

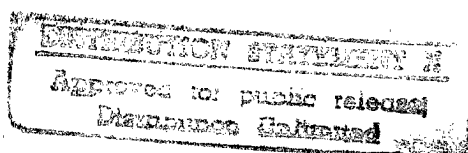
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22 February 1984

East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS



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22 February 1984

EAST EUROPE REPORT

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CZECHOSLOVAKIA

MINISTER STRESSES IMPORTANCE OF ROBOTIZATION

Prague SVET HOSPODARSTVI in Slovak 22 Nov 83 pp 1,2

[Article by Eng Pavol Bahyl, minister of general engineering of the CSSR:
"For Further Development of Robotization"]

[Text] The main directives for the economic and social development of the CSSR in the years 1981-1985, adopted by the 16th CPCZ Congress, outlined the directions for the development of automation and robotization of processes of production in our national economy. The Czechoslovak concept of the development of industrial robots and manipulators starts from the premise that the CSSR has an advanced engineering production, 70 percent of which involves piece or limited production whose automation practically depends on production and manipulation equipment that may be flexibly programmed and readily adapted.

[Text missing] controlled in agreement with the comprehensive program for the development of robotization.

The CEMA Concept

During the Seventh 5-Year Plan the approach of the [CEMA] member countries to the program of robotization is becoming unified and joint coordinated procedures are being introduced in the development, research, cooperation and specialization of their production.

In view of the preceding unsatisfactory situation in enforcing the trends of integration in the area of robotization, the CEMA Executive Committee adopted specific policies for the development of automated manipulators with programmable control designated for various national economic branches and for the organization of their specialized and cooperative production on the basis of standard modules and components.

Those policies were then included in the Joint Program for Cooperation which has become part of the General Agreement on Multilateral Cooperation in the

Development of Industrial Robots, drafted by the CEMA Committee for R&D Cooperation and signed at the level of premiers of the government at the 36th session of CEMA held in Budapest in June 1982.

The program of cooperation presupposed an extensive review of the demands of individual branches for the lines of industrial robots, their technical standards, and for orientation, numbers of units required up to 1985, 1990 and 1995. This work involves 11 permanent CEMA commissions and international economic organizations. The Council of Chief Designers for Industrial Robot Technology, organized by the CEMA Committee for R&D Cooperation in June 1982, was appointed to provide methodological leadership and to process the results of that program.

It is a fact that the robot nomenclature prepared by the Council of Chief Designers is still excessively broad and contains models that may well be economically substituted one for another.

The point of departure for the solution of this problem, as well as the problem of consistent unification and standardization, will be the implementation of the Unified Concept for the Technical Development of Robot Technology drafted upon the initiative of the USSR party by the Committee for R&D Cooperation. The unified concept proceeds from the principle of modular design of industrial robots and presupposes the inevitable unification and standardization of assembly units, modules and above all whole structural sections which will offer necessary variability in the structure of robots and their optimum adaptation to their technological functions.

Technical Standard

The standard of industrial robots and manipulators developed and manufactured in the CSSR is on the level of comparable foreign-made products. Czechoslovak industrial robots and manipulators are based almost exclusively on assembly units made in our country or in the CEMA states. To some extent this fact has been the reason why so far Czechoslovak industrial robots and manipulators have been less reliable and much heavier than their counterparts imported from the nonsocialist countries. The inferior technical standard of sub-assembly units now in use is also evident from lower operational dependability of their drives, horizontal measuring systems, control, etc.

Industrial robots and manipulators manufactured thus far may cover machining, die casting, surface profiling, welding technology and partly volume profiling, assembly and control. The principal branches using industrial robots and manipulators are the automobile and tractor industry, manufacture of construction and road-building machinery, and electrical engineering and consumer industries.

Industrial robots and manipulators will gradually pervade also the non-engineering branches where the standard concept of modular design with highly standardized construction of industrial robots and manipulators, specialization and cooperation in production, and deliveries of robotized complexes will be advantageous.

Main Goals of Robotization in the CSSR

- to introduce during the Seventh 5-Year Plan in the CSSR assembly line production of industrial robots and manipulators on the basis of Czechoslovak component systems, proceeding from the results of R&D of industrial robots and manipulators;
- to manufacture at least 3,500 units of industrial robots and manipulators in the Seventh 5-Year Plan;
- to introduce in the production sphere at least 3,000 units of industrial robots and manipulators during the Seventh 5-Year Plan and to organize during that period 1,500 automated technological workplaces equipped with industrial robots and manipulators;
- to save at least 3,500 workers in the production sphere by utilization of industrial robots and manipulators;
- to prepare the groundwork for an intensive development of robotization in the Eighth 5-Year Plan for the purpose of installing at least 13,000 to 15,000 units of industrial robots and manipulators prior to 1990.

In agreement with the trends in the world, the main directions of the technical development will be focused on:

- modernization of the already developed industrial robots and manipulators to upgrade their technical standard, reliability, quality, service and adaptability, particularly in accordance with the development of micro-electronics and the unit and modular base;
- the development of industrial robots and manipulators of unit construction based on model units and standardized modules in accordance with the concept for the development of robotization in the CEMA member countries;
- the development of sensor subsystems to upgrade artificial intelligence of industrial robots and flexible production formations;
- higher integration and correlation between the technological equipment and the robot;
- the development and control of robotized technological complexes with higher integration of the production equipment, manipulation, control and organization of operations;
- upgraded technical parameters and reliability of parts and modules for the construction of industrial robots and manipulators and other manipulating equipment.

