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RESTRUCTURING AND REVITALIZING THE KALININGRAD REGION*
(PHASE I-A)

TF/RUS/94/001 and US/RUS/93/134

RUSSIAN FEDERATION

Technical report: Study on the conversion of military industries into civilian ones**

Prepared for the Kaliningrad Administration
by the United Nations Industrial Development Organization

Based on the work of Ch. Ekman, consultant in conversion of military industries into civilian ones, and Y. Zverev, national consultant

Project Manager: R. Mueller
Industrial Policies and Private Sector Development Branch

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** Mention of company names and commercial products does not imply the endorsement of the United Nations Industrial Development Organization (UNIDO). This document has not been edited.

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General notes to this report

The draft version of this report has been sent by Mr Lagernikov to two committees of the regional administration for comments:

1) The Committee of Public Security and Guarding of the Territory.
   This committee did not have any remarks and wholly agrees with us.

2) The Committee on Industrial Policy
   This committee has not given any comments so far.

The structure of this report is in accordance with UNIDO's checklist (March 1994) and with the structure agreed on the project coordination meeting 15-06-95 in Kaliningrad.

The structure of the various chapters is adapted to the specific nature of the military conversion subproject.

Changes in the text from the draft version have been made in pages 2, 8, 11, 20, 21, 22, 23, 53, 54, 56, 63, 65, 66, 67, 68, 69, 70, 71, 72.

EXPLANATORY NOTES

The value of local currency during the project time period:

In our analysis of individual companies there are comparisons between years. We have not adjusted the economic figures for inflation rate so the reader will have to consider this. The following table shows official average over the calendar year.

Year	Rbl/USD -
1990	0.58
1991	0.58
1992	192.50
1993	932.15
1994	2,204.00
1995 (Jan-Jun)	4,420.00

Present market rate is around 4,550 Rbl/USD (selling rate) and during this period the Rbl has been stable against the USD. The government policy is a corridor 4,300 - 4,900 Rbl/USD until 31-12-1995.

There is some inflation at present in prices for utilities, transports and consumer goods. About 50% (estimation) of consumer goods are imported, so customs duty changes also influence the prices.

Estimated inflation rate middle 1995	4.6% monthly (August)
Import duty change estimation	upwards

Definitions and abbreviations used in the report:

CIS	Commonwealth of Independent States (most ex-USSR countries)
JSC	Joint Stock Company - a normal form for privatisation of previously state owned Russian enterprises
JSCOT	Joint Stock Company Open Type - JSC with shareholders outside of company employees
FPG	Financial and Industrial Group - a new formation in Russian market economy
PO	"Production Association" - Group of enterprises in former USSR
J-V	Joint-venture
SME	Small and medium-sized enterprises
EDB	Experimental Design Bureau
"Silicon valley"	A combination of "technopark" organisation and individual entrepreneurial spirits creating a "contagious" technology based business development (ref. to the region close to Stanford University, San Francisco).
VPK	Military-Industrial Commission
EBRD	European Bank for Reconstruction and Development
Dual-use	Products or technologies for both military and civilian use
TQM	"Total quality management" concept
"Red" assembly	Russian assembly of computers of foreign components and parts
Rbl	Russian Rubles
MRbl	Million Rbl
USD	US dollars
TUSD, MUSD	Thousand USD, million USD
EPS	Electric Propulsion System ("Fakel")
SPT	Stationary Plasma Thruster ("Fakel")
PCB	Printed circuit board
IR	Infrared
W	Watt
ha	Hectares
sqm	Square meter
t	Ton
m	Meter
mm	Millimeter

ABSTRACT

Project number	US/RUS/93/134/11-59
Project title	"The conversion of military industries into civilian ones"
Frame of the project	Our activity is a part of the larger project "Kaliningrad 2000" - "To prepare a detailed regional development survey of the Kaliningrad region, identifying industrial investment projects, and advising on policy and institutional measures to be taken by the Government for restructuring and revitalizing the Kaliningrad region."
Objective according to the job description (Annex 5)	Analyze the production structure, the technological level and the skills of the workforce in selected military industries. Identify opportunities to utilize capacities of military industries for the production of goods for civilian consumption. Identify those enterprises of the military industries which could be converted completely or partly into civilian industries. Assess the investment projects required for the conversion of military enterprises into civilian ones. Identify those commodities for civilian consumption which could be produced in former military enterprises and assess the technological changes which might be necessary. Elaborate a concept for the conversion of military industries into civilian ones, including product structure, setting out the findings and recommendations on further action which might be taken.
Duration of activity	Preparatory work: April - May 1995 On site work: June - September 1995

Main conclusions and recommendations

Nine enterprises were defined as defense oriented in the regional conversion program in 1992.

Baltic Shipbuilding Plant "Yantar"	Shipyard
EDB "Fakel"	Ion plasma thruster technology
"Kvartz" Production Association	Electronics, computer and vacuum technology
"Stroydormash" Plant	Engineer vehicles, mechanized bridges, etc.
"Kaliningradbummash" Production Association	Road-building vehicles, paper-making equip.
Gusev Lights engineering Plant	Search lights, airfield lights, etc.
"Wagonostroitel" Plant (bef. privatisation Wagon Building Plant)	Dump cars, electric carts, aircraft arresting equipment
"Elektropribor" (bef. privatisation Plant of Precision Mechanics)	Electric equipment
Ozersk Plant of Printed Circuits	Printed circuit boards

In the 1995 perspective the first six are relevant for our study.
"Kvartz" PO has been dissolved and the "Kvartz" presented in this report is in fact the the large central plant in the city of Kaliningrad. One of the offsprings, "Carat", is also presented in the report.

Observandum:

The military conversion enterprises cannot be treated as a homogeneous industry sector like for example the paper&pulp industry. The enterprises are very different and specific and there is no cooperation between them. Although we in our analysis start by looking at this sector from a generalized viewpoint, the main conclusions and project proposals are results of analyzing each company individually.

Our findings:

The dominating problem for managers is of an immediate financial nature (liabilities fallen due and necessary costs and investments) with a volume of 10 - 20 MUSD (our estimation). All measures we can propose have a longer time perspective than this.
Summary of our findings:

High-level technologies:

We find two specific items in Kaliningrad
- "Fakel" with its ion plasma thruster technology for space applications
- "Kvartz" with its vacuum coating technology.

"Fakel's" technology is internationally unique and has already led to joint-ventures with American and French companies. There are some direct and indirect possible spinoff projects from "Fakel's" technology. "Kvartz"' vacuum coating is a commercially viable technology with many application areas and international market opportunities. Both companies have civilian product/market projects under way.

The continuing UNIDO project could help with international contacts, promotion of intercompany co-operation, promotion of joint-ventures and business planning. Proposed conversion projects should be analysed deeper. The companies themselves do not have the necessary funds for investments.

"Yantar" shipyard:

The "Yantar" shipyard is in our opinion of strategic importance for the region, considering the vision of Kaliningrad as an important trade and transport center between Russia and Western Europe. "Yantar" has already started to produce civilian orders but is hampered by lack of funds and needs of investments. It can be converted into a modern repair and production shipyard for civilian ships 3,000 - 14,000 tonnes based on existing dock capacity. This is the primary project of "Yantar's" management. The investment is estimated to be around 50 MUSD according to"Yantar" management. There is also a minimum modernisation investment proposal of 7.5 MUSD.

However the shipyards in Western Europe (Germany, Sweden, U.K.) have cut down their capacity rather much during the last 20 years because of the competitive pressure from Southeast Asia and changes in the market. Before deciding on investments in "Yantar" a deeper market and competition analysis needs to be done.

The J-V "RIK-Con.ainer" on the "Yantar" site is a second investment project, a manufacturing plant for 20,000 seagoing 20" containers/year, which has already been promised 30% of its financing (37 MUSD in total) by EBRD.

Normal (not high-tech) business development opportunities:

All enterprises in our scope have started to develop conversion program plans in accordance with the Russian federal law 1992 about conversion of defense industry. All have more or less completely stopped military production in favor of civilian products. On the other hand all conversion enterprises have severe financial problems, with the possible exception of Kaliningradbummash which is already in the hands of a financialiy strong owner.

The enterprises have a high degree of vertical integration compared to rational Western companies - this is a logical effect of the difficulties with external supplies. They also have a tendency towards "wild" diversification in the project proposals. This may be defendable in the Russian domestic market but hardly in international competition.

Production departments have in many cases good machine tools but here are big potentials for improvements. They have generally oldfashioned layouts, unrational internal transport means, no flow-of-material orientation, no process rationalisation, and maybe both financial and historical reasons for a low maintenance standard.

The ownership structure is important for the survival of the enterprises. The privatisation policies have not led to any decisive results so far, with the exception of a few enterprises where strong private ownership has been established and creative restructuring is taking place. It is an interesting and somewhat worrying experience that the appearance of an entrepreneurial individual seems to be a much more hopeful factor for even large enterprises than any systematic reform approach.

The UNIDO project could assist restructuring, reorganisation, development of marketing, management training, TQM programs, and production improvement programs. Proposed conversion projects should be analysed deeper. The companies themselves do not have the necessary funds for investments.

Management consultants in Kaliningrad:

In a sense triggered by the UNIDO project, a Management Consultants Association ("Club"), the first of its kind, was formed in June 95 with at present 14 individual members. There is a big need for management consultancy in Kaliningrad enterprises but managers have not yet any real understanding for the value of this. Areas of competence are market research and communication, marketing management, international cooperation, production and quality development, downsizing of organisations and facilities, development of administative processes, management training and similar.

The Club will have to establish consultancy standards and struggle to change the attitude of managers. The UNIDO project can assist the consultants in this.

Competitiveness of Kaliningrad enterprises:

The most important factor for competitiveness of Kaliningrad companies is "very low cost of skilled workers" - this is indicated by all company managers. This has to be considered seriously for three reasons:
1) It will not last for ever.
2) It is depressing for people.
3) It is"a soft pillow" - may reduce the ambition to work up real competitive strength.

If this advantage lasts for say 5 - 10 years (which is the guess of managers here), the grace period should be used for developing quality, design and services that are of international competitiveness. The UNIDO project could help in this process with international consultants.

INTRODUCTION

Authors	Yuriy Zverev, Dr in economic geography, Kaliningrad State University Christer Ekman, M.E., NSM Nordic School of Management, Stockholm
Activity duration	April - Sept 1995, (on site work June - Sept)
Objectives	Military conversion has three levels - government policy, regional institutional and enterprise level respectively. Our original objective is focused at the *enterprise level.* Conversion of military enterprises and resources has three aspects: 1) Transformation of enterprises and people producing military materiel into producing civilian goods and services. 2) Retraining of military personnel for civilian occupations. 3) Conversion of military infrastructure into civilian use. Our subproject is mainly focussed on 1), *the enterprise conversion.* However we have agreed with the project leader also to look into the matters 2) and 3) as they are of interest for the civilian development of the Kaliningrad region.
Objectives obtained	Generally the objectives have been met, considering that the conversion process has been going on for some years. Enterprises have already produced some civilian business and a number of project proposals. In this report we present the plans of the enterprise managers' as well as our own analysis and proposals. We have not considered it an objective for this phase to negotiate managers' commitment to our proposals.
Cross references to other reports	The military conversion enterprises belong to either the *machinebuilding & electronic industry* or the *shipbuilding industry.* As these sectors are analyzed separately by other subteams in the project, their reports are relevant for comparison.

Perspectives on our task:

Military conversion can be looked upon as a societal objective - "demounting the military-industrial complex" and turning military resources into peaceful purposes. The general goal for military products, "performance at any cost", implies that there are top technologies within the military-industrial complex that can be exploited for successful civilian use and for successful commercial business development at the enterprise level. This viewpoint is supported, to say the least, by the astounding spinoffs from the space programs of the 60's.

1. *Consequentially we should look for high-level technologies in the Kaliningrad enterprises and institutions. We should evaluate how they could be exploited for civilian purposes either by the enterprises in question or through a "Silicon valley" type technology based industrialisation process.*

But if we look upon the military conversion from the viewpoint of a local enterprise we get a less solemn, more down-to-earth situation to cope with - the military orders for the Kaliningrad enterprises just disappeared in the beginning of the 90's and the managers were told to solve the problem on an enterprise level. For the enterprise the change is drastic - the customer is gone, the friendly network of design bureaus

ministries and other enterprises is gone, the cash flow is gone, the "raison d'etre" is in a sense gone. Left are oversized enterprises, redundant employees, fixed assets rapidly becoming obsolete, and in a sense a confinement to the local region.

2. *Consequentially we should also look, not for technologies, but for opportunities to restructure enterprises, markets for products that the company's design & production resources would be suitable for and entrepreneurial people who could create new businesses out of the old structures.*

For this purpose military high-tech is no advantage as such - the road is long from military high-tech to products for the consumer, be it Russian or international, and the specific skills of people capable of producing military high-tech cannot be very useful for ordinary household appliances for example.

If military-industrial enterprises are to exploit civilian domestic markets they will have to develop competitive products, marketing competence, distribution channels and a market communication culture. There are international markets with product requirements similar to those of the Russian domestic market, but if they want to exploit "Western" international markets they will have to develop quality and design to a comparable level as regards product appearance and function, product safety requirements and service concepts. This is the concept of TQM - Total Quality Management.

It requires a mental change in people to go from the military-industrial existence over to an existence based on servicing and satisfying civil customers and ordinary people in competition with other suppliers.

3. *Consequentially we should look for goals and strategies, attitudes, plans and organisational forms for management training, quality improvement programs, marketing functions, productivity improvement programs, etc. for the enterprises.*

The retraining of military officers for civilian occupations has a "supply side" and a "demand side" - the number, qualifications and specialisations of officers being retired on one side - on the other side work opportunities and needs in the Kaliningrad region. In between there is the question of resources for producing the retraining.

4. *We can with the help of military authorities map the number, qualifications and specialisations of officers in question and also map the available opportunities, resources and organisations in Kaliningrad for "civilian" management and professional training.*

The interesting points about converting or using military infrastructure for civilian purposes are that it could be helpful to the economic development of the region and that it could form technological bases for business development. This matter also has two aspects - what specific resources can be of interest from the regional authorities' viewpoint? and is it of interest for the military authorities? There is a natural problem - defense resources are basically not regional but *federal* and there is an understandable secrecy about these things.

5. *Regional civil and military authorities should indicate their interest if we are to go deeper into the possible dual use of military infrastructure. Apart from that we can only refer to official sources as regards military infrastructure.*

I BACKGROUND

Objectives for the military conversion subproject:

1. Analyze the production structure, the technological level and the skills of the workforce in selected military industries.
2. Identify opportunities to utilize capacities of military industries for the production of goods for civilian consumption.
3. Identify those enterprises of the military industries which could be converted completely or partly into civilian industries.
4. Assess the investment projects required for the conversion of military enterprises into civilian ones.
5. Identify those commodities for civilian consumption which could be produced in former military enterprises and assess the technological changes which might be necessary.
6. Elaborate a concept for the conversion of military industries into civilian ones, including product structure, setting out the findings and recommendations on further action which might be taken.

Scope of work:

Our search sector contains seven enterprises which were more or less dependent on military production. We have visited all of them, looked at production sites and interviewed directors and managers. The interviews have been of an open nature. We have also studied available primary quantitative data from the companies and secondary data in the form of some official statistics as well as reference articles on military conversion in other parts of Russia (annex 2).

