	1
	Product planning capability (particularly capability to develop new products and price competitiveness)		5	4	3	✓	1
	Market research		5	4	3	2	✓
	Situation regarding preparation of sales network		5	4	3	✓	1
	Situation regarding service		5	4	3	✓	1
			Average 1.8				
Development	Number of technical personnel and technical level		5	4	✓	2	1
	Situation regarding acquisition of patents and other industrial technology rights		5	4	3	2	1
	Situation regarding preparation of technical standards		5	4	✓	2	1
	Situation regarding use of external technology		5	4	3	✓	1
	Degree of use of CAD and CAM		5	4	3	✓	1
	Situation regarding preparations for ISO-9001 status		5	4	3	2	✓
	Present situation regarding development facilities		5	4	3	2	✓
			Average 2				
Production	Production technology footing	The current production level is only 20% of its production capacity, therefore, it is difficult to evaluate its productivity.	5	4	✓	2	1
	Quality control system		5	4	✓	2	1
	Situation regarding setting of work standards		5	4	✓	2	1
	Situation regarding production facilities		5	4	3	✓	1
	System and actual conditions of maintenance management		5	4	3	✓	1
	Setting of standard times		5	4	✓	2	1
	Cost management		5	4	3	✓	1

	Diagnosis items	Matters considered relevant judging from hearings, local surveys, etc.	Evaluation points: Excellent -- Good -- Fair				
Production	Situation regarding inventory management 39/ Activities for reduction of inventories		5	4	3	✓	1
	Rejects depot		5	4	3	✓	1
	Situation regarding measures for dealing with deficiencies		5	4	3	✓	1
	System and record to date of management of orders placed outside		5	4	3	✓	1
	Situation regarding tool management	Special tools are well controlled	5	4	✓	2	1
	Record to date concerning improvement activities		5	4	3	2	✓
	Situation regarding implementation of "5S" campaign	In particular, the assembly plant is worse.	5	4	3	✓	1
			Average 2.3				
Personnel	Personnel grooming system for office work and technical departments		5	4	3	✓	1
	Personnel grooming system for the shop floor department	No more recruiting since '96	5	4	3	✓	1
	Employee discipline		5	4	3	✓	1
	Rate of employees staying with the company	Cutting every year	5	4	3	✓	1
	Work system		5	4	✓	2	1
	Situation regarding labor unions	No union	5	4	3	2	✓
			Average 2				
Finance	Preparation and management of medium- and long-term profit plans		5	4	3	✓	1
	Situation regarding preparation of financial statements		5	4	3	2	1
	Level of rate of ordinary profit to turnover		5	4	✓	2	1
	Wage level	1,300 Zt Average age 47	5	✓	3	2	1
	Levels of research and development and plant and equipment investment		5	4	3	✓	1
			Average 2.8				
		Overall evaluation points = sum of the average points / 42.4					
Other aspects	Content of concrete implementation of restructuring plans		5	4	3	2	✓
	Content of concrete implementation of plans for promotion of privatization		5	4	3	2	✓

Other matters worthy of mention
Company's principal product(Telecommunication relay system) is obsolete which was seen in the Western countries 20-25 years ago. It will be abolished in Poland in few year.
No alternative new products are not developed

Summary of Results of Evaluation of the Company



Explanation of Content of Overall Evaluation

Strengths	- Skilled workers and experienced engineers - Good manufacturing competence: Press work, Spot welding, Precision thread - machining, Barrel grinding, Heat treatment, Wiring assembly etc.
Weaknesses	-Obsolete facility and production system - Obsolete product - Marketing and product planning
Problems	- The current major product has to switch to new products - Utilization of the core competence
Other aspects	The team's recommendations: - Recommended new products: Wiring harness and electrical parts for automotive use and electrical parts. Assembly of computer systems Improve current product in term of productivity and quality in order to motivate employees and attract potential investors

4-6 WUZETEM

Company Survey Sheet

Sequential No.		Date of survey:	March 20, 1998	Name of survey personnel	Ali Matlos