Quantification and Fulfillment of the Program

The decision of the CSSR Government stipulated for the 1981-1985 period definitive quantification of the development of industrial robots and manipu-

ators in the CSSR during the Seventh 5-Year Plan. This decision demanded that the Ministry of General Engineering manufacture 1,560 units of industrial robots and manipulators at the price of Kcs 651 million, the Ministry of Metallurgy and Heavy Engineering 1,350 units in the value of Kcs 210 million, and the Ministry of Electrical Engineering 648 units for Kcs 306 million. The whole program envisions the production of 3,558 units of industrial robots and manipulators costing approximately Kcs 1.2 billion.

Systematic R&D of industrial robots and manipulators in the CSSR began in 1975 with the solution of the R&D state task "Adaptable Industrial Robots and Unified Manipulators." The principal institutions involved in the solution of state tasks are the Slovak Academy of Sciences, the Czechoslovak Academy of Sciences, the Engineering Technology and Economy Research Institute in Prague, the Welding Research Institute in Bratislava, the Mechanization and Automation Research Institute in Nove Mesto nad Vahom, several colleges and other research institutes.

At present 12 models of industrial robots and manipulators and other manual and special-purpose manipulators are included in or prepared for production on assembly line. Before the end of the Seventh 5-Year Plan the development of nine additional models of industrial robots and manipulators, among them three industrial robots with adjustable components, will be completed. The R&D base for basic and applied R&D of industrial robots and manipulators has already been established.

In addition to centralized R&D of industrial robots and manipulators in the last years of the Sixth 5-Year Plan, and especially during the current 5-year plan, special-purpose industrial manipulators have been developed in the framework of the R&D departmental tasks. This concerns above all the linkage with the development of welding technological equipment in the ZTS [Heavy Engineering Works] VHJ [economic production unit] in Martin, of machining and profiling machinery in the TST [Plants for Engineering Machinery] VHJ in Prague, and furthermore in the electrical engineering industry and several non-engineering branches.

An especially troublesome problem for the further development of industrial robots and manipulators concerns the development and production of the vital assembly parts and modules, particularly for automation and control technology, drives and transmissions. The line of production of the existing parts and module base for industrial robots and manipulators in the CSSR does not satisfy the needs of robotization and in some instances has failed to achieve even the required technical standard.

In this area we envisage a great contribution from international cooperation in R&D with the CEMA states. Specific accomplishments in cooperation with the USSR thus far include three jointly designed models of industrial robots and manipulators (UM 160 universal manipulator with 160 kp carrying capacity, AM 5 automatic manipulator with 5 kp carrying capacity, and MTL 10 manipulator for die casting with 10 kp carrying capacity).

Within the Comprehensive Program for the Development of Robotization higher forms of cooperation in R&D and joint solutions with the USSR have been applied since 1981. They are focused on the development of industrial robots and

manipulators, technological robot complexes and model accessory equipment on a contractual basis. At present an agreement for the organization of a joint CSSR and USSR planning and design institute has been drafted. In the first stage robotized technological production complexes and technologies for machining of rotary parts will be built.

As for R&D, we may note that an R&D base has been established for the program of robotization. Its next task is to raise the technical standard and dependability of industrial robots and manipulators and to improve their adaptability to technological conditions. However, other appropriate development institutes must also take part in the development of vital assembly parts and modules.

Management of Production

The production of industrial robots and manipulators is concentrated in selected manufactures in the branches of general engineering, electrical engineering, metallurgy and heavy engineering. When organizing the production base we started with the technological equipment of the manufacturers in order to enable them to deliver the necessary robotized technological complexes. The fulfillment of the tasks in the Seventh 5-Year Plan depends on key manufacturers who will gradually complete the building of the production base by reconstructing and modernizing their facilities. For that purpose decision No 15 of the CSSR Government specified for the Seventh 5-Year Plan investments in the category of construction projects under Kcs 2 million and Kcs 430.2 million for the machinery and equipment not included in the budget.

It should be noted that modernization and reconstruction of production facilities fell short of the plan. In 1981 and 1982 only the Ministry of General Engineering drew for that purpose assets in the amount of no more than Kcs 17.8 million.

In 1981 the plan for industrial robots and manipulators was fully met. In reality, 348 units were completed at a price of Kcs 51.8 million while the plan for the production called for 292 units at a price of Kcs 43.4 million. The production of 421 units of industrial robots and manipulators in the value of Kcs 84.5 million was planned for 1982; however, 615 units were manufactured at a price of Kcs 65.6 million. This year the planned structure of production has not been met primarily in the line of models of industrial robots and manipulators. The ZPA [Machinery and Automation Plants] in Presov, the Snina in Vihorlat and the ZTS in Kosice failed to fulfill their planned tasks. The production of special-purpose and manual manipulators was substantially overfulfilled. This year 750 units of industrial robots and manipulators will be manufactured instead of the planned 592 units. However, the discrepancy in the production of the line of model industrial robots and manipulators continues.