Apart from this we have interviewed persons at relevant institutions in Kaliningrad (annex 1). We have also had several sessions together with the subteams for the *machinebuilding & electronic industry* and the *shipbuilding industry* in order to coordinate the analysis.

In many cases our project proposals are parallell to the thinking of the companies' managers, but when it comes to restructuring, consensus would have to be negotiated.

History and trends:

There is no large defense industry in the Kaliningrad region compared to many others regions of ex-USSR and Russia. According to Gosplan information slightly less than 19000 employees or 15,9% of the industrial labor force were engaged in the industries under the Military Industrial Commission (VPK) in 1985. If family members are included it means that about 7% of the 845 000 inhabitants of Kaliningrad region were dependent of this sector of the economy (the average figures for the Russia in general were 24,8% and 12,1% respectively). Some of the production of VPK sector was not

for military purposes. Thus fewer employees than mentioned above were actually involved in the defense production.

Defined in the conversion program of Kaliningrad region of 1992-1995 were 9 defense-oriented enterprises in the region among the total 29 machine-building enterprises. Table 1 presents some data about them.

The share of defense production in the total production volume of these enterprises was about 50% in 1990.

There was only one defense enterprise in Kaliningrad region that produced complete weapon systems, Baltic Shipbuilding Plant "Yantar" (military ships). The other defense-oriented enterprises produced support equipment and components and parts for military hardware.

Table 1 *The defense-oriented enterprises of Kaliningrad region*

Enterprise, location	No. of employees (1990)	Floor space thousands sqm	Share of military output in the total output by the end of 1980's	Defense-oriented production
The Baltic shipbuilding Plant "Yantar" (Kaliningrad)	8,000	592	85 %	Military ships (antisubmarine missile destroyers, escort ships, assault transport dock-ships and others).
The Experimental Design Bureau "Fakel" (Kaliningrad)	2,400 (1991)	40.3	95 % *	Development, manufacturing, and testing of the Stationary Plasma Thruster (SPT) for spacecraft orbit correction and station-keeping
The "Kvartz" plant (head plant of the "Kvartz" PO) (Kaliningrad)	5,400	47.8	35 % *	Printed circuit boards as well as the special technological equipment for production of PCB's, computer-based controlling systems, peripheral equipment and others
The "Stroydormash" plant (Kaliningrad)	1,900	23	66 %	Engineer vehicles (mechanized bridges and other)
PO "Kaliningradbummash" (A.Kosmodem'janskogo, near Kaliningrad)	1,240	22	48%	Roadbuilding engineer vehicles
Wagon Building Plant (Kaliningrad)	2,470		10 %	Aircraft-arresting units
Lights engineering Plant (Gusev)	2,730	58.7	36 %	Lights and armatures for military vehicles
Enterprise "ERA" (Kaliningrad)	400	9.5	73.5 % (1993)	Installing of electrical equipment into military ships
The plant of Precision Mechanics (Kaliningrad)	470 (1993)			Electric equipment, transformers, generators
Plant of Printed Circuit Boards (Ozersk)	430 (1991)			Printed circuit boards

* including dual-use products

(The Kaliningrad enterprise "ERA", installing of electrical equipment into military ships is added to the table above.)

The PO "Kvartz" with the head plant in Kaliningrad and EDB "Fakel" are high-technology enterprises. The other defense-oriented enterprises of the Kaliningrad region are mainly metal-capacious plants with a medium level of technology.

Privatisation:

Most of the defense-oriented enterprises were privatised in 1992-1994 and most of them according to the "second model". This model foresees that workers' collective will control 51% of shares. The remaining shares should be sold through auctions.

The PO "Kvartz" was dissolved - the design bureau and the five enterprises of the former PO were privatised separately. Three of these new independent enterprises are conversion plants - JSC "Kvartz" (Kaliningrad), JSC "Avangard" (Ozerky) and JSC "Carat" (Chernyakhovsk).

Plant of Precision Mechanics (now JSC "Electropribor") was privatised by the "first model". This model foresees the reservation of 25% of the shares for the workers' collective and 5% for the managers of the enterprise. 10% could be sold to employees on a privilege basis. The remaining shares should be sold through auctions.

The "third model" for privatisation was used in privatisation of "Avangard". This model foresees that one group of enterprise workers (with permission of workers' collective) may take upon themselves the responsibility for fulfilment of privatisation plan and conclude the agreement with property fund for one year. After a year (if conditions of agreement were observed) this group may buy 20% of the shares. All workers may buy 20% more of the stock.

The Ozersk Plant of Printed Circuits was sold as a result of an investment tender to the Moscow firm "Intechcom".

In the case of JSC "Yantar" the government kept 56,12 % of the stock and in the case of JSC "Kvartz" the government kept a "golden share" with veto right. EDB "Fakel" is 100% government-owned and will not be privatised as it is considered a strategically important enterprise.

Lately there has been a redistribution of the defense-oriented enterprises' shares. Thus real owners of some of them (for example. JSC "Vagonostroitel", JSC "Kaliningradbummash") are now commercial banks and private companies.

II PRESENT SITUATION, STRATEGIES AND DEVELOPMENT AREAS

This is the main body of the report.
We first describe situation and strategies for the conversion industries in general, (II.1). Then we describe situation and strategies for the seven selected enterprises (II.2.1 - II.2.7).

The structure of each description is this:

1. Factual description and history
2. Short facts in the form of a table
3. SWOT analysis
4. Managers' vision and plans
5. Consultants' impressions and strategy proposals.

The SWOT analysis is in each case as comprehensive as possible to allow for strategy conclusions as logical consequences of the analysis. For the enterprises we use a standard layout with the following items:

	Strengths	Weaknesses
Technology		
Market position		
Product line		
Production capabilities		
Finance		
Human resources		
Management		
Organisation		
Ownership		
Cooperations		
Localisation		

	Opportunities	Threats
Markets		
Competition		
Promotional factors		
Restraining factors		
Uncertainties		

II.1 FACTS, SWOT ANALYSIS AND STRATEGIES FOR CONVERSION INDUSTRIES IN GENERAL

1. Factual description and history

The conversion in the Kaliningrad region, same as in Russia as a whole, started "collapsedly". Without any previous warning defense orders were cut down, leaving the enterprises with the threat to go bankrupt and the workers with the threat to be dismissed.

An attempt to introduce conversion in an orderly way was undertaken in 1992 after approval of the Russian Federation law "About Conversion in the Defense Industry in Russia". The Kaliningrad *regional* program "The Conversion for years 1992-1995" was adopted on 23rd December 1992. It was noted that the basic role in conversion from military to civil manufacturing and in developing concrete conversion programs should be taken by the enterprise itself. The purpose of the *regional* program was to help enterprises to fulfil their programs. It was presupposed to make use of accumulated high-technologies of the military-industrial complex and skilled workers in the reform into civil production and services. Priority would be given to the following civil goods and services:

- electric transport vehicles (electric loaders, electric tractors, electric carts, etc.)
- equipment for food processing industry
- vehicles and supplies for farmers
- pumps and valves of different types for municipal services and rural building
- large sea containers
- civil ships
- medical equipment
- some consumer goods.

Total cost of the regional conversion program was estimated to about 1,000 MRbl in prices of that time (or about 2.5 MUSD).

Unfortunately the program "Conversion" was carried out slowly - first of all because the mechanisms for its realisation were not carefully studied and secondly because of lack of financing. The privileged government credits and the government budget subsidies had to serve as main financial sources for enterprise conversion programs. In reality these means were assigned in insufficient quantity and were used ineffectively. Others obstacles were lack of marketing experience, lack of networks that would support the conversion process, need for training and education of managers and workers, etc. When the Industrial Committee in the regional administration was abolished it looked as if coordination was lost in that field and the enterprises would have to act by themself.

In reality the process of conversion in the Kaliningrad region stopped after the first stage - the cessation or sharp reduction of the defense production. Most of the defense-oriented enterprises have no new government orders. Some of them completely or almost completely stopped the defense production ("Stroydormash", "Vagonostroitel", "Kaliningradbummash", "Avangard", "Carat", " Gusev plant of lights engineering equipment", Ozersk plant of printed circuits).

All plants significantly reduced their number of employees (see Short facts compared with table 1).

In 1994 there were not more 3,500 persons directly engaged in the defense production in Kaliningrad region (about 5% of total industrial work force). The volume of defense production in that year was about 3% of the total regional industrial output.

In many ways the conversion process has been chaotic with minimum state support and no clear guidelines for industrial companies. As defense orders shrank many companies found they were unable to operate in a market environment. This is explained by their historic background - the defense sector took the orders from one regular contractor - the state - and felt reasonable secure without marketing and other commercial services.

Not only military output was sharply reduced. In 1994 the output of civilian products from the different regional defense-oriented enterprises fell by 30-80% compared with 1993. Commenting on their financial standing, company officials blamed a decrease in military order, lower demand for civilian products, imperfect tax legislation, high interest rates on credits and the non-payment crisis. There is also strong competition from higher-quality foreign consumer goods on the Russian domestic market.

Because of the high inflation and the lack of state subsidies most companies were unable to complete their remodelling programs and reorient towards a new civil production. But all enterprises have conversion programs and projects and try to put them in to effect (more or less successfully).

2. Short facts

The conversion enterprises in 1994

Enterprises	Average annual number of employees	Share of defense output of total output, %
JSC "Baltic Shipbuilding Plant "Yantar"	5,050	78
JSC "Kvarz"	2,120	13
EDB "Fakel"	1,840	25
JSC "Stroydormash"	930	0
JSC "The Gusev lights engineering plant"	1,580	0.5
JSC "Vagonostroitel", (ex-carriage-building plant)	1,380	0
JSC"Kaliningradbummash"	440	0
The Ozersk plant of printed circuits	100	0
JSC "Avangard"	600	0
JSC "Electropribor" (ex-plant of precision mechanics)	90	39
JSC "Carat"	490	0.8

3. SWOT analysis for the conversion sector

Strengths	Weaknesses
1. There are some advanced technologies (i.e. plasma technology of the EDB "Fakel", vacuum coating technology of JSC "Kvartz") and possibilities for their improvements (some design bureaus and institutes exist). 2. Several enterprises have some relatively modern equipment ("Fakel", "Kvartz", "Gusev plant of lights engineering equipment", etc.). 3. Enough skilled labor force with lower wages than Poland and Lithuania (average monthly wage in Kaliningrad industry was about 70 USD in June 1995, the same figure for Poland in 1994 was almost 240 USD). 4. A number of enterprises are single producers in Russia for some kinds of production ("Fakel" - plasma thrusters, "Vagonostroitel" - dumpcars, "Stroydormash" - road marker vehicles, etc.) or have a significant share of total Russian production of some goods. 5. Competence to produce high-precision products ("Fakel", "Kvartz", etc.). 6. Experience in work with refractory (hard) metals and alloys ("Fakel" first of all). 7. Large metalworking capacity (mechanical treatment, welding, casting, forging, stamping, etc.). 8. Good geographical localisation for production oriented to the European market.	1. Bad financial situation on all conversion enterprises (lack of working capital, customer indebtedness for goods and services, etc.) 2. Many skilled engineers and workers are leaving (annual average number of production personnel was reduced from 25,000 in 1990 to 14,600 in 1994) 3. Many enterprises have obsolete equipment and relatively low technological level. 4. Long-term underutilization of production capacities and as a consequence disturbance in production cycle, deterioration of product quality, growth of costs, etc. 5. Long-term shortage of investments and consequentially obsolescence and retirement of equipment. 6. Inflexible functional department organisation is typical for the conversion enterprises. They are production units (in contradiction to Western companies) and have not developed marketing, financial and juridical services, or modern logistic and distribution systems. 7. There are some problems with management (first of all lack of strategic thinking) and with organization of labor. Many managers and workers need retraining. 8. Most of enterprises have not enough experience of working in market condition and in working on the international market. 9. Some conversion projects do not use real strengths of enterprises. "Wild" diversification can lead to dissipation of resources.

Opportunities	Threats
1. Markets are emerging for some high-technology products (i.e. plasma thrusters, plasma surgical complexes, vacuum coating equipment) in Russia and foreign countries - Europe, North and South America, Far East, etc. 2. Markets of the Baltic Sea Area and other European countries for medium-technology products - including subcontracting work for Western companies, assembly of Western products with gradually increasing proportion of components and parts produced in the Kaliningrad region - a target would be 60-70% -, marine service (ship repair, shipbuilding, etc.) 3. Russian domestic market for some goods that have a stable demand (dumpcars, roliers, lights engineering equipment, etc.). 4. Special economic zone with tax and customs privileges for producers and exporters.	1. The general economical and political situation in Russia as a whole. Kaliningrad is an integral (although geographically separate) part of the Russian Federation and it is impossible to ensure a stable regional development if most part of Russia is in deep crisis. 2. Some problems with transit of raw materials and semi-finished goods (especially non-ferrous metals) through Lithuania. 3. Severe international competition in potential markets including Russian domestic market (especially in the consumer goods and computer equipment markets). 4. Lithuania's and Poland's better position to attract potential investors. Compared to Kaliningrad these countries are more free in the decision making. 5. Break of production ties with other Russian

	enterprises, irregularity of deliveries of raw materials and semi-finished goods. 6. Low buying power for civil goods in the Russian market because of investment crisis and strong foreign competition on consumer goods. Non-payment crisis. 7. Growth of domestic prices for raw materials, energy and transport services. 8. Instability of economical laws and government policy. 9. Very high credit interest rates on the Russian finance market, practically nomeans for long-term crediting. 10. Lack of mechanisms for transformation of individual savings into investments. 11. High investment risks.

4. Managers' vision and plans

The conversion programs were produced according to a standard structure and delivered to the State Committe Defense Branches of Industry in Moscow. They contain cost, profitability and production schemes but no market analysis. Generally managers have developed conversion project proposals aimed at anyone who is interested, in some cases with short business plans which are generally production oriented.

There is little cooperation between companies.

5. Consultants' impressions and strategy proposals.

There are several fields to explore for change and actions.

1. *Technologies:*
   Further development of the existing advanced technologies and possible application markets. Intercompany cooperation and new enterprises around these technology bases.

2. *Marketing:*
   The Russian domestic market as well as the CIS, Baltic and Eastern European countries are vital for the conversion enterprises' future. As the situation with open competitive marketing is new to these enterprises, these markets should be explored - market research as well as development of market communication and distribution channels. In some cases other international market are relevant as well.

3. *Internal company structure:*
   Restructuring the conversion enterprises, in some cases into holding-type structures, forming new companies and structures to create flexibility and adaptation to new markets.
   Development of marketing, financial and juridical services and competencies in the enterprises, transforming them from production units into real business companies.
   Strengthening the market and financial skills in management.

4. *Intercompany cooperation:*
   Creation of production joint ventures and attracting foreign companies as co-owners of some Kaliningrad conversion enterprises.
   Development of subcontracting cooperation between Kaliningrad conversion enterprises.

5. *Financing:*
   Foundation of financial-industrial groups (FPG in Russian) with participation of the Kaliningrad conversion enterprises and financial structures (funds, commercial banks) as well as joining the regional conversion enterprises to existing and future Russian FPG's.

6. *Consulting services:*
   Assistance in reorganization of enterprises, quality and productivity programs, market research and training programs for managers and workers.
   Establishing consulting and information networks in the Kaliningrad region.