	Item	Surveyed content
1	Name of company	WUZETEM
2	Address	89/93 Czerniakowska Str,00-718 Warsaw
3	Telephone/fax:	TEL: 22-41-0673 FAX:22-41-8568
4	Established/Commence of operations:	Established: 1952 Commencement of operations:
5	Capitalized at:	State-owned
6	Persons responsible for management:	President: Jaroslow Lazurko Person in charge of production:
7	Situation regarding shareholders:	Owner: NA Main shareholder(s):NA
8	Number of employees	Total number: 800 (approximately) Number of white-collar workers ____ (those in technical positions _196___) (Number of men:) Number of blue-collar workers _____ (those who are direct workers 390_____)
9	Building plot/building:	Plot area: 45,000 ㎡ Built area:8,000(Injection System only)
10	Turnover	1997:33,5000,000Zt 1998(plan) 38,5000,000Zt
11	Product structure (% of sales)	After market parts 72% OEM 18%%
12	Sales to (percentage of exports and countries exported to)	Export After market parts USA, Czech Slovak ,UK, Italy
13	Amount of purchases	
14	Purchase sourcing	Special steels imported from Austria,Germany
15	Main equipment	Universal machinery, Precision Machinery Heat treatment, Induction Errosion
16	Production footing	2 shift
17	Process divisions	Machining ,Assebbly, Testing
18	Problems/main items that need to be improved	Well equipped with old and new machinery but not well maintained, Need mentality change of workers in dorder to handle products with care, %S not well praciced The original product lost their market competitiveness,and turned to the aftermarket sales

5 Seminars

5-1 Seminar at Mielec

5-1-1 Program

Date: March 3, 1998 10:00-14:00
Place: Przeclaw Palace in the suburb of Mielec city

Scope of the seminar
Recommendations on the improvement of the international competitiveness of Polish industries in particular the productivity.
Recommendations are derived from the follow-up study on Mielec Engines Co. and diagnostic studies for other two enterprises in the automotive manufacturing sector.

Program
Recommendations and conclusions
Proposals Regarding the Improvement of Productivity
Naohisa Miyakawa, JICA Study Team, Production Management
TPM (Total Productive Maintenance)
Hideo Tashiro, JICA Study Team, Production Management

5-1-2 Overview

About 40 people from Mielec Engines C0.,its suppliers, professor Dr. M Zablocki of Crakow Polytechnic University, professor Dr. K. Lejda are participants.
The seminar was chaired by Mr. Jan Studnicki, the president of Mielec Engines Co. Following his opening remark, Mr. Janusz Madry, director in charge of marketing and product engineering presented the company's achievement in 1997.
The evaluation of the seminar is summarized in the next table.
Mr. Studnicki mentioned that issues the study team pointed out are the most basic issues which everyone know but it is most difficult to practice.

Seminar Evaluation by Audiences (Mielec)

March 13,1998

←Good

	3	2	1
Is seminar well organized? Material, Organization, etc.	17 (90%)	2 (10%)	
Is the time allocation for each theme appropriate?	10 (50%)	9 (45%)	1 (5%)
Did you understand the contents?	16 (84%)	3 (16%)	
Are these interesting ? and is it explained well for better understanding?	14 (74%)	5 (26%)	
Do you like to apply what you learned for your job.?	9 (47%)	10 (43%)	
Do you like to have such a seminar again?	15 (83%)	2 (12%)	1 (5%)

Number of evaluators: 19

5-2 Seminar at Warsaw

5-2-1 Program

Date: March 23, 1998 9:30-13:30
Place: Ministry of Economy Room 115

Scope of the seminar

Recommendations on the improvement of the international competitiveness of Polish enterprises in the automotive sectors are major theme of the seminar.
Recommendations are derived from the follow-up study on Mielec Engines Co. and diagnostic studies for other five enterprises mostly in the automotive manufacturing sector.