Assembly Parts and Modules

Multiple production of industrial robots and manipulators and the construction of institutes for automated technology are contingent on deliveries of

essential assembly parts and modules in due term and in required quantity and quality. In 1981 and 1982 the deliveries of direct-current electric drives from the MEZ [Moravian Electric Appliances Plant] in Brno and, consequently, the deliveries of control systems from the ZPA in Presov were causing the greatest problems.

So far standard concepts of control systems for production technology and industrial robots and manipulators on the basis of microprocessors could not be developed. This indirectly affects the economic parameters of the newly organized institutes for automated technology equipped with industrial robots and manipulators.

Application of Robots and Manipulators in the Process of Production

The area for the application of robots and manipulators is paramount for the fulfillment of the tasks stipulated by the state goal-oriented program. The actual situation for the introduction of industrial robots and manipulators in the CSSR is characterized by the following:

The state goal-oriented program stipulates that 1,500 automated technological workplaces be established and 3,000 robots or manipulators introduced before the end of 1985. Thus far 443 automated technological workplaces have been opened and 1,093 robots and manipulators installed. Individual ministries must secure investments to meet realistic technical and economic objectives for the organization of workplaces equipped with industrial robots and manipulators, promptly complete the development of programs for the organization of such workplaces, obtain adequate facilities for production, service, material supplies of components, and before 1985 train annually 500 service and maintenance personnel for automated technological workplaces and 600 designers.

Organization and Management of the Robotization Program

Central agencies and the middle echelon of management and production enterprises are gradually becoming involved in the program of robotization in the spheres of organization and management of state goal-oriented program 07. Thus, a coordinated process is being developed among the consumer sphere, development and production, primarily in the ministries of general engineering, metallurgy, heavy engineering and electrical engineering. The process of robotization, however, will advance very rapidly also to non-engineering branches and become gradually known throughout our society.

These facts impose great demands for coordination of the whole program on central agencies, above all on the government commission for R&D as the agent coordinating the state goal-oriented program. The draft for the principles of organization and management of state goal-oriented program 07 followed the pattern of other goal-oriented program. Those principles are based on the central idea of organizing the Council of the Program for the Development of Robotization as an advisory agency (with the deputy chairman of the governmental commission for R&D as its head). The council's task is to determine and propose concepts for the development of robotization in the

CSSR in order to fulfill the decisions of higher agencies, to specify and control objectives of the technological development and the R&D base, to prepare the groundwork for the 5-year plans and for annual plans for the production and application of industrial robots and manipulators and for the development of their production base, and to coordinate international R&D and economic cooperation with the CEMA countries.

The Council of Chief Designers for Industrial Robot Technology was established to manage the program of robotization within the entire CEMA. The members of the council are representatives of 8 socialist countries who signed the general agreement on multilateral cooperation in the development and organization of specialized and cooperative production of industrial robots. In the first stage of its operation the council will determine specific needs for individual models of robots and manipulators in the CEMA member states, select a standard system of technical requirements, prepare a list of standard modules, components and parts, and agree on a program for technical standardization, including standardization of testing methods. After that will follow the organization of international division of labor in the actual production of robots and industrial manipulators. A general agreement stipulates specific details for the period up to 1995.

9004

CSO: 2400/146

LACK OF PROGRESS BY 'RATIONALIZATION BRIGADES' SCORED

Bratislava PRAVDA in Slovak 27 Dec 83 p 1

[Editorial: "An Important Creative Initiative"]

[Text] One does not have to be an economist to see the obvious advantage of an investment which yields a Kcs 25 return of each Kcs invested. This is not an exceptional ratio, but rather an average which, alas, was attained only by a few metalworking plants in Slovakia. Credit for achieving such a high return must be given to the comprehensive rationalization brigades [KRB] which solved many problems hindering increases and improvements in production of required types of goods.

Let us imagine what wealth would flow into the state, that is the common treasury and treasury of individual enterprises, if similar results had been achieved by most KRB's and if others had followed their example. Arithmetic is simple. We know that there are 19,197 KRB's with 178,112 members at the present time.

It is not necessary to offer evidence of the manifold usefulness of KRB's. It is more important to ponder upon the phenomenon which has not yet been analyzed in depth: the KRB movement has become stagnant. Their number declined by 2.8 percent and membership by 6.6 percent last year. We could perhaps overlook these data if the principal indicator summarizing the results achieved by KRB's had been more favorable. However, it reveals just the opposite: the number of tasks solved with the help of KRB's declined 4.9 percent in comparison with 1980.

This happened at a time when the party is putting extraordinary emphasis on the intensification of the economy and the 1984 plan is so conceived as to promote a rising trend and to achieve more rapid development of the national economy, and when, to paraphrase the passage from the report submitted at the Ninth Plenum of the CPCZ Central Committee, the basic road to the implementation of the plan is the consistent application in practice of scientific and technological achievements and the KRB's are regarded as one of the most important forms of creative initiative.

The last 2 years certainly offered enough opportunities to adopt measures which would not only have maintained but even accelerated the dynamism of

KRB development. Yet these opportunities were not properly used and so we lost 2 years to time -- that time to whose saving "the entire economy is ultimately reduced."