7. *Regional institutional services:*
   Creation of modern training and retraining system in the Kaliningrad region.
   Employment (after retraining) as managers some of the retired officers and warrant-officers.
   Formation of good financial, communication, transport and informational infrastructure.
   Development of Russian and regional stock markets for quicker redistribution of shares of conversion enterprises leading to stronger ownership of enterprises.

II.2 FACTS AND SWOT ANALYSIS FOR EACH OF THE SELECTED COMPANIES

II.2.1 JSC THE BALTIC SHIPBUILDING PLANT "YANTAR"

1. Factual description and history

"Yantar" shipyard was established as State Shipbuilding Plant No. 820 on the site of ex-German shipbuilder Schichau on 8 July 1945. It was renamed The Baltic Shipbuilding Plant "Yantar" in 1966.

The enterprise has been constructing military ships since 1946. The main area of enterprise specialisation was construction of the antisubmarine missile destroyers (since the end of 1970s), escort ships, landing transport dock ships and tank landing ships. In 1980s the military output was on average about 85% of the total enterprise output.

Since 1958 "Yantar" has also been repairing civil ships. The plant also built 74 civil ships (mainly of sea-river class) from 1959 till 1967 and ten railway ferries of "Sakhalin"-type from 1969 till 1992.

The "Yantar" yard can construct ships with dead-weight up to 12,000 - 14,000 t. Maximum length is 170 m, max. width 26 m and empty draught is max 8 m. These dimensions are limited by the size of the floating dock that is used for ship launching.

There are two complexes on the yard. The older complex "Bourevestnik" (Stormy petrel) can construct ships to 2,500 - 3,000 t deadweight. The new complex "Yantar" was built in 1966-1969. It permits ships up to 12,000 - 14,000 t deadweight. About 1/2-1/3 of the ship that are built on this complex are under roof.

"Yantar" has a large mechanical shop that is working by interplant cooperation. It is producing shafts, deck mechanisms, winches, etc. for the "Yantar" yard and other Russian shipbuilding enterprises.

1966 "Yantar" started a consumer goods production - furniture for kitchens, valves for bathrooms, brackets for light switches, motorboats, watercycles and other items.

1992, following the Russian government's resolution, construction of two military ships was abandoned. In mid 1994 the financing of construction of two other escort missile ships of the "Neustrashimiy" (Fearless) class was stopped. The first of these ships has a readiness of 75%, the second one is on the slip. The antisubmarine missile destroyer "Admiral Tschabanenko" was launched in June of 1994 but its sea trials are delayed because of lack of government financing. Today the commission of this ship is planned for December 1995.

1993 The Baltic Shipbuilding Plant "Yantar" was transformed into a JSC with the Russian government presently owning 51 % of the shares. The big problem for the JSC "Yantar" is the State's non-payments for fulfilled work. The Russian Navy owes the yard 10,000 MRbl (including 4,000 MRbl debt of the Baltic Fleet), the Main Directorate Shipbuilding Industry owes 5,500 Mrbl (spring 1995).

2. Short facts

Item	1993	1994
Location, size, production area	Baltiyskiy district of Kaliningrad city, land area 151 ha., production space 600,200 sqm.	
No of employees	5,739	5,047
% of employed in mil production	49.2	48.0
Value of output in current prices, MRbl	15,544	37,150
Military output in % of output	70.4	78.4
Export in % of output		1
Reproduction cost of fixed assets by the end of 1994, MRbl.		88,278
Balance profit in current prices, MRbl.	1,082	537
Expenditure for conversion in current prices, MRbl.	1,304	1,570

3. SWOT analysis for "Yantar"

	Strengths	Weaknesses
Technology	Big industrial base. Large capacity for aluminium-magnesium alloy treatment.	Some changes necessary for civil production - hull treatment
Market position	Civilian order from Estonia (5 cargo ships x 12't) and Malta (6 bulk carrier ships x 12't) received. First Estonian ship almost ready for delivery. "Yantar" recently won a tender for pipe carrying ships for Gazprom in competition with Severodvinsk shipyard. Negotiations with Germany, Norway, Denmark ongoing.	Cannot compete with S Korea in ship construction time and capacity. Not big experience from traditional ship markets.
Product line	Big experience in military shipbuilding (destroyers, escort and landing ships etc.) Some experience in civil ships for Russia (sea-river types, ferries).	
Production capabilities	One of the five biggest Russian shipbuilding plants (excl submarine yards). Range 3,000 - 14,000 tons, max size 170 x 26 m hulls. The plant has big mechanical shops for production of shafts, deck mechanisms, winches etc.	Increase of steel processing, hull working and mechanical engineering capacity needed because of the differenes between military and civil ship structure. Some capabilities are surplus for the civilian shipbuilding (light alloy treatment f.ex.) Two military unfinished hulls take up place in production areas.
Finance	EBRD has approved 30% of the financing of RIK Container project (total 37 MUSD).	Serious financial problems with unpayed debts from government and Navy. Foreign customers and banks are reluctant to the prepayment schemes that are normal for international ship orders, because of "Russian uncertainty".
Human resources	Skilled specialists and workforce. Salary level is only 20% of Polish. "Yantar" has	

	an own school for training of workers' skills.	
Management	Top management is a positive factor.	Employees' situation is tense because of delays in salaries. There is a risk for strikes.
Organisation		Very long delivery times (also because of subcontractor and financial problems and problems with purchased semifinshed goods and equipment)
Ownership		Government has 51% and is a bad debtor. Management wants to have 25% of the government shares sold to finance the modernisation of the shipyard but the Navy staff blocked this.
Cooperations	J-V "RIK Container" with Italian company Moneta spa and Karaganda steel mill in Kazachstan for creating a container manufacturing plan on "Yantar" site. J-v with Fassmer, Germany, for light alloy smaller cutters (up to 30 m length). Norwegian company TTS is developing a plan for modernisation of "Yantar" plant.	
Localisation	Good European localisation compared to Far East and South American competitors.	Polish and Finnish competitors are equally well located.

	Opportunities	**Threats**
Markets	The mediumsize ship market is attractive. Demand top is around 6,000 - 8,000 tons. There is a market for sea containers in Europe and emerging in Russia The market for ship repair can be attractive.	
Competition		Strong competition from especially Polish yards with equal location and many years experience of civil markets.
Promotional factors	Special economic zone. The necessary improvement of Russian distribution infrastructure should become a promotional factor for containers.	
Restraining factors		Increase of prices for raw materials, energy and transport services in Russia
Uncertainties		Government influence. Russian economic situation - foreign customers and banks are reluctant to the prepayment schemes that are normal in ship contracts.

4. The company managers' vision and plans

The company managers would like to keep the yard as a specialised civil shipbuilding enterprise. The other production lines should be only secondary. The main task now is seeking for new civil orders and reconstruction of the yard in accordance with the specific needs of civil shipbuilding.

The civil shipbuilding conversion program foresees construction of
- multipurpose cargo ships, project 17380, with 12,000 t deadweight (1 per year)
- bulk carriers, project 60444, with 12,000 t deadweight as well (up to 3 per year)
- pipe carrying ships (1 per year).

Planned expenditures for this program's realisation are 61,560 MRbl (in prices of the first quarter of 1995).

In 1992 "Yantar" already received an order for five multipurpose cargo ships of project 17380 from JSC "Estonian sea steamship line" (Estonia). First ship of this series must be commissioned this year.

In March 1995 "Yantar" won the tender for construction of six bulk carriers of project 60444 for a Malta shipping company. Its competitors were shipbuilding companies from South Korea, Greece and one West European country.

Recently "Yantar" won the tender for an order from Russian "Gazprom" company for a number of pipe carrying ships, which secures employment for the next few years.

"Yantar" is also negotiating contracts with German, Norwegian and Danish customers and with JSC "Western Steamship Line" (Kaliningrad).

Civil ships differ in their construction features and production technology from the military ones. It is necessary to increase capacity for hull treatment, assembly and welding and to reconstruct the construction slips. The project of yard reconstruction and development is being prepared by the Norwegian company Total Transportation System (TTS). The necessary investment for full yard modernisation is estimated in 25-50 MUSD.

"Yantar" also has a more modest alternative investment program (approx. 7.5 MUSD). Its realisation will allow the production of two ships of 2,500 t deadweight and three ships of 12,000 t deadweight per year.

The main non-shipbuilding investment project is the building of a new plant for sea container production. The joint venture "RIK-Container" was formed in 1993 for this purpose. Its participants are the JSC "Yantar" (30% of capital), Karaganda Steel Mill (Kazakhstan) (38%) and the Italian engineering company Moneta Impianti S.p.a. (Milan) (32%). The planned volume of production is 20,000 sea containers annually. Total project cost is estimated in 37 MUSD. This project was approved by the EBRD in 1994. The bank is ready to invest up to 30% of the total project cost if "Yantar" can find a main investor.

5. Consultants' impressions and proposed strategies

"Yantar" shipyard is the biggest workplace in the region (5.000 people plus families) and important for the region's development.

A shipyard is a shipyard and international experience shows that experiments with radical diversification are very costly for society and not easily successful. (Swedish reference cases that can be studied: Uddevalla, Arendal, Kockums).

So the first choice would be to keep the yard as a specialised civil shipbuilding one and modernize it to become competitive. The market and competitive situation has to be studied carefully first to see if this is at all a viable proposition.

The main task then is to get more civil orders and to reconstruct of the yard to become more flexible, quicker in production and suitable for the specific needs of civil shipbuilding. "Yantar" could also build strategic alliances with some shipbuilding design bureaus in Russia to improve its competitive strength.

Ship repair business could be developed. It has the advantage of not being so sensitive to the "Russian uncertainty" (from customers' viewpoint).

The shipyard is also a machine-building industry which should give some opportunities.

The RIK Container project is a comparatively small project (635 persons) but is already approved by EBRD. The J-V is financially weak however and requires a substantial investment from someone.

Unused facilities should be closed down, sold or rented out.

If the market study shows that there is a longterm overcapacity in the world for ships of this size, a drastic restructuring and downsizing will be necessary.

II.22 EXPERIMENTAL DESIGN BUREAU "FAKEL"

1. Factual description and history

The EDB "Fakel" was founded in Kaliningrad in 1956. Since 1959 all scientific and production activities of "Fakel" were connected with Electric Propulsion System (EPS) for spacecraft orbit control and correction. "Fakel" provides a full cycle of development and testing, starting with research works and ending with production of EPS and plasma sources for space applications.

Since 1972 the Stationary Plasma Thrusters (SPT) of "Fakel" are in regular use in the orbit control systems of some Soviet/Russian military and civil spacecraft. These thrusters have no counterparts in the world. Their specific impulse is five times higher than that of the hydrazine-augmented low-thrust bi-propellant engines being used for the same purposes on Western spacecraft. They have very long lifetime - up to 15 years on a geostationary satellite.

"Fakel" has good experience in metal-working with hard alloys, stainless steel, titanium, ceramics. Other kinds of "Fakel" competence are welding processes with argon arc, diffusion, laser and electronic beam, spot welding, vacuum soldering, gasthermal and vacuum coating, magnetic impulse stamping, etc. "Fakel" has 19 vacuum chambers for fire and thermovacuum testing of SPT's.

The EDB "Fakel" remains 100% government-owned and will be subject to privatization in the future. Therefore "Fakel" has typical Russian state enterprise problems - in 1994 government debt to "Fakel" for produced goods was about 50 % of total production output.

In May 1992 a joint venture - International Space Technology Inc. (ISTI) - was formed for development, marketing and sales of EPS in the world satellite market. The founders of this JV were EDB "Fakel", the Moscow Research Institute of Applied Mechanics and Electrodynamics (RIAME) and the American company Space Systems Loral (Palo-Alto, California).

In 1993 the French firm SEP and in 1994 the American firm Atlantic Research entered into the composition of ISTI. The plans are to start commercial deliveries of "Fakel's" thrusters on the Western market already in 1996.

Another J-V company Front Range "Fakel" was formed with American research company Front Range Research for plasma technological sources development.

In the conversion program "Fakel" has proposed a number of market and development projects - a plasma surgical equipment, a house heating system and a number of products for household food preparation.

2. Short facts

Item	1993	1994	1995 (first half)
Location, size, production area	Moscow district of Kaliningrad city and test base in Neman city, land area 42 ha., area of building 47,000 sqm (including 21,000 sqm of production space)		
No of employees	1,909	1,835	1,624
% of employed in mil production	37.7	34.3	

Volume and value of output in current prices, MRbl	2,874	7,888	219.1 (first quarter)
Military output in % of output	32.0	25.1	
Export in % of output		3.9	
Reproduction cost of fixed assets as of January 1, 1995, MRbl			76,358.8
Balance profit in current prices, MRbl	801.3	3,666.9	
Expenditure for conversion in current prices, MRbl	58.6	75.2	

3. SWOT analysis for "Fakel"

	Strengths	Weaknesses
Technology	The ion plasma thruster technology is quite unique and competitive and "Fakel" is probably world leader in this field. It has several possible spinoff application areas. The medical device is one. Rich experience of work with special materials - stainless steel, titanium, hard alloys, ceramics.	The heating system and the remaining conversion projects have little in common with "Fakel's" specialist skills, (only the ability to work with hardmelting metals).
Market position	Space thrusters: Single supplier of its kind and has delivered thrusters for many Russian satellite programs. Entry to Western markets has started through American and French partners. First flight batch for Western partners is in production. Plasma surgical scalpel: Clinical evaluation has been done in Moscow and London. Field evaluation has been done in the Tjetjenian conflict(!) Heating System: Test units have been delivered to Bajkonur.	For the heating system and remaining projects Fakel has no market channels and no tradition as regards customer demands and competition.
Product line	Space thrusters: Very stable high quality and proven. Development is under way of more powerful versions for interorbit and longterm missions. Plasma surgical scalpel: First version is being replaced by a new version, modified according to clinical evaluation.	"Wild" diversification in the conversion project proposals into areas where "Fakel" has little experience of competition
Production capabilities	Small-scale high precision facilities with advanced processes for sophisticated metals, vacuum test equipment, etc., suitable for thruster production. Quality control is in accordance with Western standards.	No capabilities for mass production of consumer appliance types of products.
Finance		Unsatisfactory financing through the government.
Human resources	Significant resources for further R&D work in ion plasma technology -	Conversion projects do not utilise the real strength of "Fakel's" original skills.

	improvements of thrusters and application of this technology in other fields. "Fakel" has had the strategy to keep the skilled staff intact.	There is a risk of brain drain because of the financial situation.
Management	Charismatic director (chief designer)	
Organisation		
Ownership		100% government owned. Limited freedom in decision making.
Cooperations	1. J-V ISTI with Space Systems Loral, Atlantic Research (both USA) and SEEP (France) for mutual development and for marketing and sales of EPS on the world satellite market. 2. J-V Front Range Fakel with American research company Front Range Research for plasma technological sources development and production. Customer relations in Russia - few but stable.	In former USSR "Fakel" belonged to a network of ca 50 institutes in all areas. Some of the relations are now lost. There is very little cooperation between enterprises in Kaliningrad region.
Localisation		

	Opportunities	**Threats**
Markets	The world market (incl Russia) especially for geostationary satellites. "Fakel's" technology is seemingly very competitive and attractive. According to some information four main Western space firms are fitting their satellites with "Fakel" EPS. The world market for the plasma surgical scalpel which is especially suited for operations where there is a lot of bloodflow. Other application fields for plasma technology, including material processing for example. The very big need for house heating systems in Russia. The interest for ordinary household in certain types of own food processing.	Customers for house heating have little money - need but no demand.
Competition		Substituting technologies (chemical thrusters, laser scalpels, etc.). Possible barriers to entry due to pressure from other companies on their governments. Risk that the proprietary technology is copied. Other systems for house heating when demand starts to grow.
Promotional factors	The new openness between Russia and the rest of the world.	
Restraining factors		Possible reduction of space programs. The unwillingness to cooperate between enterprises on the development of the

		region.
Uncertainties		Government policy. General political and economic situation

4. The company managers' vision and plans

Ion plasma engine technology (Electric Propulsion System) is "Fakel's" original technology. It is globally unique and has attracted international interest. It has led to two joint-ventures with American and French partners. It is patented.