Program

Recommendation and conclusions

Proposals for Polish Automotive Industry Sector and for the Government Based on the Studies of Mielec Engines Co. and 5 Selected Enterprises

Akira Watanabe , JICA Study Team Leader

Recommendations for Productivity Improvement

KAIZEN Activities By Means of Small Circle Team

Naohisa Miyakawa, JICA Study Team, Production Management

Real Meaning of Quality Control and Productivity Improvement

Kazuchika Sato, JICA Development Specialist in Industrial Management

5-2-2 Overview

The seminar initially chaired by Mr. Wojcech May, Deputy Director, Ministry of Economy opened by his remarks followed by Mr. Masao Kumagai, the Secretary, Embassy of Japan delivered a speech on behalf of Japanese side.
About forty persons of the government staffs, representatives of enterprises, consultant and journalists, Professor Wada and Mr. Kaibori, consultants for Ministry of Economy participated the seminar.
Followings are major questions risen for the study team and the representative of Mielec Engines Co.:

(1) What technological restructuring was conducted for Mielec Engines ?
(2) What financial actions has been taken for the automotive industry in Japan ? For example any incentives with regard to the tax, depreciation etc.

(3) How the Polish excessive production facilities can be utilized under such competitive relationships with West European automotive manufactures.
(4) What is the major difference in Polish and Japanese mentality?

Mr. K. Galas, engineering specialist asked the next question.
It seems for him KAIZEN activity at shop floor level is the most important for restructuring. He is interested in to know by what mean, the company top management has deploy and realize their strong will to the all employ level. It seems that, it was accomplished by not only eagerness of the top management but also by any specific method. Mr. Miyakawa and Mr.Tashiro answered the question. Mr. Kepka explained the case of Mielec Engines Co.

Mr. Antoni Miklaszwski, a deputy director, who has been promoting this project from its inception made a closing remark.
He wishes the Polish automotive sectors can be prosper by getting together of enterprises to integrate its potential power with strong support of the government.
He appreciates that the Japanese government does not eliminate Poland from the ODA list, even though Poland has become a member of OECD.
Mr. Miklaszwski concluded that the ministry can assist any request from the industry with assistance of three Japanese resident consultants for the ministry.
Most people listened to all three presentations of the seminar until its end. Next table indicates evaluation results by participants of the seminar.

Seminar Evaluation by Audiences (Warsaw)
March23,1998
←Good

	3	2	1
Is seminar well organized? Material, Organization. etc.	22 (88%)	2 (8%)	1 (4%)
Is the time allocation for each theme appropriate?	8 (32%)	15 (60%)	2 (8%)
Did you understand the contents?	23 (92%)	2 (8%)	
Are these interesting ? And is it explained well for better understanding?	19 (76%)	6 (24%)	
Do you like to apply what you learned for your job.?	16 (64%)	10 (36%)	
Do you like to have such a seminar again?	25 (100%)		

Number of evaluators: 25
Number of evaluationsheets delivered: 29

UE - Lista obecności uczestników Seminarium JICA i Min. Gospodarki

dn.23.03.1998 godz 9³⁰ sala 115, Min. Gospodarki)