We registered a more intense interest in learning the causes of stagnation in the KRB movement, whose growth had been impressive until that time, after the Eighth Plenum of the CPCZ Central Committee. "An important role is assigned to the KRB," said Comrade Milos Jakes in his report. "It is necessary to promote their growth. They make it possible to intensify cooperation and joint activity of blue-collar workers, cooperative farmers and members of the scientific-technical intelligentsia, to overcome ministerial, sectoral and enterprise barriers, to strengthen the unity of the working class and scientific-technical intelligentsia..."

Comrade Miloslav Hruskovic spoke on the same topic at the plenary session of the CPSL Central Committee in September: "We are disturbed by the declining number of KRB's as well as by the decreasing ratio of blue-collar workers in their membership..."

It is next to impossible to say in a word what caused the stagnation of KRB's. It is a phenomenon which has several causal contexts and links to other economic processes. However, some causes must be identified in their general form so that the party organizations as the first guarantors of social interest and trade union organizations, which are coresponsible for the implementation of the Principles of KRB Activity, could in the area of their jurisdiction determine why "their" KRB's have not achieved results which they should have achieved.

The survey conducted by the Central Council of Trade Unions [URO] was rather revealing. Here are some of its findings: some of the KRB's came into being spontaneously; many brigades complain that economic management does not take them particularly into consideration or suggests projects which are part of the work of technical departments of the organizational unit. Among other anomalies to be mentioned are lengthy administrative procedures on the matters concerning KRB's and so on.

All these shortcomings give the impression that certain not very complex organizational and administrative changes would be sufficient to put things gradually into order.

However, these shortcomings are only the phenomenal aspect of the matter, the tip of the iceberg which lies deep under the surface.

In order to come closer to the heart of the problem we must first give an answer to the question, of whether the blue-collar workers, technicians and members of the creative intelligentsia are really interested in participation in KRB's.

The facts are convincing. Creative effort has not abated. While the number of KRB's declined in the last 2 years, there was a numerical increase in the improvement proposals and inventions during the same period. In other words, if the workers' technical potential had been reflected more through KRB's, which can dare to engage in more complex tasks, we would have definitely registered a larger number of innovations of a higher order.

Another question comes to mind: have not the KRB's exhausted the possibilities of their growth?

Let us rely on the facts again. From its very beginnings the KRB movement has been continuously improving and developing new forms. Supraenterprise and combined KRB's have been coming into being which overcome sectoral and other obstacles that could be removed only with considerable difficulty so far. New brigades formed primarily by scientists of basic research have already been formed. As the problem assumes a concrete shape, they are gradually replaced by representatives of applied research, design, technology and prominent blue-collar workers. Various and very diversified implementation teams may be included in the same category as KRB's. Experiences with the construction of nuclear power plants led to the proposals for well-thought-out participation of KRB's in the state goal-oriented programs as well as programs of a lower order. Without hesitation, the KRB's can be labeled the "training centers" for matrix structures of management operating along the horizontal lines and overcoming certain limitations of line management. Some people do not like hearing comment on line management, but wishes are not of decisive importance. Soviet experiences have confirmed that "the more precisely the line structure is tuned and mechanism of its functioning elaborated, the more it resists changes, re-orientation to new production or technology, extension of nomenclature and services."

All necessary social conditions thus exist for overcoming the stagnation of the KRB movement and for its further growth.

The party organizations and also trade unionists and management personnel should without delay, but in any case in connection with the implementation of the resolution of the Eighth Plenum of the CPCZ Central Committee and taking into account the resolution of the Ninth Plenum of the CPCZ Central Committee, reread that passage in the September report of the CPSL Central Committee which found the cause of the KRB stagnation -- we quote Comrade Hruskovic -- "in lack of appreciation of this movement particularly on the part of economic management, enterprises and VHI's [economic production units]".

They should pause upon reading this passage because a view through the problems of KRB's makes it possible for both of them to see from another angle the attitude of the enterprise (and particularly of its management) toward creative technical initiative.

It is not the object of an editorial to deal in more detail with the technical aspect of this matter. Let us now examine its political aspects...

There are managers who believe that to know machines and technology is enough for management. However, a manager who does not take people into account and who does not promote their initiative (and KRB's are one of the most needed forms of this initiative) reveals something unflattering about himself even if he would state the opposite a hundred times. He does not and even cannot manage well because social life and production have become so complex that no qualified apparatus, not even the most experienced manager, can by himself cope with the tasks he must solve.

"Successful in management is he," says the world-famous scientist V.G.Afanasev, "who is able to rely upon the collective, on the experiences of the masses, on the skill and creative initiative of all subordinates without exception. The ability to channel the small springs of people's initiative and their creative activity toward a common goal is an important sociological aspect of management."

KRB's are one of these little springs and possess all the prerequisites to make these springlets and springs increasingly more abundant--and let us not be afraid to say so -- also more profitable.

10501

CSO: 2400/169

LOW HOUSING STANDARDS IN INDUSTRIAL, SOUTHWESTERN REGIONS

Cologne DEUTSCHLAND ARCHIV in German Vol 16, Dec 83 pp 1289-1302

/Article by Dr M. Melzer, research associate and W. Steinbeck, scientific-technical assistant, German Institute for Economic Research, Berlin: "Interim Results of the Housing Construction Program; Densely Populated and South-Western Regions of the GDR"/

/Text/ On a previous occasion we discussed the basic problems of the housing construction program and described the regional housing construction performance of the GDR's northern and central districts¹; the following is the result of a study of the conurbations and southwestern regions.