The conversion program has lead to a number of civilian projects and proposals:
- The thrusters themselves are a dual-use technology - military as well as civilian satellites.
- Plasma surgical complex, "Plasar" and "Gemoplas" - a surgeon's scalpel based on the plasma technology with the advantage of efficiently cauterising the wounds
- Drying boxes with IR heating for preservation of herbs, mushrooms, vegetables, fruits, etc. aimed at small-scale users and households
- Modular Heating System and Compact Heating System for heating and hot water supply for residential areas, hotels and industries
- Other projects including production of sublimated foods, manufacturing of beverage coolers based on intensified evaporation technique, freezing cryotechnique for piscatorial ships, where "Fakel" wants to create joint-ventures.

The plasma surgical complex requires 330 TUSD investment to be completed. The product development is in its final stage and 40 units the first generation have been delivered to Russian and CIS hospitals. A clinical evaluation has been done in England, Germany and South Korea. It is a spin-off of the thruster technology (although not of the same high sophistication level).

The Heating System is meant to become a high volume production product, 4.000 units per year, and requires that a new production facility is set up. The necessary investment according to "Fakel's" plans is about 100 MUSD. (The sales value is calculated to 150 MUSD/year)

The short-term goal is to achieve 50% civilian production until 1998 and 30-40% export including space products. First sales of thrusters to Western market will be in 1996.
The long-term goal is to have a strong position in the space field and to diversify "Fakel" into areas where it can expand in civilian markets.

5. Consultants' impressions and proposed strategies

Fakel's original technology is the most obvious high-level technology that meets the eye in Kaliningrad. It seems very important for the region to maintain this resource.

The company has a secretive attitude (because of a recent sharpening from the government's side), especially around the thruster departments. According to "Fakel" managers the joint-ventures function well.

Limiting factors for the company are:
- 100% government ownership.
- Short-term financial problem - the government is very slow in paying.
- "Fakel" is a qualified and very specialised scientific design bureau with limited and

small-scale production capabilities, and no resources or experience from rational high-volume production.

Our impression is that "Fakel" is developing the heating system and other projects as a sideline for the company's survival.

"Fakels" diversification is of no apparent interest for the space joint-venture partners. In effect the diversification means that "Fakel" strays away from what makes it really attractive. If the satellite partners become commercially dependent on the "Fakel" technology, they will probably not accept any deterioration of the human resources around the technology. Also the idea to have one profitable side business supporting an unprofitable main business would be an unstable corporate strategy.

Consequentially what we think will happen is that "Fakel" restructures itself. The space business will be separated as a concentrated research and design bureau with small production of thrusters and vital components. The other projects require a more open attitude outwards and are likely to be organised to be free or almost free from state ownership.

So our strategy proposal is as follows:

1. The first point is to secure and maintain "Fakel" as high-technology developer in its special field.
2. The second point is that "Fakel" systematically searches for spin-off applications of its original technology for commercial business development. In sufficiently attractive application areas "Fakel" could switch to a customer-driven strategy and develop systems concepts around the spin-off products.
3. The plasma surgical complex application is very logical and requires only a relatively small investment. The market strategy deals with the creation of market adoption and channels in the hospital field.
4. "Fakel" could be subcontractor to Russian and foreign companies for treatment of special materials and high precision parts manufacturing.
5. As regards the investment proposal for heating systems, it requires a very large sum of money - with regard to the general financial situation in Russia, "Fakel's" lack of appropriate market experience and production resources and the fact that it diversifies the company into an unknown medium-technological market. Probably the production of heating systems could be started with a much lower investment if "Fakel" combines with a company that already has the necessary mass production facilities.

II.23 JSC "KVARTZ"

1. Factual description and history

This enterprise was founded in Kaliningrad in 1959. Later it became the head plant of the "Kvartz" Production Association with branch plants in Bagrationovsk, Ozerky, Chernyakhovsk and Sovetsk (all in the Kaliningrad region). It was dissolved in 1990-1992. Now all former branch plants of "Kvartz" are independent JSC's without any direct relation with the former head plant.

The main specialisation of Kaliningrad "Kvartz" plant (JSC "Kvartz" now) was production of special technological equipment for Soviet electronic and defense industries (vacuum coating equipment for semiconductor devices, condensers, resistors, microcircuits, production, and equipment for production, of superclean and monocrystallic materials). This equipment accounted for 69% of total production volume in 1992.

The second line of production activity was the manufacturing of computers, peripheral equipment and computer-based control systems (13% of total production volume in 1992). In the end of 1980s "Kvartz" produced several pilot units of the first Soviet supercomputer (analogue of the American CRAY computer) according the original Soviet technology.

"Kvartz" also had a large-scale assembly and mounting of one- and multi-layer (up to 14-16 layers) printed circuit boards on the base of German and English equipment.

The military production (mainly for other defense enterprises but not for armed forces directly) accounted for 40.6% of "Kvartz'" total output in 1991 but only 13.5% in 1992.

There was also production of medical equipment and some consumer goods.

In 1994 "Kvartz" plant was privatised according to the "second model" (51% of shares to employees). Then employees formed a limited partnership "Kvartz-EM" that has 42.9% of the JSC shares.

The government has a so-called "golden share" in the JSC "Kvartz" that gives it a veto right in many questions.

Military orders have sharply dropped since 1991-1992. The military output was only 12.6% of total output in 1994 and the special technological equipment share of total output was reduced to 15.1% (first half of 1995).

The lack of demand for "Kvartz'" computer equipment is caused, apart from the conversion reasons, also by the wide spread in Russia of the imported personal computers of PC type with superior characteristics. As a result in the first half of 1995 the computer equipment accounted for only 0.07% of output.

In 1992-1993 the list of "Kvartz" products changed by 80%. Now it produces a very wide range of consumer goods. The JSC has an own commercial bank ("Kvartz'" Bank), the Exhibition Trade Centre, several stores, cafe, bar, printing-house, etc. In the first half of 1995 the consumer goods accounted for 46% of the "Kvartz" total output and production services for another 26%.

2. Short facts

Item	1993	1994	1995 (first half)
Location, size, production area	Central district of Kaliningrad city, land area 13.4 ha, production space 47,800 sqm		
No of employees	2,702	2,121	1,710
% of employed in mil production	18.1	11.2	
Volume and value of output in current prices, MRbl.	3,060	7,557	6,199
Military output in % of output	21.4	12.7	
Export in % of output		21.8	
Reproduction cost of fixed assets as of January 1, 1995, MRbl.			149,095.5
Balance profit in current prices, MRbl.	745.6	920.5	144.8 (first quarter)
Expenditure for conversion in current prices, MRbl.	861.6	3262.3	50.0 (first quarter)

3. SWOT analysis for "Kvartz"

	Strengths	Weaknesses
Technology	Top technology is the vacuum coating technology with a wide range of application areas. Experience in multilayer printed circuit board production. "Kvartz" used to be one of the leading companies in electronics and computers in Russia.	Obsolete computer technology.
Market position	Some international interest (S Korea, Canada, Hong-Kong, India, Arab Emirates) in the vacuum coating technology for technical and other purposes (decorative, filtering windows, semiconductor manufacturing) Consumer goods are sold in the local Kaliningrad market	The design standard for the consumer products is not suitable for Western markets today.
Product line	As result of the conversion, main product line is consumer appliances and similar (safes, water pumps, electronic bells, air conditions, induction oven plates, etc.) High technology products (vacuum coating equipment) are presently only 15% of the sales. Electronic products are almost at standstill.	Too wide range of low-technology products that make little use of "Kvartz'" original skills.
Production capabilities	Very large production resources including mechanical manufacturing and assembly, electronic assembly, printed circuit board production, electroplating. "Kvartz" has longterm experience in mass production of electronics and	The large electronic department has no usage since several years and is rapidly becoming obsolete due to the development pace of computer technology and Western competition in the Russian market.

	manufacturing of special technological equipment There are some modern machine tools including some Western.	
Finance	"Kvartz" has created a commercial bank of their own. It has also opened own sales shops for the consumer products and started to rent out some office space to other companies.	Lack of working capital. Very big unused facilities which must have a draining effect on the working capital.
Human resources	People are generally positive to any kind of production that can help the company, high-tech or not.	Many skilled workers and engineers have left "Kvartz".
Management	Capable of diversification and change of the company's strategic orientation. The marketing director has started to travel abroad which will give market orientation.	It's a question whether the management (and present owners) are capable of the radical restructuring that will be necessary.
Organisation	There is a plan for restructuring of the company	The original "Kvartz" group of companies was dissolved and technological connection between the companies broke. For example the design bureau was separated from the Kaliningrad works, has been reduced from about 500 to 40 persons. The remaining "Kvartz" has a traditional functional inflexible organisation.
Ownership	JSC of open type. Employees and management have formed a limited partnership, Kvartz-EM, owning about 43% of shares.	Government has a "golden share". There is an impression that the internal group of shareholders are negative to external investors.
Cooperations	With Vekshinskiy Research Institute of Vacuum Technology in Moscow and other Russian institutes for further development of the high-tech product line.	No joint-ventures yet. Connections broken with former branch plants in the region.
Localisation	13.4 hectares close to the city center	

	Opportunities	Threats
Markets	The international and Russian markets for vacuum coating for decorative and protective purposes. "Red" assembly of computer equipment and household products for Russian market. Subcontract production of PCB's for foreign and Russian companies. Consumer goods markets in ex-USSR.	
Competition		Big international competition in the Russian computer and consumer appliance markets.
Promotional factors	Special economic zone	
Restraining factors		Financial
Uncertainties		Government's "golden share"

4. The company managers' vision and plans

The current strategy of the JSC "Kvartz" is a wide diversification. This is a method of survival in the period of economical crisis. Therefore some conversion credits were directed into consumer goods development and production. But the prospect program of the JSC "Kvartz" work foresees five main directions:

1. Special technological equipment;
2. Electronic equipment;
3. Industrial equipment;
4. Consumer goods;
5. Trade and commercial activities.

"Kvartz" will be transformed into the structure of a holding group with several small and mediumsized enterprises. This structure will be oriented towards marketing and utilization of the scientific and innovation potential that JSC "Kvartz" has.

The conversion program of the JSC "Kvartz" foresees expenses of 4,500 MRbl (about 1.5 MUSD) in 1995-1996:

- 2,165 MRbl for production investments in special technological equipment with planned capacity 24,000 MRbl per year (vacuum units for anticorrosive coatings of gas- and oil pipelines, units for metallic coating of large size films used for microelectronics and other industry branches, units for polishing of goods from different metals).
- 210 MRbl are planned to invest in communication equipment production (satellite TV-system, modules and assemblies for protection of information systems)
- 626 MRbl are for investment in production of technological equipment for trade and public catering (packing equipment, dough mixing machines, noodles cutting machines, mini-bakeries, etc.)
- 1,500 MRbl for various consumer goods production (including over 700 MRbl for production of unique unbreakable all-metal thermoses with long preservation of temperature. The proposed technology has no analogies in the world).

5. Consultants' impressions and proposed strategies

"Kvartz" has good opportunities considering their vacuum technology, production and assembly experience and their household and office product experience.

The production facilities are of an impressive size and "Kvartz" has a good tradition in low volume special equipment production as well as large volume electronic production and assembly.

However a lot of the production departments have very oversized capacity and a low degree of utilization since 91-92 and will gradually become obsolete. Maintenance and general order are disturbing in some areas compared to the standard of Western competitors.

Line oriented production layout has been introduced in some departments, but in most there is the traditional functional organisation, with the typical enormous building ships with overhead crane as main internal transport means.

A restructuring of the whole company will be necessary (and is also in line with the director's plan). Our suggestion would be this:

1. Creation of a separate company for the vacuum technology with strong strategic alliance with vacuum technology design bureaus. This company will have light production, assembly and testing but no heavy production. The heavy production should be bought from other companies within the "Kvartz" group or other Kaliningrad companies. The company will be very market oriented and have two marketing managers - one for the electronic and laboratory markets and one for the fashion and consumer application industries.
2. Creation of a specialised consumer goods company with departments for sales and distribution. This company will establish dealer networks in the large region around Kaliningrad including Baltic states, Belorussia, Ukraine, Northwest Russia, etc.
3. Selling (in the form of J-V or similar) of electronic production capacity to foreign electronic industries in the West, S Korea, Taiwan, etc. for the production of Western consumer electronics and computers for the ex-USSR markets.
4. Create a company for metal treatment which will sell its capacity on a subcontractor basis, not only to the other "Kvartz" companies but to a wider range of industries, in the region and maybe abroad.
5. Close down and sell off (rent out) any facilities that cannot within a reasonable time get a sensible use within the "Kvartz" structure.
6. "Kvartz" has to get rid of the government's "golden share" and open up for outside investors.

II.24 JSC "STROYDORMASH"

1. Factual description and history

The enterprise was founded in Kaliningrad in 1956. The main civil specialization of the plant was production of road vibration rollers and road marker vehicles. The enterprise is single producer of the DU-54 and DU-72 rollers in ex-USSR. It is also single producer of road marker vehicles.

About 2/3 of "Stroydormash" production was military (1989). The plant produced heavy mechanized bridges, universal machines for light wooden bridge building, vehicles for military airfield runways marking and metal missile-launcher decoys.

The plant has rich experience in hydraulic driving gears development and production. as well as production of large forging and stamping goods and metal structures.

In 1993 "Stroydormash" was privatized according to "second model". Then shares were redistributed - 25% of shares were bought by the company "Fintrast" (later these shares were re-sold to one private person).

The military production is fully stopped.

The annually roller production dropped from 1,200 per year in 1980s to 422 in 1994. The production of road marker vehicles also sharply dropped, from about 400 to 26 units per year.