	imię i nazwisko	nazwa instytucji, stanowisko	telefon	fax	podpis
1.	Krzysztof Galas	Min Gospodarki Gł. Spec	6935490	6285520	
2.	Andrzej Gorski	Min. Gospodarki Nacz. Wydz.	6223551	6285520	
3.	Leszek Loskowski	FOS POLMO ŁÓDŹ S.A. CZŁONEK ZARZĄDU DYR. PRODUKCJI	0-42 81-41-40	0-42 684-05-91	
4.	Jerzy SOBOŃ	FOS POLMO ŁÓDŹ S.A. CZŁONEK ZARZĄDU DYR. MARKET. I ROZWOJU	0-42 684-65-03	j.w.	
5.	Waldemar Brewiński	Spółdzielnia „Metal Incar" Dyrektor d/s produkcji i eksportu	835-52-41	835-52-42	
6.	Andrzej Korek	„METAL-INCAR" S.I. Główny Technolog	835-00-16 w.279	835-52-42	
7.	Bajorek Adam	Metal Incar Z-ca Prezesa	8350020	-11-	
8.	Andrzej Sieczka	Metal Incar Prezes Zarządu	8350020	-11-	
9.	Emilian Świątkowski	Szef. Gł. Plan.-Handl. N.C.V.S. „Bimot" SA	52-50-11	52-33-83	
10.	Daniel Tomczyk	Pow. Agencja Inw. Zagr.	6210706	6221169	
11.	Ryszard Grochowiecki	Instyt. Przem. i Studiów Stal	6836725		
12.	Anna Jaszowska	Fabryka Łożysk Tocznych - Kraśnik 825		825 4333 052	
13.	WIESŁAWA FOREHNIAK	BIAZET SA DYREKTOR ZAKŁADU E1	085 75-36-56	085 754949	
14.	Tadeusz Surwiłło	P.P.H. TELECONTA Sp. z o.o. W-wa Żupnicza 15 Prezes	6193054	6197139	
15.	Adam Tamiłowski	PPH TELECONTA Sp. z o.o. W-wa ul. Żupnicza 15 Z-ca Dyr. d/s Rozwoju	619.93.80	- " -	
16.	Szczepan MIKULSKI	POLSKA IZBA MOTORYZACJI Prezes Zarządu	646 0848	-"-	
17.	Joanna Samojło	ZEM Zelmot S.A. Kier. biura handlu zagr.	8460527	8460527	
18.	Marek Dittbrenner	ZMP "MERA-BŁONIE" Asystent ds. informatyzacji	608631208	725.35.20	
19.	Tadeusz KRYŃSKI	ZMP "MERA-BŁONIE" K-wnik Wydziału	725-40-22	725.35.20	
20.	Jerzy Bezpałko	Z.M.P. "MERA-BŁONIE" Główny Technolog	725-20-31	725-35-20	
21.	Jarosław Lazurko	WARSZAWSKIE ZAKŁADY MECHANICZNE „NUZETEM" - DYREKTOR	41-06-73	41-85-68	
22.	Grażyna Twardowska	Grażyna Twardowska EXPERT Prezes	6105833	6105833	
23.	Shohei Kaibori	JICA advisor to the Ministry	693-5574	628-2102	
24.	Joanna Grad	MG, Dep. HSP, nacz. wydz.	6935384	629 2311	
25.	Antoni F. Dąbrowski	Przemysłowy Instytut Motoryzacji PIMOT	675 5590 811 24 80	8116028	

	imię i nazwisko	nazwa instytucji i stanowisko	telefon	fax	podpis
26.	Tomasz Ostaszewicz	Ministerstwo Gospodarki, DIE	693-55-05		[illegible]
27.	Krzysztof Grzegorek	Kier. Dz. Techn. Obsługi Prod. Wytwórnia Silników Mielec	0-17 7887078		[illegible]
28.	RYSZARD KEPKA	WS "PZL - MIELEC" prez. K-k BIURA MARKETINGU	0-17 7887405	0-17 7887863	[illegible]
29.	WIESŁAW ŻBIKOWSKI	Min. Gosp. Dep. Strategii	6935124		[illegible]
30.	Lech [illegible]	UKIE	694-75-41		[illegible]
31.	Władysław Roman PAWLAK	PAWLAK CONSULT - QPC effects.	6493630	6493630	[illegible]
32.	Yoji Watanabe	UNICO International Corp			[illegible]
33.	Antoni Miklaszewski	MG - DSG Wicedyrektor			
	Wojciech Maj	MG - DPP Wicedyrektor			
35.	ANTONI MIKLASZWSKI	MINISTRY OF ECONOMY			
36.	MASATO KUMAGAI	EMBASSY OF JAPAN			
37.	RYSZARD KEPKA	MIELEC ENGINES CO			
38.	ROMAN PAWLAK	CONSULTANT			
39.	MASATAKE WADA	ADVISOR TO THE MINISTRY			
40.	KAZUCHIKA SATO	JICA EXPERT			[illegible]
41.	AKIRA WATANABE	LEADER JICA STUDY TEAM			
42.	NAOHISA MIYAKAWA	MEMBER JICA STUDY TEAM			
	HIDEO TASHIRO	"			
44.	YASUO YAMAMOTO	"			
45.					
46.					
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51.					

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6 Study on the Polish automotive parts industry

6-1 Overview of the automotive industry

The automotive industry seems prosperous with high growth rate as shown in the next figure.