Aims and Performances in Regional Housing Construction

Until 1990 the numbers of households in the GDR will grow faster than the population; the reason is the relative increase in the population of household establishing age.² In addition we must expect further migration to the cities because these offer a more extensive infrastructure and better job opportunities. In the industrial conurbations and southwestern districts, in particular, the settlement structure is concentrated in relatively many cities of varying size. It is therefore, intended in future to construct housing especially in the cities shown in Graph 1,³ accompanied most likely by further neglect of smaller municipalities. The attempt is being made to avoid an additional expansion in the areas of cities while more and more tackling inner city restoration and establish smaller-scale new residential districts. An analysis of the new construction and conversion performances completed in the years 1971-1981 indicates that some 52 percent of all housing construction in these 10 years was accounted for by the industrial conurbations and southwestern districts. Calculated per 1,000 residents, Gera Bezirk recorded most residential buildings; disregarding this instance, all districts of the conurbations and southwestern region recorded relatively less housing construction than would correspond to the GDR overall average. Karl-Marx-Stadt Bezirk was in last place.⁴

When we extend the analysis to the kreises, quite a lot of urban kreises do record large volumes. They are, in particular, Halle-Neustadt, Jena and Suhl, but also Erfurt, Karl-Marx-Stadt and Gera. Also in good shape were the rural kreises of Altenburg and Weimar. The lowest housing construction performance realized per 1,000 residents was reported for the rural kreises Leipzig, Freital, Bischofswerda, Greiz, Dippoldiswalde, Weissenfels and Zwickau.

Graph 1--Important GDR Housing Construction Centers in Cities of the Industrial Conurbations and Southwestern Districts Through 1990



Key:

1. Large and medium cities
2. Medium cities

3. Medium and small cities

Source: Johannes Schattel, "Improvement in the Efficiency of Long-Range Site Conceptions for Comprehensive Housing Construction," ARCHITEKTUR DER DDR, No 11/1979, p 644.

In the industrial conurbations and southwestern districts, too, new construction used to be oriented only in part to the state of supplies and the age structure. Though Gera had already achieved average supply status as early as 1971, its stock of old buildings was lower than in almost all districts studied, and comparatively little damage to the building stock had occurred, quite a lot of new housing construction proceeded--calculated per 1,000 residents. Suhl and Erfurt districts, on the other hand, featuring a much below average supply level in 1971, did not record corresponding new housing construction.

Modernization also was unequally distributed with respect to the various regions. In the regions studied, Gera again recorded the top performance if we relate the housing modernized in 1971-1981 to the prewar stock noted in 1971. All other districts of the industrial conurbations and southwestern region show modernization rates below the GDR average. The rate is lowest in Karl-Marx-Stadt and Dresden.⁶

Regional Housing Construction Performance 1971-1981¹ in the Conurbations and South-western Regions of the GDR

(1) Bezirke	(2) Fertiggestellte Wohnungen								
	(5) insgesamt	(3) im Neu-, Um- und Ausbau			(5) insgesamt	(4) durch Modernisierung			(10) Modernisierungs- quote ⁴
		(6) Neubau	(7) Um- u. Ausbau	(8) gesamt je 1000 Ein- wohner ²		(9) davon nach Kategorien ³			
						I	II	III	
(14)	(Anzahl)				(Anteil in % v. H.)			(vH B)	
Ballungsgebiete	602 990	393 358	53 283	62,6	156 349	20,7	56,9	22,4	7,0
Dresden	150 756	100 236	13 466	61,9	37 054	20,2	54,8	25,0	6,5
Halle	161 220	110 415	11 768	65,2	39 037	13,5	59,3	27,2	7,5
Karl-Marx-Stadt	161 830	103 719	15 247	60,1	42 864	24,3	53,4	22,3	6,4
Leipzig	129 184	78 988	12 802	63,5	37 394	24,5	60,4	15,1	8,2
Südwestbezirke	235 892	160 670	18 717	70,8	56 505	18,2	62,2	19,6	8,1
Erfurt	110 897	79 384	7 240	69,6	24 273	17,2	64,8	18,0	7,2
Gera	79 407	52 090	6 936	79,8	20 381	18,4	62,2	19,4	9,9
Suhl	45 588	29 196	4 541	61,3	11 851	19,8	56,9	23,3	7,6
DDR, insgesamt	1 607 142	1 084 704	119 809	71,4	402 629	17,4	57,0	25,6	8,4

1 Um- und Ausbau sowie Modernisierung der Jahre 1979 bis 1981 z. T. vom DIW geschätzt. – 2 Anzahl der durch Neu-, Um- und Ausbau geschaffenen Wohnungen gewichtet mit der jeweiligen Wohnbevölkerung im Durchschnitt der Jahre 1971 bis 1981. – 3 I = Einbau von Be- und Entwässerung, Innotoilette und modernem Herd; II = wie I sowie zusätzlich Bad bzw. Dusche und Warmwasserbereitung; III = wie II sowie zusätzlich modernes Heizsystem. – 4 Anzahl der von 1971 bis 1981 modernisierten Wohnungen in vH des Bestandes der vor 1945 gebauten Wohnungen am 1.1.1971.