2. Short facts

Item	1993	1994	1995 (first half)
Location, size, production area	Baltiyskiy district of Kaliningrad city, land area 18.87 ha., production space 23,000 sqm		
No of employees	1,163	934	822
% of employed in mil production		0	0
Volume and value of output in current prices, MRbl.	1,638.0	4,340.1	4,059.9
Military output in % of output		0	0
Export in % of output		6.9	
Reproduction cost of fixed assets as of January 1, 1995, MRbl.			54,216.7
Balance profit in current prices, MRbl.		532.5	59.4 (first quarter)
Expenditure for conversion			

3. SWOT analysis for "Stroydormash"

	Strengths	Weaknesses
Technology	40 years experience of roadbuilding and repair techniqes and the types of products that will form the company's future. Rich experience in normal hydraulics	

Market position	Dominant in Russia (single producer of road markers and certain types of rollers). Good position in CIS and Baltic countries. Good service network for the company's products over whole Russia (organised by the ex-Soviet ministry of roadbuilding machines)	No market position outside ex-USSR.
Product line	Well-defined specialisation and products with appropriate quality for Russian market. Design is simpler and less expensive than Western types. Development of several new types of civil vehicles that will meet demand from the market.	Design and quality probably not sufficient for Western markets.
Production capabilities	Flexible, in relatively good harmony with the typical order structure. Big forging and stamping capacity, metal treatment capacity 7.000 tons/year. Welding of large metal structures	Painting equipment not modern. Capacity utilisation is at present only 30%. A lot of available facilities are not in use. Maintenance has been neglected for a long time. Most of the production equipment is very old.
Finance		Severe lack of working capital means that the company cannot answer all customer orders. Little experience of finance and no bank among shareholders.
Human resources	Cheap but skilled labour force.	The reduction of people from about 1,700 to 900 may have led to some drain of previous skills.
Management	New director who is also chairman. Good old chief engineer who has been with the company since it started 56. There is a longterm strategy under development.	Little experience of marketing and market research.
Organisation		Traditional ex-Soviet functional department organisation and little use of subcontractors beside raw material suppliers
Ownership	Only 20% state ownership which will be auctioned end 95. Good range of stockholders and one Russian owner group with ideas for the company's future. The enterprise is free to decide its strategy in all aspects	
Cooperations	The company uses American and Italian engines	No joint-ventures or strategic alliances. No direct international relations
Localisation	19 hectares very close to Kaliningrad cargo railway station	

	Opportunities	Threats
Markets	There is demand for "Stroydormash's" products. There is a new state program for road machine production. "Stroydormash" has a good chance to win tender.	Seasonal fluctuation of demand (cash flow problems)

	There was a proposal from an English and a Polish company for joint assembly of buses. The new manager could perhaps actualise this.	
Competition		No big problem yet but products are not very sophisticated - other plants in Russia could take up production of the same kind. There may be foreign competition with secondhand machines.
Promotional factors	Special economic zone Internationally low labour cost for foreseeable time. There is a very big potential demand in Russia for roadbuilding and repair.	
Restraining factors		Investment crisis in Russia. Customers have demand but no money (especially public organisations)
Uncertainties		Tax regulation. The transit conditions through Lithuania, especially for nonferrous metals. General political and economic situation

4. The company managers' vision and plans

The conversion program aimed at stopping all military production and developing three new types of equipment

1. A wheel tractor based manipulator (SMUT-6131) for construction and storage sites.
2. A small-size multipurpose chassis (MSS-1) with exchangeable equipment, for loading/unloading, earth moving and other work.
3. A vehicle for road surface repair work (DE-21M-03).

The conversion program was partly financed with state loan through Prombank at 20% interest. A small number of above mentioned vehicles have been produced since 1992.

The company wants to find an investor with 1.3 - 1.5 MUSD (minimum needs) for the following purposes:
- Badly needed working capital, 900 TUSD, to enable the company to produce according to incoming orders for rollers and roadmarkers.
- 300 TUSD for new painting shop to increase quality and durability. This is a bottleneck at present.
- The rest is for other equipment improvements.

Limiting factors for the company are:
- Short-term financing which is critical
- Some technical factors in the painting and mechanical shops

The short-term strategy is "everything that can give money".
The long-term strategy is aimed at marketing in the first place, and to work up quality to Western competitive level and maintain the same specialisation as regards product line.

The new director (since recently chairman of the board) wants to find an international J-V partner, preferably from the roadbuilding industry, who could have a significant part of shares in "Stroydormash".

5. Consultants' impressions and proposed strategies

There is a relative harmony between the product character, the available markets and the general character of the company's production process. The company is producing something it has long experience of. This is positive.
The conversion program just stretches the product line but does not lead to any diversification into unknown territory. This is also positive.

Capacity utilisation is only about 30% at present, varying between shops. A lot of the machinery is old and may have to be replaced. The need for working capital would shrink if the production was concentrated and facilities down-sized.
Negative impressions are
- All the unused facilities that are deteriorating, depressing and probably costly.
- Lack of maintenance. Western standard requires cleanness and orderly layout and flow of material organisation because it has a great influence on quality and delivery dependability.

The impression of the management is good. There is an openness and the new ownership is promising. The chief engineer is the soul of the company culture but there is a warmth between him and the new director who is also chairman of the board. A new managing director is being appointed to take the daily operations.

The market strategy should be to hold the position in Russia and CIS which might require emphasis on activities to meet upcoming competitors. It is important that "Stroydormash" wins the state tender! The service network must be kept alive and happy. In some international markets the quality may be sufficient considering the competitive cost level of Russia.
As long as the Russian market considers itself satisfied with lower quality than the Western markets, the quality level of Russian companies will not go up. If "Stroydormash" could find an international joint-venture partner it would introduce Western customer requirements and this would gradually lead to Western quality and standards. Some changes of design standard may be necessary for "Stroydormash" to be successful on Western markets.

To get around customers' lack of money, "Stroydormash" could create a leasing company for the company's products. This would require close ties with a stable bank.
To start internationalisation in a soft way "Stroydormash" could produce different hydraulic units and components as subcontractor to foreign firms.
Production strategy would be to concentrate production and inventory (improvement of productivity and cost), clean up and maintain buildings and equipment (influences quality), straighten up flow of material and inventories and work down production lead times (this reduces working capital and improves customer relations). The necessary investments in production equipment should be carried through for quality reasons.

II.25 JSC "KALININGRADBUMMASH"

1. Factual description and history

The plant was founded as a repair and mechanical enterprise. Then it became a casting and mechanical plant. In 1960 the enterprise became experimental plant of paper making equipment.

The main production of "Kaliningradbummash" was valves and regulation armature for paper making equipment and some non-standard parts for modernization and repair of pulp & paper industry in the Kaliningrad region. There used to be a branch office of the Central Research Institute (CNII Bummash) at the enterprise.

The second production line of "Kaliningradbummash" (about 48% of total output in 1989) was production of heavy military road-building vehicles based on truck chassis from Kharkov (Ucraine).

A third line was a range of consumer goods - furniture, accessories for furniture, plastic goods.

A fourth line was a large casting shop (castings from steel and cast iron).

When the military orders disappeared the enterprise came into a very deep crisis.

In the beginning of 1995 the whole enterprise was bought by Autotor, a Kaliningrad company owned by FPI, International Foundation for Privatization and Foreign Investment, Moscow. In the group is also "Energotransbank".

The new owners have started a drastic restructuring of the company into a holding-type structure with several independent business areas, some of them new.

2. Short facts

Item	1993	1994	1995 (first half)
Location, size, production area	A.Kosmodem'janskogo town near Kaliningrad city, land area - 20.77 ha., production space - 22,000 sqm		
No of employees	641	439	387
% of employed in mil production	0	0	0
Volume and value of output in current prices, MRbl.	615.8	991.7	1373.1
Military output in % of output	0	0	0
Export in % of output		13.9	
Reproduction cost of fixed assets as of Jan 1, 1995, MRbl.			23,732.5
Balance profit in current prices, MRbl.		- 75.0	- 70.0 (first quarter)
Expenditure for conversion, MRbl.			

3. SWOT analysis for "Kaliningradbummash"

	Strengths	Weaknesses
Technology	Experience in paper-making equipment that may be used for production of oil and gas armatures as well	
Market position	Single producer in the region of their type of equipment for paper&pulp and oil ind.	
Product line	In transition towards several new market oriented lines	
Production capabilities	Big casting capacities	The enterprise needed large and expensive reconstruction
Finance	New ownership with connection to good financial base for the future.	Financial problems (big debts, lack of working capital, etc.) prior to new ownership
Human resources		Leaving of skilled workers
Management	Market oriented new management	
Organisation	New holding-type structure under creation with a very interesting business development scheme, among this a special car assembly and a car renovation plant.	
Ownership	JSC has strategic investors with good experience in commerce and finance ("Autotor" and "Energotransbank")	
Cooperations	J-V with Bumar-Fablok (Poland) about cranes. German firm for purchase and delivery of cars and chassis.	
Localisation	Site with engineering infrastructure which may be base for new business creation	

	Opportunities	Threats
Markets	The Kaliningrad region and may be other regions of Russia market for cars The Kaliningrad market for cranes Russian domestic market for paper making and oil equipment Castings for the Kaliningrad regional market	
Competition		Direct sales channels for foreign cars Other Russian conversion enterprises for oil equipment
Promotional factors	Special economic zone	
Restraining factors		Financial?
Uncertainties		General political and economic situation

4. The company managers' vision and plans

The new owners plan to transform the JSC "Kaliningradbummash" into a holding company. The JSC probably will be divided into several juridical independent subsidiaries and several new companies on the plant site will be created.

"Autotor" firm has five main investment projects for "Kaliningradbummash":

a) Renewal of imported second-hand cars of exclusive German types. A 10,000 sqm plant is being set up in one of the old buildings.

b) Assembly of special motor vehicles (police, ambulance, refrigerators, catafalque, etc.) on the base of imported chassis. This will take place in another of the existing buildings.

c) Assembly of cranes on wheeled chassis in J-V with a Polish company (Bumar-Fablok S.A.)

d) Production of armatures for oil & gas industry and for pulp & paper industry. This is the existing line which will carry on.

e) Utilisation (melting) of ex-military hardware (rockets, torpedoes, etc.) in enterprise casting shops, with preliminary extraction of precious metals.

Autotor will organise a trading company for market research and selling of all products from the new structure.

The goal of FPI is to find investment money at normal international interest rates.

5. Consultants' impressions and proposed strategies

"Kaliningradbummash" was in a very critical situation before the latest change in ownership. The plans of new owners include a complete restructuring of the company and new uses of some of its facilities.

To us it seems realistic and well-defined. The successful restructuring of JSC "Kaliningradbummash" on a private basis would be a good example for some other conversion enterprises.

II.26 JSC "GUSEV PLANT OF LIGHTS ENGINEERING EQUIPMENT"

1. Factual description and history

The enterprise was founded in Gusev in 1956. It was a leading producer of searchlights in ex-USSR (nearly 1 million units were annually produced in the past, whereas the total Soviet demand was 1.5 million). The enterprise produced searchlights of 146 different types.

A second production line was airfield lights equipment (also here the enterprise was leading producer in ex-USSR). 87 ex-Soviet airports (or 97%) are equipped with the lights equipment from Gusev.

A third production line was starting and regulating gears for lights engineering equipment, switches, transformers for lamps.

A fourth production line was consumer lamps (chandeliers, sconces, desk lamps, etc.).

The military production accounted for about 35% of the total output (searchlights and IR searchlights for battle tanks, sea searchlights, etc.).

The plant has casting and galvanic shops. There are some modern technologies including rotary pressing of reflectors. There is a shop for production of electronic control and power supply units.

In 1993 the enterprise was transformed into JSC "Gusev plant of lights engineering equipment" according to the "second model" of privatization. Now employees and ex-employees (including pensioners) have 59.69% of company shares. The remaining 40.31% share belonge to commercial firms and banks (Moscow companies 34.9%, Kaliningrad bank "Investbank" 5%).

The military production is almost fully stopped (0.5% of total production volume).

The production of searchlights was reduced from about 1 million to 350,000 units per year by 1994. The most optimistic forecast for 1995 is 200,000. The main reasons for this reduction are break of production cooperation with other plants and lack of working capital. But there is demand for searchlights in Russia and in other CIS states and production capacities in the enterprise are kept.

There are the orders for airfield light equipment (for example the JSC takes part in restoration of Grozny airport in Tschetschenya). There is in production the equipment for six Russian airports (Magnitogorsk, Penza, Chita, Tomsk, Grozny, Norilsk). But in past the plant produced up to eight the airport systems per year. And many of new ordered systems are already in their second year of production. The main reason for the extension of production cycle is customers lack of money. The Gusev plant does not want to work without preliminary payments. There is however stable production cooperation with other plants.

The production of starting and regulating equipment was fully stopped in early-1995 because of sharp growth of prices for copper-wire windings.

The production of consumer lamps was sharply reduced because of limited demand.

2. Short facts

Item	1993	1994	1995 (first half)
Location, size, production area	Gusev city, land area 16.1 ha., production space 58,700 sqm		
No of employees	1,864	1,578	1,236
% of employed in mil production			
Volume and value of output in current prices, MRbl.	2,914.9	4,937.4	4,665.0
Military output in % of output		0.5	0
Export in % of output			
Reproduction cost of fixed assets as of January 1, 1995, MRbl.			49,125.3
Balance profit in current prices, MRbl.		417.2	10.8 (first quarter)
Expenditure for conversion, MRbl.			

3. SWOT analysis for "Gusev plant of lights engineering equipment"

	Strengths	Weaknesses
Technology	Almost 40 years experience in lights engineering equipment production. There are some modern technologies (for example rotary pressing of reflectors).	
Market position	Leading producer of searchlights in ex-USSR. Also leading producer of airfield light equipment.	
Product line	Well-defined specialisation and products with appropriate quality for Russian market. Design is simpler and less expensive than Western types.	Design and quality lower than Western standards
Production capabilities	Big capacity for mass production of lights engineering equipment	Necessity of some equipment modernization
Finance		Lack of working capital
Human resources	Own design bureau. Skilled but cheap labor force.	
Management	New director is representative of Moscow firms that have company shares and he is also co-owner of enterprise. Good team with deputy director of economy (former director of plant).	
Organisation		Soviet-type functional department organisation
Ownership	Over 40% of shares belong to commercial companies (Moscow) and "Investbank" (Kal)	
Cooperations	License agreement with Czech company "Electrosignal" about production of its airfield light systems.	Break of economical connections with some important suppliers.

	Negotiations about possible creation of joint venture with Austrian company TRIDONIC.	
Localisation		

	Opportunities	Threats
Markets	Market for airport light equipment in the CIS. Market for searchlights and domestic light equipment in the CIS External markets (for example for light equipment with energy-saving halogen lamps).	Potential customers have not enough money today.
Competition		Foreign competition on the Russian market of domestic light appliances. Appearance of new potential competitor not far off (the well-known Holland company Phillips starts essential investment into Polish plant "Farel" in Ketrzyn (Olsztyn region)).
Promotional factors	Special economic zone	
Restraining factors		Sharp growth of prices for some important kinds of materials and for energy.
Uncertainties		General political and economic situation

4. The company managers' vision and plans

The company managers do not foresee a radical change in the JSC specialisation because the products are necessary for customers. The customers' lack of money is perceived as a temporary situation. Therefore the keeping (as far as it is possible) of the skilled workforce and production capacities are one of company's strategical directions. But the reduction of employees cannot be avoided because the production capacities have a utilization of only 28% now. In this situation the JSC tries to receive low-interest credits for organisation of production of new items. If they receive these credits the JSC has the following plan:

a) To equip Kaliningrad "Khrabrovo" airport with modern light signal equipment

b) To organise production of energy-saving searchlights with sodium and metal-halogen lamps

c) To organise production searchlights with powerful (5,000 W) halogen lamps

d) To organise production of energy -saving consumer light appliances with halogen and luminescent lamps

e) To organise production of a wide range goods for farmers (forage crumble equipment, smoking sheds, heating boilers, small mills, small carts, doorlocks, etc.).

There are also some other projects and ideas. They include production of wooden window and door frames for export, organisation of assembly of consumer electronics on the base of the electronic shop. The JSC also has experience in production of domestic TV satellite antennas.