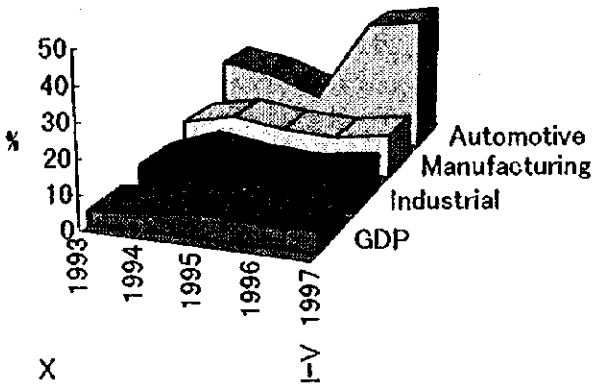


Figure 6-1 Growth rate comparison

(Source: A report obtained from the Ministry of Economy on March 1,1998)

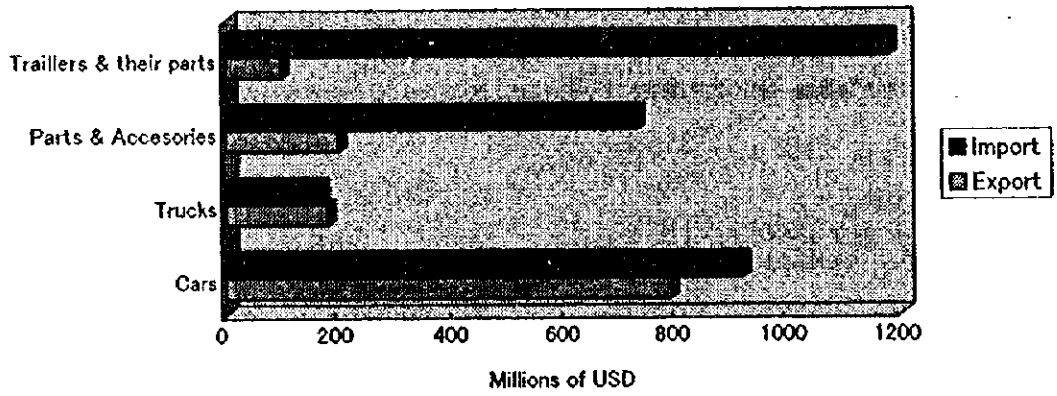
There are two types of motor vehicle producers in Poland.

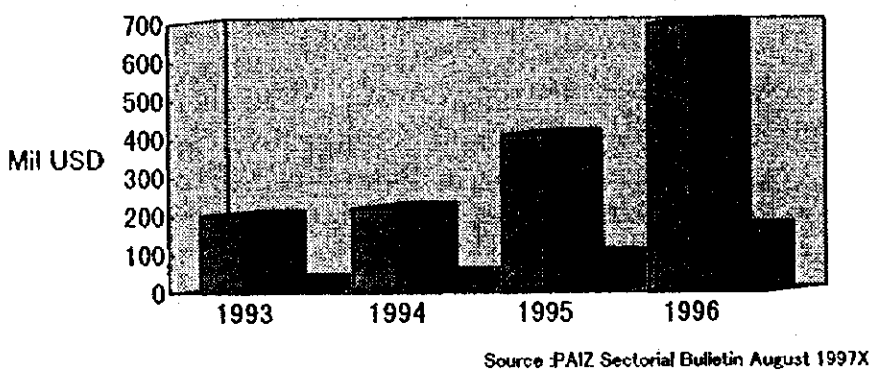
- assembly of motor vehicles from imported parts
- complete production of motor vehicles

The first type is the majority. This is due to the Polish industrial structure; namely the automotive parts industry is not competitive in the world market. Unless its industrial structure will be not reformed, the industry's real prosper in future will be not expected.

Following two figures(Fig6-2,6-3) of the automotive trade structure depict that the more auto production grows the more parts import grows with a higher rate.