Quellen: Statistische Jahrbücher der DDR; Berechnungen des DIW.

1 Um- und Ausbau sowie Modernisierung der Jahre 1979 bis 1981 z. T. vom DIW geschätzt. — 2 Anzahl der durch Neu-, Um- und Ausbau geschaffenen Wohnungen gewichtet mit der jeweiligen Wohnbevölkerung im Durchschnitt der Jahre 1971 bis 1981. — 3 I = Einbau von Be- und Entwässerung, Innentoilette und modernem Herd; II = wie I sowie zusätzlich Bad bzw. Dusche und Warmwasserbereitung; III = wie II sowie zusätzlich modernes Heizsystem. — 4 Anzahl der von 1971 bis 1981 modernisierten Wohnungen in vH des Bestandes der vor 1945 gebauten Wohnungen am 1.1.1971.

Quellen: Statistische Jahrbücher der DDR; Berechnungen des DIW.

Key:

- | | |
|--|--|
| 1. Districts | 9. By categories ³ |
| 2. Completed housing units | 10. Rate of modernization ⁴ |
| 3. New construction, conversion and remodeling | 11. Numbers |
| 4. Modernization | 12. Percentages |
| 5. Total | 13. Percent |
| 6. New construction | 14. Industrial conurbations |
| 7. Conversion and remodeling ² | 15. Southwestern districts |
| 8. Total per 1,000 residents ² | 16. Total GDR |

Footnotes: 1. Conversion and remodeling as well as modernization 1979-1981, in part DIW estimates.-- 2. Apartments provided by new construction, conversion and remodeling, weighted for the respective residential population in the average of 1971-1981. 3. I equals installation of piped water and sewage pipes, inside toilets and modern kitchen stoves; II equals I plus bath or shower and hot water facilities; III equals II plus modern heating systems.-- 4. Housing units modernized 1971-1981 as a percentage of the housing stock constructed before 1945, as of 1 January 1971.

Sources: GDR Statistical Yearbooks, DIW computations

The Problem of the Renewal of Old Housing Stock

At the time of the 1971 housing census, a considerable amount of damage to the building stock was noted. The state of residential buildings varied mainly in accordance with the age structure, but quite a few of even the medium-age buildings were dilapidated. No more than 20 percent of all apartments in residential buildings were in satisfactory condition, just under two thirds displayed slight, 15 percent serious damage. One percent had to be classified as uninhabitable.

This widespread dilapidation is the consequence of the long-standing neglect of repairs, modernization and maintenance up to the early 1970's. In view of the extremely low level of rents, neither private building owners nor the communal housing administration and cooperatives were able to finance even the most urgent of the necessary repairs.⁸ Matters only improved in the 1970's, when the state incorporated the modernization of old building stock in the plans, financing it from budget resources and by loans, and at the same time decided on the limited demolition of old and decrepit buildings that were not worth restoring. Subsequently building repairs of residential buildings increased to about 40 percent of total housing construction output recorded in the housing construction volume⁹--in the 1950's they accounted for only 20 percent and in 1960 for 28 percent. Admittedly, this figure includes major overhauls (modernizations) as well as the conversion and remodeling of housing units,¹⁰ consonant with GDR statistical usage.¹¹ While the percentage of converted and remodeled housing in total completed units declined very noticeably since the mid-1970's, modernization took the opposite route¹²: In 1971 only just on 11,000 housing units were modernized, by the mid-1970's that figure had climbed to 35,000 annually, in 1978 it amounted to 46,000 and in 1981 to 54,000 housing units.¹³

As we noted when considering the northern and central regions, the modernization performance to be expected in this decade through 1990 may yield a general overhaul of only about 35-40 percent of the GDR's 1971 modernization potential (around 2.7 million apartments). In addition to the limited construction capacities that often need to be temporarily diverted in order to punctually complete new buildings, the reason is the (up to now) low productivity of reconstruction measures by comparison to new construction--and this makes them more expensive.

The rehabilitation of inner city areas requires the achievement of some kind of optimal balance between new construction, reconstruction, modernization and maintenance. Involved here is the differentiated building cover of various locations, in other words the linkage between the reconstruction and modernization of old buildings and the closure of gaps by new buildings, coupled with the simultaneous and comprehensive repair of roofs, facades and foundations of entire streets.¹⁴ Preparations for such proceedings are far more complex than the construction of new buildings on virgin sites.¹⁵

The qualitative improvement of the housing stock therefore more and more emphasizes intensification with regard to housing construction.¹⁶ The extent and condition of the building stock worth maintaining and modernizing differ considerably on each site; moreover, the sizes of old available housing units usually need to be made to correspond to local needs, while it is also necessary to reshape the surroundings of the buildings (open spaces, traffic areas). Often the demands on the supply and disposal networks, vital to improve amenities, turn into particularly serious problems. At the same time the wiring in existing buildings does not allow for sensible sanitary facilities and modern electric household appliances to be connected; for that reason great efforts are made to achieve cost saving solutions such as the installation of joint wiring systems with neighboring buildings. Lastly let us point out the varying types of ownership of the buildings and sites affected by inner city construction measures: They require appropriate agreements to be carried out with respect to the rehabilitation work. This results in extensive and

complex preparatory measures that take up a lot of time in the planning stage. We may also note that it is impossible to carry on modernization ad lib, and the same applies even more to major reconstruction programs. Especially affected are the exceptionally time and money consuming medieval inner city building covers with outstanding cultural value (building monuments), but also compact mixed residential districts from founder times, that urgently need loosening up.¹⁷