5. Consultants' impressions and proposed strategies

It seems that the Gusev JSC has a well-defined production specialization and has good position in the Russian market and markets of other ex-USSR countries. There is big experience in development and production of lights engineering equipment and large production capacities. But the enterprise needs technical reconstruction and replacement of some obsolete equipment. Some foreign technical assistance would probably be useful. It is necessary also to help in creation of market-oriented structure and establishing a good distribution network within Russia and other ex-USSR republics.

The good variant for Gusev company, as it seems, would be attraction of foreign investments in exchange for a part of enterprise's shares. According to East European experience the domestic electrotechnical industry is sufficiently attractive for such well-known Western firms as General Electric, Philips, etc. A foreign partner could assist in the company's restructuring and could give the enterprise real market channels for export sales. Foreign aid would be useful also for improvements in design, quality and technical characteristics of Gusev's lights equipment. In exchange for investment and technical assistance, the foreign investor could get the possibility to take part in the unavoidable future large reconstruction of many of the Russian civil airfields and ports. The searchlights of Gusev plant are widely used in construction which is important with regard to the expected future contruction "boom".

Production of goods for farmers is in our view only a temporary measure for the company's survival in crisis conditions. Long-term large-scale changes in today's plant specialization seem pointless. The company must keep its "face" but transform from Soviet-style production plant to real market-oriented JSC.

II.27 JSC CARAT

1. Factual description and history

Chernyakhovsk machinebuilding plant "Carat" was established in 1968 as a branch enterprise of Kaliningrad PO "Kvartz". It specialised mainly on mechanical treatment and production of high-vacuum diffusion pumps for vacuum coating equipment. There was a plan in second half of 1980s to organise on the base of "Carat" a production of industrial robots. The machinebuilding design bureau of robotics was formed. But these plans were not realised.

In 1990 "Carat" left "Kvartz" PO and became a rent enterprise. In 1992 plant was transformed into joint stock company of closed type.

"Carat" is partly changing its business scope into production of packages from corrugated cardboard. The enterprise has developed equipment for this purpose and started production both of this equipment and of packages (up to 100,000 packages per month).

2. Short facts

Item	1993	1994	1995 (first half)
Location, size, production area	Chernyakhovsk city		
No of employees	803	494	435
% of employed in mil production	36.7	37.4	0
Volume and value of output in current prices, MRbl.	856.7	2242.5	2,638.4
Military output in % of output	0	0.8	0
Export in % of output		4.9	
Reproduction cost of fixed assets as of January 1, 1995, MRbl.			25,104.3
Balance profit in current prices, MRbl.	120.3	- 286.3	62.0 (first quarter)
Expenditure for conversion, MRbl.	82.2	0	0

3. SWOT analysis for "Carat"

	Strengths	Weaknesses
Technology	Plant specialized in robotics in past and produced package-making machines	Only some fragments of previous production line remain
Market position	Enterprise has delivered 100,000 packages per month for Kaliningrad region and some export markets since 93-94. Deliveries of packaging equipment and air-conditionong systems to ex-Soviet countries	
Product line	Flexibility in product line depending on profitability and market demand	

Production capabilities	There is some modern imported equipment	Relatively limited production capabilities - only mechanical treatment and painting Plant had been a part of "Kvartz" PO and had specialized on services for the head plant in Kaliningrad Not very good possibilities for own development of packaging production equipment
Finance		Losses 1994 and not a very good position now
Human resources		Loss of the most skilled workers
Management	Market-oriented general director and good management team	
Organisation	Holding-type structure	
Ownership		Joint-stock company of closed type may be obstacle for external investment
Cooperations		No joint-ventures
Localisation	Chernyakhovsk is major transport junction on the route from Moscow to Kaliningrad and has a railway to Poland with West European gauge (1,435 mm)	

	Opportunities	Threats
Markets	There is a market for packaging in the Kaliningrad region - fishing and food processing industries for example. There are potential markets for packaging in Germany, Holland, Poland, Lithuania, Latvia, Estonia and in some of Russian regions	
Competition	"Carat's" packing equipment has lower price than its Western counterparts	There is a project for large-scale package production at Sovjetsk pulp & paper industrial combinate. There are three plants in Russia except "Carat" that produce such equipment. Western packing equipment has better quality
Promotional factors	Special economic zone	
Restraining factors		Market channels
Uncertainties		

4. The company managers' vision and plans

In the beginning of the 90s the company was transformed into a holding-type structure. consisting of head firm and several branches. Among the branches is the limited partnership "Vega-Carat" (design bureau), the limited partnership "RMP-Carat" (repair and mechanical enterprise), the limited partnership "Amalgam-Carat"

(production of metal goods), the limited partnership "Europe-Carat" (network of groceries). These structures are working on basis of agreement with the head firm.

Main strategic principle of "Carat" is a wide diversification. Products that have good demand (even if they are not high-technological) are preferable. Now "Carat" fights for any customer orders. About 1/3 of "Carat's" revenues in the first half of 1995 came from heat from the enterprise's boiler that serves not only the plant itself but also Chernyakhovsk city. JSC has three stores in Chernyakhovsk, one store in Kaliningrad and a technical & trade centre that is engaged in wholesale and retail trade of "Carat" products.

Today machinebuilding in "Carat's" total turnover does not exceed 20%. According to the general director this figure will remain in the future.

It plans to make a development and production of packaging and packaging equipment - a new specialisation of "Carat". The JSC plans to organise workshops for packaging production at its offices in Moscow and St Petersburg.

"Carat" has however two problems with their equipment:
- Not possibilities for coloured printing
- Its productivity is relatively low (the unit was developed for small business).

Therefore "Carat" wants to buy a production line from French firm "Martin" for large-scale packaging production (75 million packagings per year). The estimated cost of this main investment project is 1.0 MUSD in hard currency and 0.5 MUSD in Rbl equivalent. 61.5 million packagings are planned to be exported to Poland, Lithuania, Latvia, Germany, Holland, Denmark, Sweden, Norway. The general director plans to increase the share of packaging in total company turnover to 20-25% (today 5.5%).

5. Consultants' impressions and proposed strategies

"Carat" was probably the first company in the Kaliningrad region to start to transform into a holding-type structure. This process coincided with serious changes in the company's specialization. It is actively looking for new market niches outside of the machine-building industry - most important is the market for packaging from corrugated cardboard.

Such a strategy of diversification seems relatively risky but it may have a success because "Carat" has experience of packaging equipment and the production of packaging.

We would propose a strategic alliance with a Western institute for packaging technology and some consultancy assistance regarding market investigations and help in creation of the sales network outside of the Kaliningrad region (the company needs direct channels to consumers of packaging in the West and Central European countries).

IV RETRAINING OF MILITARY OFFICERS FOR CIVIL OCCUPATIONS

1. Current status

About 4,000 officers and warrant officers have been early retired from the Baltic Fleet since 1991. Many of them have stayed in the Kaliningrad region. About 1,000 servicemen were retired from 11th Guard Army (including over 300 with right to pension) and small amount from border troops and units that are subordinated directly to Moscow.

No. who have found civil jobs themselves	ca 1,200
No. who are not seeking civil jobs (> 50 years age)	ca 400
No. who need civil jobs and retraining	700 - 800

Of the first group 60-65 % work in management and 20 % in business.

Most of the third group are 30-45 years old and have too small term of service (less than 20 years) to receive military pension.

The Baltic Fleet plans to retire in the next future about 450 persons per year - about half of them will be in need of retraining.

About 90 % of the retired servicemen belong to the engineering staff. These have the following military specialities (table below):

Specialities of retired and planned for retire servicemen from engineering staff

Specialities of retired servicemen	% of total number of retired servicemen
Radiotechnical engineers	20
Radioelectronic engineers	15
Weapon system engineers	10
Electromechanical engineers	15
Aviation engineers and technicians	5
Navigators	7
Building engineers	5
Other specialities (pilots, chemists, land-surveyors, topographers, computer engineers, psychologists, financiers, lawyers, etc.)	23

Most of retired officers have some experience in management and work with personnel. According to a survey 50 % would like to work as managers in state and private enterprises. Only 5-6 % want to start their own business.

There is no centrally organised system nor any common concept for educational programsfor civil retraining of retired servicemen in Kaliningrad.

Arrangements for retraining of retired servicemen:

There are and have been a number of programs aimed at this need.

a) Retraining outside of the Kaliningrad region:

In 1992 about 20 fleet officers were retrained before their retirement in Kronschtadt (St.Petersburg) through the regional branch of Central Institute of the Conversion of Military Men.
Another 15-20 retired officers have graduated from Plekhanov institute of national economy (Moscow) and received diplomas about the second high-education (MBA) since 1993. A third group is ongoing now. Each group has at average 17-20 people (including about 40% military men). Term of education is 9 month. This program is financed by the Kaliningrad office of Federal employment service.

b) Programs in the Kaliningrad region without foreign involvement:

About 80 retired servicemen have been retrained since 1992 in a program by Kaliningrad Technical University, Kaliningrad International Business School (KIBS) and the public organisation "Knowledge". This program is financed by the Kaliningrad regional office of the "Guarantee" fund. The program is called "Basics of market economy", has a duration of 2.5 month and takes up to 20 participants in each round of the program.

There is the public training institution "VEMAS", based in the Kaliningrad Naval School. About 60 servicemen were retrained in this institution in last two years. Some of them were retrained before their retirement. Duration of courses is 2-3 months. Programs of education are often changed in accordance with market demand (from "Basics of management" to "Guarding activity"). Retraining is as a rule financed by retired servicemen themselves but some programs were financed by "Guarantee" fund.

The Kaliningrad office of Federal Employment Service (Employment Center) has financed retraining of retired military men who were registered as unemployed. In the first half of 1995 the Employment Centre sent to professional retraining 45 retired servicemen. (38 of them fulfilled the programs). The retraining programs are carried out in different state and private educational institutions of the Kaliningrad region.

The Baltic Fleet plans to organise a retraining of servicemen, who have served in the Military Force not more 15 years, through the Kaliningrad High School of Management. The program will probably be financed by Employment centre. Each group of about 20 military men will study for 4 months with "Strategy of management". Start of this program is planned from 1 September 1995.

c) Programs in the Kaliningrad region with foreign involvement:

A special program in bank management was held during Sep 94 - March 95 by KIBS in cooperation with IDF (Inst. of computer aided management, Stockholm university). It was financed by Baltica Bank and the Swedish Board for Investment and Technical Support (BITS). 15 carefully selected retired officers and 10 bank employees participated and worked in small teams and a part of the program was held in Sweden. The experience is very good (13 of the 15 got good jobs mostly in banks). A second program will start in September 95 with addition of "Energotransbank" and "Baltvneshtorgbank" as sponsors.

KIBS also plans to start a training program for teachers and retired military officers in co-operation with Danish Management Centre (Copenhagen)

"From officers to managers": Kaliningrad High School of Management in cooperation with Danish Business College of Aabenraa will start a practically oriented management, marketing and finance program to train a first group of 20 retired officers to become teachers in subsequent programs. In the first group the participants will have practice in Denmark as part of the program. The Danish college will then start 20 "real" firms in Kaliningrad simulating real business activities. These firms will be headed by the retrained officers and will employ, for practical training, unemployed people through the regional Employment Centre as well as persons from commercial firms.

2. Opportunities and prospects

From the analysis above it is estimated that the number of officers that need civilian retraining will be around 400 per year 1996 - 98 and 200 per year after that in the Kaliningrad region. Finding a civil job is not so difficult for technical specialists but can be a problem for those with general military or political training.

The institutes in the region have a total capacity that should be sufficient in the long run (ref. A Barinov, KIBS). The problem is financing of the programs and the housing and living costs for the participants. There is a resolution from the Russian government (N 1300 of 25 November 1994), according to which the retraining of retired servicemen, who have not right to pension, will be carried out at the expense of the State Employment Fund (Employment Centre).

Retraining programs should be relatively short, not more than 4-5 months. Interviews with retired servicemen indicate that they are interested in studying management, small business organisation, basic economics, computers and law.

There is a wish from the Navy staff and some educational institutions to create a common "coordination center" to coordinate and unite the efforts of institutions working with retraining and social adaptation for the retired servicemen. Involved would be Kaliningrad State University (Centre of additional education), Kaliningrad Technical University, KIBS, Kaliningrad High School of Management, the Employment Centre, the regional administration and the Navy staff.

An important question is the connection between existing competence profile of retired officers and the factual demand in the Kaliningrad regional labour market. This would be a matter for the common coordination center. If possible the retraining of a person should be in direct agreement with his future employer.

New workplaces would probably be created mainly in the field of small and mediumsized business. Retrained officers could be potential entrepreneurs and promote innovation, technology based businesses and service businesses of various kinds. It is vital for the regional authorities to create a good business climate for SME's.

The experience of cooperation between Kaliningrad institutes and foreign institutes are very good and should be further promoted. The officers in retirement are in a break in their life between one career and the next. This is an opportunity that can be used for international practise and the encounter with teachers and businessmen from abroad. This could have a good influence on the development of the Kaliningrad region.

In this report we propose a "Small business and management training program" which would involve SME managers as well as military officers in active ages.

V CIVILIAN USE OF MILITARY INFRASTRUCTURE

The military infrastructure forms an important part of the overall infrastructure in the Kaliningrad region. There is a little open information about this infrastructure as it is largely a state secret. This also concerns information about military installations that were abandoned by troops but formally are not transferred to civil authorities. The conversion process in the region would involve the land, buildings and fixed installations on these sites. Given the diversity and large numbers of these types of military sites, it is obvious that no generally accepted criteria exist for determining the alternative uses to which these bases could be put.

Key question is that military infrastructure does not belonge to any regional organisation. It is federal property and all decisions about its possible civil use will be adopted in Moscow. Local military command has no definite say. Therefore there are no regional conversion programs in this field.

It would be necessary for civil authorities to show the military command (local and central) possible direct advantages from civil use of military property (social values, economic values, etc.)

Here are some current projects and thoughts that can be of interest:

1. Possible civilian use of the Baltiytsk naval base.

In 1992 the Council (municipality) of Baltiysk city proposed to JSC "Sea port" and to transfer to this JSC the federal property (some pierces of the Baltiysk naval base and Vostochniy point near Baltiysk) for creation of a new civil port. However command of the Baltic Fleet and command of the Russian Fleet rejected the idea. Main reason for this was overloading of the Baltiysk naval base after withdraval of the fleet from the Baltic States. The Baltic Fleet in these countries abandoned four big naval bases and tvelwe naval stations. Up to 50% of surface ships and all submarines of the Baltic Fleet had been based there. Head of the Kaliningrad regional administration agreed with opinion of the military.

Nevertheless the command of the Russian Fleet expressed readiness to transfer land area in Vostochniy point for construction of a new deep-water port. In 1993 JSC "Rosbaltport" was created for organisation of this construction. Its founders are Russian-German construction J-V "Rossbahn", JSC "Cargotrans" from St. Petersburg and the large Russian company "Gasprom". JSC "Rosbaltport" received 50 ha of land on Vostochniy peninsula. The construction is planned to start 1996 and be finished within seven years.

Another project for use of Baltiytsk naval base is the possible creation of ferry lines to some Western countries (Germany, Sweden, Denmark).

2. Possible organisation of civil air cargo terminal on one of the military airfields.

In 1992, during preparation of "Main directions of development of FEZ "Yantar" till 2000", there came up the idea to use one of the military airfields (without mention of its name) for civil air cargo operations. It was not realised then.