Figure 6-2 Automotive Trade In 1996





Source :PAIZ Sectorial Bulletin August 1997X

Figure 6-3 Trade structure of parts and accessories for motor vehicles 1993- 1996

The following is major sector indicators:

- Share in total industry

  Automotive total production : 5.34% (Motor vehicle: 4.38, Motor vehicle bodies:0.11%,

  Parts and accessories: 0.85%
- Motor vehicles manufactured and assembled in 1997: 337,467 (27.6% increase to 1996)
- Number of cars in Poland at year end of 1997: 8.5 million
- Foreign Direct Investment (FDI)

- Share in total industry

  Automotive total production : 5.34% (Motor vehicle: 4.38%,

  Motor vehicle bodies: 0.11%, Parts and accessories: 0.85%)
- Motor vehicles manufacture and assembled in 1997: 337,467 (27.6% increase to 1996)
- Number of cars in Poland at year end of 1997: 8.5 million
- Foreign Direct Investment (FDI)

  Acquisition of existing factories for assembly or production e.g. Fiat, Daewoo, VW, green-field investment e.g. GM in Gliwice or Volve in Wroclaw

6-2 Characteristics of Polish automotive parts industry

(Source: A report obtained from the Ministry of Economy on March 1, 1998)

It is expected that Poland could be one of the major automotive parts production sites in the EU. In order that, its competitiveness has to be strengthened. Followings are its drawbacks.

- Dispersed production
  lack in coordination with duplication of production for various contractors
- A greater dependence on car manufacturers
  less than 20% supply their goods to more than two assembly plant, and 40% chiefly supply to one contractor
- Relatively small scale production
  which prevent the attainment of improved productivity and competitiveness there are 119 large enterprises(more than 50 employee) there are several hundred enterprises of less than 50 employees
- Small scale participation in "globalization"
  15.5% contribution to the total export revenue
- Limited competitiveness in term of goods

6-3 State policy toward the automotive industry

The early years of 1990s were a critical period for the Polish automotive industry when the government introduced a long -term industrial policy. It is divided into two stages.

Stage- I the periodic protection, the creation of conditions for a stable restructuring

Stage-II further support for FDI especially of the greenfield type

Today, all automotive assembly business are under the control of foreign manufacturers. Temporary legislative protections have been takes as follows:

- 1993- prohibition of registering of cars with two cycle engines
- 1994- prohibition of importing trucks, buses and cars of old years
- introduction of minimal tariff rates for imported cars and limitation of tariff exemptions on components for assembly plant that produce less than 1000 cars annually or 200 tractors, trucks, buses or specialized vehicles.

7 Recommendations and conclusions

7-1 Recommendation for Polish automotive parts industry sector

(1) The growth of the automotive assembly industry will prosper automotive parts manufacturers.
The Polish automotive assemblers have to develop their own niche vehicles to satisfy market needs in Poland and its neighboring countries by modifying base models or as derivatives.

(2) It is the most practical to introduce the foreign direct investment. The following are basic provisions for automotive parts makers to attract foreign investors.

- Quality assurance: ISO 9001, QS 9000 certifications
- Low acceptance defect rate
- Capability of continuous cost reduction by KAIZEN
- Short delivery time by JIT or small lot size
- Readiness for CAD/CAM networks linkage with car makers
- Short development lead time.
- Good practice of environmental protection: ISO 14000 certification

(3) Flexible manufacturing
Current obsolete facilities have to be replace by such machinery as machining centers and NC machines.
Adoption of new management methods for the flexible manufacturing.

(4) Benchmarking
Studying competitor's products by systematic methods as Value Analysis, etc.

(5) Organizing or strengthening of manufacturers association

Organizing a committee to discuss the reform of the industrial structure in collaboration with University and Government.

- Formulation of strategy for 2002
- Horizontal integration

7-2 Recommendation for the government

7-2-1 Major problems of the automotive pats industry

- Losing domestic value added
  Trade deficit in the auto parts industry
  Waste of domestic industrial resource
  Less organized industrial structure
- Need for transformation and liquidation of the negative inheritance.

7-2-2 Recommended Industrial policy

- Setting up the National Vision, Goal, Strategies and Action Plans for 2002
- Promotion of the automotive parts industry

7-2-3 Technological assistance

- Utilization of national institute to update productivity by means of diagnosis and seminars
- Education of competent consultants
- Information collection and service in the technical and overseas market areas

7-2-4 Financial assistance and incentives

- Trade promotion
- R&D in such field as the environmental protection, energy saving, urban traffic control
- Information and telecommunication technologies
- Human resource development