GDR architects have wrestled with urban rehabilitation issues ever since the 1960's, when it was noted that the average age of apartments in small and medium cities with 10,000-100,000 residents was 65 years, that 20 percent of housing units were more than 100 years old, and the poor condition of the buildings suggested a maximum of 20-30 years of further use. Since that time many studies have been produced, dealing with the transformation of such cities,¹⁸ but the immense costs and the problems of prefabrication--usable only with the greatest difficulty here (poor adaptability of the sections)¹⁹ permitted the achievement of only modest successes with regard to actually completed rehabilitations. Merseburg in Halle Bezirk is indicated as the outstanding example of inexpensive construction in the inner city.²⁰ It seems that a gradual change with respect to rehabilitation is now on the cards. In 1983 Karl-Marx-Stadt Bezirk, for example, began the reconstruction of 1,000 apartments,²¹ at least 4,000 are to be completed by 1985.²² In Leipzig, too, (the Lindenau-Leutzsch modernization complex),²³ and in Dresden rehabilitation is being tackled with somewhat greater energy. However, by comparison with the overall reconstruction need, these efforts can only be described as modest beginnings.

Present-Day Quantitative Housing Supply

The preliminary results of the 1981 housing census reveal that some 58 percent of the present-day housing stock are accounted for by the conurbations and southwestern districts. Their percentage of the total residential population is roughly the same (just about 57 percent). However, considerable differences are noticeable in availability between the various districts of the GDR regions studied. By the criterion of housing density,²⁴ Karl-Marx-Stadt Bezirk is in first place at 425; living space per resident is 22 square meters. This district is followed by Leipzig (407) and Dresden (406). Due to mostly larger apartments in their relatively abundant old housing stock, these two boast somewhat larger average living spaces--23 and 24 square meters per resident respectively. Erfurt and Suhl are the districts with the poorest housing supply--housing density is 372 and 276 apartments respectively, with 23 square meters of living space being available per resident. Even more unequal supply ratios are discernible following an analysis of the various kreises, although it was possible for this purpose to ascertain only the supply figures of early 1981, including apartments not used for housing: Housing density is least favorable in the urban kreises of Weimar (333) and Suhl (347) and the rural kreises Heiligenstadt (314), Bald Salungen (332), Kamenz (336) and Soemmerda (340); living space per resident in these areas ranges from 19-23 square meters. The housing density in another 16 kreises²⁵ ranges from 350-370 units; here the average living space per resident amounts to 20-25 square meters.

Examples of Completed and Planned Major Residential Complexes in Industrial Conurbations and Southwestern Regions of the GDR--New Housing Construction Figures (Figures of Residents)

(1) Bezirkshauptstadt bzw. Stadt	(2) Wohngebiet	(3) 70er Jahre	(4) 80er Jahre
Dresden	Leuben Dresdner Süden Altfranken Prohlis Racknitzhöhe Juri-Gagarin-Straße Kohlenstraße Goritz Langebrück Nord Görlitz Freital Bautzen Großenhain	3 500 (9 500) 10 944 (30 000) 6 000 (16 000) 10 000 (27 000) 1 222 (4 000) 900 (3 000) 2 240 (6 000) 15 000 (45 000) 750 (2 000) 2 000 (5 400) 5 300 (15 000) 1 272 (> 3 500)	in Planung 30 000 (75 000)
(6)	[weitere Standorte des komplexen Wohnungsbaus: Löbau-Ost, Pirna »Lindenstraße«, Coswig »Steinbacher Weg«, Freital-Deuben, Zittau-Niederoderwitz]		
Halle	Silberhöhe Weißenseiler Kugelberg	11 600 (40 000)	15 000 (45 000)
Halle-Neustadt	—	20 000 (rd. 60 000)	(7) Erweiterung WK II 3400/11 000
Wolfen	Am Südpark Sondersdorf Nord WK III Nord WK IV	810 (2 500) 3 400 (10 000) 2 000 (6 000)	4 300 (13 000)
Dessau	Süd Zoberberg	1 600 (5 000)	20 000 (60 000)
Wittenberg	Traujnscher Bach	WKI-III 3 710 (12 000)	WK IV 3 380 (10 000)
Merseburg	Sixtstraße/Brühl/Roßmarkt Saaleprom./Entenplan-Burgstraße Unteraltenburg	951 (3 000) 325 (1 000) 730 (2 000)	
Karl-Marx-Stadt	Fritz Heckert Brühl Sonnenberg (Rekonstruktionsstandort)	> 20 000 (60 000)	(8) > 16 000 (> 40 000) Ersatzneubau 620 (2 000) 2 300 (7 000)
(6)	[weitere Standorte des komplexen Wohnungsbaus: Glauchau »Sachsenallee«, Döbeln-Nord »WG Am Holländer«, Zwickau-Eckersbach]		
Leipzig	Messemagistrale Musikviertel WK Schönefeld WK Mockau (Ost u. West) WK Thelia II Lössnig, WK. Johannes R. Becher	2 300 (6 000) 950 (2 500) 4 300 (11 500) > 4 300 (12 000) 1 600 (4 300)	3 200 (8 500) (Bauzeit 1976–1986) > 37 000 (ca. 100 000) (Baubeginn 1984) 20 000 (50–60 000)
Altenburg	Grünau Pauensdorf/Ergelsdorf	2 980 (9 000)	4 112 (11 000)
Torgau	Südost	2 065 (5 500)	2 000 (5 400)
Borna	Nord Gnandorf	1 650 (4 400) 1 500 (4 000)	
Erfurt	Nord davon: Nordhäuser Straße Roter Berg Rieth Johannesplatz Südost davon: Herrenberg Wiesenhügel Am Drosselberg Am Buchenberg	> 16 000 (48 000)	> 8 000 (25 000) 10 000 (30 000) 5 500 (16 000) 5 500 (16 000) 3 300 (11 000) > 15 000 (50 000) 5 500–6 000 (20 000) 3 100 (10 000) 3 200 (10 000) 3 200 (10 000)
Mühlhausen	Am Rieseneiger	2 200 (6 500) 1 500 (4 500) 1 800 (5 500)	
Arnstadt			3 700 (11 000)
Nordhausen			
Weimar	Am Stadion		
(6)	[weitere Standorte des komplexen Wohnungsbaus: Weimar »Dichterweg«, Eisenach »Petersberg«]		
Gera	Lusan Haselburg Bieblach-Ost (1. BA)	> 10 000 (> 30 000)	6 000 (18 000) rd. 400 (1 200) 3 054 (10 000)
(6)	[weiterer Standort des komplexen Wohnungsbaus: Jena »Lobeda«]		
Suhl	Ilmenauer Straße I	rd. 1 700 (5 000)	
(6)	[weitere Standorte des komplexen Wohnungsbaus: Suhl-Nord (WK). Schmalkalden-Waiberrich (z. Z. 3. BA), Ilmenau, Meiningen]		