3. Use of military plants for repair of civil equipment (ships, aircraft and helicopters, radio equipment)

There have been some newspaper articles on this.

4. Use of ex-military camps for social needs (educational, recreational, etc.) of the region and for needs of SME business (manufacturing, trade, storage).

There are 17 ex-military camps in the Kaliningrad region that were abandoned by the middle of 1995 but not formally transferred to the local civil authorities. Army and Navy can not transfer them for civil needs without permission from Ministry of Defense in Moscow. However "Moscow" does not allocate funds for their maintenance. As a result the unused and often not guarded buildings and equipment on these camps were stolen by local people (about 50% had disappeared by April 95).

In April 1995 the Kaliningrad regional Duma discussed the situation of ex-military camps. Deputies proposed that these camps should be transferred gratis to local authorities for localisation of schools, summer rest camps, educational institutions for young lawbreakers, etc. The military also were positive to transfer camps for civil use but against compensation in form of housing or funds for construction of housing for officers. By November 1994 about 6,500 military men of the Baltic Fleet had no flats. This idea was unrealistic as local and regional authorities had no money and free housing for this. As a result the regional Duma appealed to the Minister of Defense with request to transfer empty military camps for social needs of the Kaliningrad region. This resolution was however not adopted.

But in the end of August 1995 the "Specialized state self-financing enterprise of Ministry of Defense" announced an auction for sale of ex-military camps, to take place on September 20, 1995 (table below).

Ex-military camps announced for sale on competition of September 20, 1995

Number and location of military post	No. of buildings	Land area, ha	Start price, MRbl
#16 Neman (center of city)	33	11.2	2,337.0
# 1 Khrabrovo, Zelenogradskiy district	1	1.2	81.5
# 14 Sovjetsk	9	5.0	777.7
# 41 Sovjetsk	12	1.46	1,340.2
# 31 Neman (2 km off city limits)	14	19.2	986.4
# 52 Slavsk (with n city limit)	7	13.9	579.5
# 1b Gastellovo, Sovjetskiy district	87	155.0	6,985.5
# 1v Gastellovo, Sovjetskiy district	82	178.6	8,701.3
# 9 Borskoye, Gvardeyskiy district	8	6.7	586.5
# 1,2 Khrabrovo, Zelenogradskiy district	10	39.2	481.1
# 8 Beregovoye, Zelenogradskiy district	8	21.0	554.9
# 17 Chernyakhovsk (outskirts of city)	5	8.2	2,513.9
# 45 Chernyakhovsk (center of city)	2	1.0	8.21
# 1 Rakitino, Sovjetskiy district	11	24.0	780.0
# 1 Ozersk (Ushakovo settlement)	12	42.25	1,077.6
# 12 Kaliningrad	4	part of camp	968.9
# 16 Primorje, Zelenogradskiy district	2	1.6	28.4

It is necessary to remember that military installations often require intensive and costly cleanup operations. Contamination of the soil and water as well as dumped munitions are the most common environmental hazards. Complicated technical decontamination processes are often required and heavy investments must be undertaken before the land can be used for other purposes.

The question of civil or dual use of the military infrastructure has to be discussed on top level before any projects can be proposed.

VI PROJECT CONCEPT

Our project concept is based on the need to keep and develop the industry base of Kaliningrad region.

The concept is first of all oriented towards consultancy assistance to the Kaliningrad conversion enterprises where we believe a lot of results could come out of rather low cost.

There are also some investment projects in the enterprises that should be taken into consideration - implying that the scope of next phase could include search for commercial or other financing.

The total shortterm financial problem of the conversion enterprises is of the order of 10 - 20 MUSD. As the enterprise structure is old, just putting in this amount of cash would not necessarily solve the longterm problem. First the enterprises should be restructured and effective ownership established. (A good demonstration of this is "Kaliningradbummash".)

Our concept can have shortterm effects if we assist the restructuring of large companies and help to establish good conditions for SME's and new-business start-ups.

If we assist in market position build-up, market channel development, management skills improvement and similar, it can give turn-around effects within 2 - 3 years - this is from our experience the minimum time.

If we can assist with commercial financing of proposed investments the time perspective for substantial results will be of the order 3 - 4 years (the companies calculate with payoff times around 2 - 4 years).

1. *High-tech:*
   The high-tech companies should be assisted in their marketing efforts, domestic and internationally. This means helping to establish international contacs, market channels and commercial financing for "Fakel's" plasma-surgical products and "Kvartz'" vacuum-coating equipment.

2. *Marketing consultancy:*
   Market research and analysis as well as competitive analysis is vital for all conversion companies as they face a quite different situation now - instead of the single-customer task-oriented life, they have to manage open marketing, local and international competition, uncertain economic and buying-power conditions, and so on.

3. *Production development:*
   There is a big potential for improvements in the production area - this will require consultancy as well as investments and rationalisation. Compared to Western companies (competitors!) the production sites should be improved in organisation, process orientation, internal transports and logistics, quality and maintenance. Otherwise they cannot be sure even to have a local cost advantage, considering the high degree of automation in Western white-goods production for example.

4. *Management training:*
   There are several Kaliningrad institutions giving high-level management training (KGTU, KSU, KIBS, High-School of Management) and they have good relations and in some cases practical cooperation with international institutes.
   We could inspire *consultants* in Kaliningrad to be involved in "down-to-earth"

management programs for SME managers and entrepreneurs and in civilian retraining programs for retired military officers. This would be good for the self-esteem and "initiativity" of the Kaliningrad consultants and would ascertain that the process continues after the international consultants have left.

A real market orientation is different from the present management training - it would show up in business plans being real market based action plans and not the product/production proposals that are normal standard in the conversion enterprises. We could assist in this kind of management training.

A general remark is that managers in Kaliningrad enterprises should travel around in the international markets to get firsthand impressions and experiences. This would pay off in efficiency, competitiveness, adaption to international markets, etc.

5. *Infrastructure and services for SME's:*
   Along with the conversion there should be a business climate that is stimulating for start-ups of new business and creation of flexible modern structures out of the old large enterprises. The formation of services and financing (conditional-loan funds for example) for this should be assisted.

6. *Investment projects:*
   The enterprises have proposals that have to do with restructuring, modernisation and new markets. In some cases these should be assisted through deeper evaluation, market feasibility studies and help with commercial contacts.

VII CONCRETE PROJECT PROPOSALS

Follwing are a number of projects that in our opinion would be of value for the preservation and development of the industrial base of Kaliningrad. Annex 4 elaborates them in more detail.

The proposals are based on our subteam's conclusions and should be coordinated with those of the three subteams for engineering industry, light industry and shipbuilding industry.

1. Russian domestic market - a broad survey and creation of market communication and distribution channels for some of the enterprises -"Kvartz", "Gusev Lights", "Fakel", "Carat"

2. Assisting the local consultants' network (Club) and creating a small business and management training program (including an opportunity for retraining of military officers)

3. Consultant assistance to get financing (through J-V partners, co-ownership, EBRD, others) for some enterprise investment proposals at "Fakel", "Kvartz", "Stroydormash", "Carat".

4. Consultancy project:

"Yantar":	International market and competition feasibility study as a basis for deciding suitable investment program. Assistance in finding financial sources.
"Fakel":	Assistance in creation of international market channels for the plasma surgical system. Assistance in creation of a new enterprise structure
"Kvartz":	Assistance in restructuring, TQM program, market development for the vacuum coating technology
"Stroydormash":	Assistance in downsizing, TQM program, international marketing
"Gusev Lights":	Assistance in TQM program, design for international standards, marketing
"Carat":	Assistance in creation of technological cooperation for packaging design and production. Creation of market channels, Russian and international.

5. Retraining of retired military officers for civil occupations.

ANNEXES

Annex 1 List of people met and interviewed

Enterprises:

JSC "The Baltic Shipbuilding Plant "Yantar"
Leonid Zmachinskiy, general director before mid-August 1995
Valeriy Cyplukhin, then head of marketing dep, now general director
Boris Krut, chief engineer
Alexander Jyrenko, deputy of general director on economy
Victor Datckiy, deputy director, chief of "RIK-Container" project
Boris Batalin, deputy chief of "RIK-Container" project

EDB "Fakel"
Alexander Bober, general director and chief designer
Evgeniy Kozlov, deputy director economy and finance
Vyacheslav Murashko, chief designer
Krasnoslav Petrov, chief foreign economic relations dep
Vladimir Goncharenko, chief consumer goods and medical equipment dep
Petr Solodovnikov, leading designer for medical equipment

JSC "Kvartz"
Vadim Schepkin, general director
Alexander Kollerov, marketing and commerce director
Vladimir Vorobyev, chief engineer
Alexander Podoryaschiy, head of the marketing dep
Wladimir Korsch, marketing manager

JSC "Stroydormash"
Anatoliy Yasinskiy, general director and chairmain of the board
Igor Lazunov, chief engineer
Isaak Levitan, chief economist

JSC "Kaliningradbummash"
Alexander Alexeev, director of "Autotor" company(owners of JSC)

JSC "Gusev Lights Engineering Plants"
Alexander Rakviashvili, general director
Ivan Semyonov, chief engineer

JSC "Carat"
Vladimir Polyakov, general director

JSC "Baltkran"
Oleg Ermolaev, general director and chairmain of the board
Nikolay Kharin, deputy director on economy

Educational institutions:

Kaliningrad State University
Prof. Vladislav Ivchenko, vice-rector on research work
Prof. Vera Zabotkina, vice-rector on international relations
Prof. Vladimir Bryushinkin, director of The Baltic Center for educational and research programs

Kaliningrad Technical University
Prof Victor Ivanov, rector

Kaliningrad International Business School (KIBS)
Dr. Alexander Barinov, general director
Dr. Nadiezha Klementsova, deputy general director / external relations
Kaliningrad High School of Management
Anatoliy Sharkov, head of the educational department
Igor Trigub, teacher

Military:

Captain Vasiliy Zjubanov, staff of the Baltic Fleet

Federal and Regional Agencies:

Valeriy Filatov, Head of Kal. branch of Russian Anty-Monopoly Committee and of the Kal. Business Development and Support Center
Anatoliy Volik, man. director of the Kaliningrad Regional Employment Center

Consultants:

The Kaliningrad Management Consultants' Club (14 members)
Angelina Dolgaya, president of Consulting Bureau "ComCon and Partners"

Annex 2 Bibliography

1. Bonn International Center for Conversion: "brief 1 - Conversion of the Post-Soviet Defense Industry: Implications for Russian Economic Development" by K Gonchar, Y Kuznetsov, A Ozhegov, February 95
2. Technical University of Denmark, Technology Assessment Unit: "The price of peace - Military Conversion on the Enterprise Level in Russia" by Tarja Cronberg, Nov 92
3. Journal of Peace Research, vol 31, no.2, 1994: "Civil Reconstructions of Military Technology: The United States and Russia" by Tarja Cronberg
4. RFE/RL Research Report vol 1, No 33, 1992: "How many people worked in the Soviet defense industry?" by Brenda Horrigan
5. Regional program "Conversion" (1992 - 1995), Kaliningrad Regional Administration 23 December 1992

Annex 3 Survey of technology base in Kaliningrad

This survey is a conceptual basis for elaboration of "technology based business development", with possible future contributors.

The idea is that a technology can become the common factor in local industrial development, where companies can work with a growing bouquet of applications, entrepreneurs can start up small enterprises, etc.

It does not have to be a very advanced technology to generate this kind of business development - spin-offs, start-ups. One famous Swedish example is the region in Småland where the technology of iron thread manufacturing led to a very broad and stable SME industrialisation with nails, springs, carts, anything that can be produced from iron filaments.

In our mind there are five components related to the concept of technology based business development:

1. **Existing technologies in the region**
2. **Possibility to organise "Technopark" conditions for entrepreneurs.**
3. **Regional development funds and services** (similar function as Nutek).
4. **SME consultants and management training programs.**
5. **Possible use of existing military infrastructure and skills in military personnel**

1. Existing technologies in the region

Contributor	Technology	Competitive strength International/Russian
"Kvarz"	Vacuum deposition technology PCB production Electronic assembly	International Russian Russian
"Fakel"	Ion plasma technology Material treatment, hard alloys, titanium, etc. Vacuum chambers for testing of engines	Top international International
"Stroydormash"	Hydraulics	Russian
VNII "Elektrotransport"	Electrical cart technology - main and single development institute in Russia Wagonostroitel produced the carts.	Russian
"Gusev Plant of Lights Engineering Equipment"	Energy saving halogen and luminescence lamp technology	Russian
Lev Gick, KGTU	Rotating tool technology for lathing and milling	International

2. Possibility to organise "Technopark" conditions for entrepreneurs.

This idea has been mentioned by several persons:
- "Kvartz'" general director V Schepkin proposed this for their unused "Shop # 44".

- Professor V Ivchenko at Kal. State University, vice rector, dep. of economics and management. He is also member of the Russian academy of transport and would like to organise it on the base of research and education institutes.
- Professor V. Ivanov, rector of Kal. Technical University, who wants to try to organise it perhaps together with "Kvartz".

A Technopark in the Kaliningrad region would be based on cooperation between education, scientific and research institutions (university, technical university, research centres of fishing industry, etc.) and some industrial enterprises. Universities, municipalities and local trade chambers play main role in organisation such parks according to international experience

3. Regional development funds and services.

- Alexey Ignatiev is head of the recently started Regional Development Fund with the objective to arrange evaluation and reasonable funding of entrepreneurial business proposals.
- V. Filatov, who is head of the local branch of "Russian State Committee of Antimonopoly Policy and New Economic Structures Support", created the Kal. Business Development and Support Centre especially aimed at small business. It is backed by the administration.

A very important thing for technology based business in the Kaliningrad region is the creation of venture funds for support of small innovation businesses. This system would include for example fund of venture capital supported by the regional administration (Ignatiev 's fund is good base) and several private venture (investment) companies. Pension and insurance funds, commercial banks, possibly some enterprises are potential source of venture capital.

4. SME consultants and management training programs.

The "consultants' club", whose formation in June was triggered by the UNIDO project, is a good potential resource. Angelina Dolgaya is chairman and involved in the discussion. We should discuss a policy and preparation of consultants for the task.

Angelina Dolgaya and Christer Ekman have started to outline a management training program specifically aimed at small business. First the program layout and contents, then the questions of organisation and funding will be treated.

5. Possible use of existing military infrastructure and skills in military personnel.

This requires high-level contact with the military. The commander of the Baltic Fleet, Admiral Egorov is the person who has sufficient authority. The military resources are federal and we do not know if anyone is interested in their conversion to civilian purposes. However there is an information that in Spring 1995 militaries proposed to regional Duma to exchange some military camps into housing or funds for house building (housing is very sore subject for army and navy). A specialised "State Self-investment Enterprise of Ministry of Defence" will hold an official auction Sept. 20 of 17 military camps in Kaliningrad region.

Engineering skills: Up to 90% of retired officers in the Kaliningrad region have engineering education. However some retraining to civil life is necessary for the use of their skills to create new businesses. Key point is forming support network for SME business in the Kaliningrad region.

Annex 4
UNIDO - KALININGRAD - REGIONAL ECONOMIC DEVELOPMENT

Sector - Conversion of military industries

Project proposal - ***1***

Russian domestic market - a broad survey and creation of market communication and distribution channels for some of the enterprises -"Kvartz", "Gusev Lights", "Fakel", "Carat" (from the military conversion sector)

1. BACKGROUND (based on sector research)

The conversion companies have no tradition in open competitive marketing. Their future is depending on the *Russian domestic market and neighbour countries*. They have to develop market knowledge, market communication, market channels and service networks. The companies we have in mind are not competing with one another in the markets, so we can propose a common market research and development project for them.

2. PROBLEM OR OPPORTUNITY DEFININTION (based on SWOT analysis)

The Russian market should be investigated for structure, needs, demand, buying behaviour, distribution possibilities, medium-term trends and existing and possible channels for communication and distribution. Simultaneously channels can be created. This would have positive results for the companies in relatively short time.

3. OBJECTIVE (of development project proposed)

To create a real basis for market strategy, action plans, distribution organisation, etc. for each company individually through a common consultancy approach.
Simultaneously develop market channels for the companies and get sales up over a broader market area.

4. PROJECT APPROACH, METHOD (how to achieve objective)

A small consultant team (2 -3 persons) is assigned to make a three month field study including research as well as development of communication and distribution channels. This is done together with marketing managers in the respective companies. The consultant team will travel around important regions and places. Marketing managers would be asked to join at times and in places where channels are to be created and negotiated. The consultants thus would create the information bases and the impulse for actions. The managers would take responsibility for negotiations and their companies' consequential actions.

5. PROJECT PROCESS AND MAJOR ACTIVITIES

1. A consultant team is assigned. A common project contract is made with the relevant enterprises.
2. The consultant team together with marketing managers work out product/market directions and targets. Then the team makes a short desktop survey of market information.
3. A time/travel/activity plan is worked out and agreed upon with the marketing managers.
4. The team goes to the first place (probably Moscow as it is the main information center) and starts to work. There they gather market and competition facts, search for possible distributors, together with marketing managers negotiate cooperative agreements, etc. The work is finished when every participating company has either created (or at least initiated) a market presence or decided some other action (not to be present, revise product line, revise

market targets, etc.) for this place.
5. The work is repeated in several places.
6. The consultant team in the end assists the marketing managers in creating a market strategy and action plan for the future.

6. PROJECT PARTICIPANTS AND RESPONSIBILITIES
(people, organisations, companies involved)

Two or three consultants, one or two Russian (Kaliningrad) and one international with solid marketing experience.
Marketing managers from the selected companies.

7. FUNDING (potential, contacted or already committed contributors to the funding of the suggested project)

Soft loans from the West for the expenses for the consultant team. Possible participation of Kaliningrad banks. Payed back by participating enterprises based on sales results.

8. RESOURCES, COSTS and INVESTMENT BUDGETS
(estimated input necessary in terms of time, costs and possible investment to implement and realize the suggested project, preferable separate phases)

Three months of working time for two - three consultants.

Travel budget 5,000 USD for each	10,000 - 15,000 USD
Lodging budget 5,000 USD for each	10,000 - 15,000 USD
Consultants' fees	45,000 - 63,000 USD
Statistical and other data purchased	5,000 USD
Total project cost	**70,000 - 98,000 USD**

9. TIME AND ACTIVITY PLAN

The project should be carried through during spring of 1996.
Negotiations with participating enterprises, recruitment of consultants team and creation of financing Nov 1995 - Feb 1996.
Starting time of active work should be 1 March and end of active work 31 May.
Activities according to item 5 above.

UNIDO - KALININGRAD - REGIONAL ECONOMIC DEVELOPMENT

Sector - Conversion of military industries

Project proposal - ***2***

Assisting the local consultants' network (Club) and creating a "small business and management training program" (including an opportunity for retraining of retired military officers)

1. BACKGROUND (based on sector research) Triggered by the UNIDO project, a Management Consultants' Association ("Club")was formed in Kaliningrad in June 1995 - the first of its kind. Management consultancy will have a great role in the transformation into market economy for many of the enterprises in the region and the Club could be a tool for "down-to-earth" SME development. It is vital that this association grows in strength so that it can establish consultancy standards and a positive attitude from managers' side.
2. PROBLEM OR OPPORTUNITY DEFININTION (based on SWOT analysis/conclusions) Problem: "Managers in Russian enterprises seem to believe they should do everything themselves and outsiders should hand over the money and contracts". A change in attitudes is necessary. Opportunity: We can support the local consultants with international contacts and exchange partners. We can also help to develop consultants' professional standards and skills. We can establish a new small business and management training program, where the local consultants would have a "front seat" role. This would strengthen the role of Kaliningrad consultants in the progress of the region.
3. OBJECTIVE (of development project proposed) Development of a new"business development and management training program" for SME's in the Kaliningrad region in cooperation with the Consultants' Club. Assisting the Club with development of consultants' professional skills and standards. Creation of international relations for the Club.
4. PROJECT APPROACH, METHOD (how to achieve objective) 1. Angelina Dolgaya and Christer Ekman have started to outline a "SME business development and management training program" which basically is a 5 x 4 day formal program with two month intervals where participants carry through a development process for their own enterprises with the help of tools and knowledge from the formal program and coaching by members of the Club. The total length of the program thus is nine months, some practical results will be achieved during the program and in the final there will be a progress evalution of the participants' work. 2. One or two international consultants should be associated members of the Club and regularly participate in activities and meetings with the Club. They would act as catalysers in the development of the Club's international standard and relations.
5. PROJECT PROCESS AND MAJOR ACTIVITIES 1. Development of the new "small business and management training program" in cooperation between international consultants, the Club, Kaliningrad management training institutes and business associations.

2. Appointing, in consensus with the Club, of associated international members.
6. PROJECT PARTICIPANTS AND RESPONSIBILITIES (people, organisations, companies involved) The Kaliningrad Consultants' Club (represented by chairman Angelina Dolgaya and Alexander Barinov). Kaliningrad International Business School (A Barinov) Representatives of State University and Technical University as suitable. Representatives of Kaliningrad business associations as suitable. International partner or partners as suitable.
7. FUNDING (potential, contacted or already committed contributors to the funding of the suggested project) Under evaluation. Partly by international partners.
8. RESOURCES, COSTS and INVESTMENT BUDGETS (estimated input necessary in terms of time, costs and possible investment to implement and realize the suggested project, preferable separate phases) Under evaluation. It will depend on the volume and contents of the new "small business development and management training program".
9. TIME AND ACTIVITY PLAN The elaboration of "SME business development and management training program" should be started at the end of 1995 and the first training program should be started in the first half of 1996.

UNIDO - KALININGRAD - REGIONAL ECONOMIC DEVELOPMENT

Sector - Conversion of military industries

Project proposal - 3

Consultant assistance to get financing (through J-V partners, co-ownership, EBRD, others) for some enterprise investment proposals at "Fakel", "Kvartz", "Stroydormash", "Carat".

1. BACKGROUND (based on sector research)

Each enterprise has investment project proposals for which we suggest evaluation;

1. "Fakel": Plasma surgical system - finalizing product development and clinical testing, creation of international market channels
2. "Kvartz": Production investments for new commercial vacuum coating equipment system, creation of international market channels.
3. "Stroydormash": Necessary investment in production (new painting shop, quality improvement)
4. "Carat": Production line for large volume production of packaging based on corrugated cardboard. Markets will be Kaliningrad and neighbour countries.

2. PROBLEM OR OPPORTUNITY DEFININTION
(based on SWOT analysis/conclusions)

The investments would have positive results within rather short time for the companies and would have payoff times of 2 -3 years according to the companies' calculations. Thus they could be financed on a commercial basis if credits to international interest rates are available.

3. OBJECTIVE (of development project proposed)

Create turnaround effects and positive business development for each company, thus improving the stability of enterprises and economy of the region.

4. PROJECT APPROACH, METHOD (how to achieve objective)

A team of Russian and some international consultants assigned to develop a good and open cooperation with managers of the companies, review plans and initiate activities.

5. PROJECT PROCESS AND MAJOR ACTIVITIES

1. Evaluate the organisational, management and ownership structure and development of the enterprises.
2. Evaluate and improve the business plans and investment calculations.
3. Assist in creation of financing and market relations.
4. Follow realisation of the individual projects.

6. PROJECT PARTICIPANTS AND RESPONSIBILITIES
(people, organisations, companies involved)

A small team of Russian and international consultants.

7. FUNDING (potential, contacted or already committed contributors to the funding of the suggested project)

Partly international commercial partners

Credit possibilibilites at reasonable terms must be developed in the region.

8. RESOURCES, COSTS and INVESTMENT BUDGETS

(estimated input necessary in terms of time, costs and possible investment to implement and realize the suggested project, preferable separate phases)

Investment budgets as proposed by the companies in rough figures:

"Fakel": Plasma surgial system:	330 TUSD
"Kvartz": New commercial vacuum coating eq:	2,300 TUSD
"Stroydormash": Production improvement	300 TUSD
"Carat": Production line	1,500 TUSD

To this would be added costs for consultants. A further evaluation is necessary.

9. TIME AND ACTIVITY PLAN

The project should be started in the spring of 1996.
Negotiations with participating enterprises, recruitment of consultants team and creation of financing of the consultants work Dec 1995 - March 1996.
Starting time of active work would be 1 April 1996.
Activities according to item 5 above.

UNIDO - KALININGRAD - REGIONAL ECONOMIC DEVELOPMENT

Sector - Conversion of military industries

Project proposal - ***4***

Consultancy project:

"Yantar":	International market and competition feasibility study as a basis for deciding suitable investment program. Assistance in finding financial sources.
"Fakel":	Assistance in creation of international market channels for the plasma surgical system. Assistance in creation of a new enterprise structure
"Kvartz":	Assistance in restructuring, TQM program, market development for the vacuum coating technology
"Stroydormash":	Assistance in downsizing, TQM program, international marketing
"Gusev Lights":	Assistance in TQM program, design for international standards, marketing
"Carat":	Assistance in creation of technological cooperation for packaging design and production. Creation of market channels, Russian and international.

1. BACKGROUND (based on sector research)

The situation of the enterprises can be improved in several ways as the analysis in the report shows:

a) Structure of enterprises organisation, management and ownership. (Efficient private ownership is probably one of the keys to restructuring and modernisation of the enterprises. The attitude and competence of director and managers is a second key.)

b) Marketing and commercial cooperation

c) Production organisation, productivity and quality.

2. PROBLEM OR OPPORTUNITY DEFININTION (based on SWOT analysis)

According to project proposal above.

3. OBJECTIVE (of development project proposed)

Stabilising and improving the industrial base of the region through support of the large industrial enterprises. It is a much faster way of re-industrialisation than to start all over with small enterprises. From the macroscopic viewpoint of regional economic growth, the already existing large companies are important assets.

4. PROJECT APPROACH, METHOD (how to achieve objective)

Assigning of a consultants' team with appropriate experts, Russian and international, and work in close cooperation with the companies.

Main internal improvement areas:

1. Restructuring the whole company. To split up the old enterprise into a holding company with a number of daughter companies, very similar to strategic business units in the product portfolio structure, is a viable model for Kaliningrad.
2. Marketing and selling. Market and competition research and analysis, business planning, field sales force, development of external market organisation and distribution channels. (Compare with project prososal 1 above)
3. Production. Total quality development. Organisation and layouts, internal transport means,

flow-of-material organisation, process rationalisation, slimming the organisation.
5. PROJECT PROCESS AND MAJOR ACTIVITIES Assign a small consultant team of: 1. A few specialists on modern production who can reengineer the plants and organisations and install customer oriented practices. 2. A few persons with experience of restructuring and organising industries.
6. PROJECT PARTICIPANTS AND RESPONSIBILITIES (people, organisations, companies involved) Managers in companies named, consultants' team.
7. FUNDING (potential contributors to the funding of the suggested project) Soft loans through the administration of the region, through EBRD or similar
8. RESOURCES, COSTS and INVESTMENT BUDGETS (estimated input necessary in terms of time, costs and possible investment to implement and realize the suggested project, preferable separate phases) Depending on the number of participating enterprises and their plans for restructuring and modernisation.
9. TIME AND ACTIVITY PLAN The project should be started in the spring of 1996. Negotiations with participating enterprises, recruitment of consultants team and creation of financing Dec 1995 - March 1996. Starting of active work should be 1 April 1996. Activities according to item 5 above.

UNIDO - KALININGRAD - REGIONAL ECONOMIC DEVELOPMENT

Sector - Conversion of military industries

Project proposal - 5

Retraining of retired military officers for civil occupations

1. BACKGROUND (based on sector research)

About 4,000 officers and warrant officers have been early retired from the Baltic Fleet since 1991. Many of them have stayed in the Kaliningrad region. About 700-800 people presently need civil jobs and retraining. Most of them are 30-45 years old. About 90% of the retired servicemen belong to the engineering staff.

To this group will be added a few hundred new retired officers of active age each year, because of natural leave.

2. PROBLEM OR OPPORTUNITY DEFININTION
(based on SWOT analysis/conclusions)

The group of retired servicemen is a qualified human resource pool. With proper retraining they can add value to the region through civil occupations or creation of new businesses.

3. OBJECTIVE (of development project proposed)

Creation of a unified system for retraining of retired servicemen in the Kaliningrad region based on coordinated efforts of all relevant institutions.

4. PROJECT APPROACH, METHOD (how to achieve objective)

Creation of a permanent body that would be responsible for development of retraining programs and coordination of the retraining process in the Kaliningrad region.

Stimulation of interaction between all actors of the retraining process.

Main approach should be training through activity - people learn better if their role is not passive but active. And they learn faster if they are directly involved in solving real problems. Active problem solving gives the best effect in heterogeneous groups and in unknown situations. Therefore we would organise small groups consisting of retired officers, unemployed high-skilled people (possibly also from other countries) and SME managers. Such groups would be oriented not only towards retraining, but also to solving practical problems of the real SME's.

5. PROJECT PROCESS AND MAJOR ACTIVITIES

1. Organising a coordination meeting of all relevant actors to formulate a common approach to the problem.
2. Creation of a workgroup for elaboration of the retraining program.
3. Creation of a permanent Coordination Center for "social adaption and retraining of retired military officers". This could possibly be within the Regional Employment Center and the regional administration.
4. Start the retraining program in a few educational institutions, through small practically oriented groups under the supervision of the coordination center.

6. PROJECT PARTICIPANTS AND RESPONSIBILITIES

(people, organisations, companies involved)

Command of the Russian Baltic Fleet, Command of the Army, Regional administration, regional educational institutions, Regional Employment Center, Kaliningrad Consultants' Club and international partners (educational institutions, employment services).

7. FUNDING (potential, contacted or already committed contributors to the funding of the suggested project)

Kaliningrad regional and cities' administrations, the State Employment Fund (Employment Center), international participants (TACIS program and some foreign employment services, for example).

8. RESOURCES, COSTS and INVESTMENT BUDGETS
(estimated input necessary in terms of time, costs and possible investment to implement and realize the suggested project, preferable separate phases)

Necessary resources may be finally defined only after the coordination meeting. Some funds will be necessary in particular for:

1. Creation and maintenance of the coordination center (wages of employees, equipment, payment for public utilities, etc.)
2. Elaboration of the common retraining program (mainly some payments to members of the workgroup).
3. Retraining courses themselves (wages for teachers, equipment, textbooks, etc.)

9. TIME AND ACTIVITY PLAN

Work may start in the end of 1995 with the coordination meeting.

The Coordination Center would start its work in Jan 1996 (if necessary funds are found).

The retraining program would be worked out by April-May 1996 and the first retraining courses would start from September 1996.