Quelle: Zusammenestellt vom DIW anhand von Einzelangaben aus der DDR-Bezirks- und -Fachressource.

Key:

1. District capital or city
2. Residential district
3. 1970's
4. 1980's
5. Planned
6. Other locations of complex housing construction
7. Expansion
8. Replacement (new) construction
9. Reconstruction location
10. Construction period 1976–1986
11. Beginning construction 1984

Source: DIW compilation using various data from GDR regional and technical journals

In view of the regional divergences in the size of units, the distribution of housing density figures differs from that of living space per resident in the kreises, depending on the yardstick used. When living space is the criterion, Suhl (city) does worst, when housing density is considered, it is Heiligenstadt. The most satisfactory housing density is recorded by Jena urban kreis (493) and the rural kreises Klingenthal (466), Oelsnitz (464), Reichenbach (464) and Suhl (461). In the case of living space the leaders are Jena urban kreis (29 square meters) and the rural kreises Wismar (28 square meters), Schleiz (27 square meters) and Suhl (27 square meters).²⁶

Housing Stock at End 1981 in GDR Industrial Conurbations and Southwestern Districts

(1) Bezirke	(2) Wohnungen					(3) Wohnfläche je Einwohner	
	(4) insgesamt	(5) davon für		(6) je 1000 Einwohner		(7) insgesamt	(8) für Wohn- zwecke
		(9) Wohn- zwecke ²	(10) andere Zwecke ³	(11) insge- samt	(12) für Wohn- zwecke		
(15) Ballungsgebiete	2933 389	2 829 051	104 338	422	407	23,8	22,8
Dresden	762 690	730 818	31 872	423	406	24,2	23,0
Halle	736 940	709 797	27 143	404	389	23,3	22,3
Karl-Marx-Stadt	847 116	816 308	30 808	441	425	23,2	22,2
Leipzig	586 643	572 128	14 515	417	407	24,7	24,1
(16) Südwestbezirke	989 200	956 878	32 322	391	378	24,2	23,4
Erfurt	471 325	460 762	10 563	380	372	24,1	23,5
Gera	304 540	289 557	14 983	410	390	24,7	23,4
Suhl	213 335	206 559	6 776	388	376	23,9	23,1
(17) DDR, insgesamt	6 806 735	6 569 005	237 730	407	393	23,6	22,7

1. DIW-Fortschreibung der Wohnraum- und Gebäudezählung vom 1.1.1971. — 2. Vorläufige Ergebnisse der Wohnungszählung vom 31.12.1981. — 3. Umwidmungen (z.B. Arzt-, Anwaltspraxen oder andere Geschäftsräume in Wohngebieten) sowie von Ausländern (z.B. sowjetische Familien oder Verwaltungen) belegte Wohnungen.
Quellen: Statistisches Jahrbuch der DDR 1982 sowie Berechnungen des DIW.

Key:

- | | |
|------------------------------|--|
| 1. District | 7. For residential purposes ² |
| 2. Apartments | 8. Other purposes ³ |
| 3. Living space per resident | 9. Numbers |
| 4. Total ¹ | 10. Square meters |
| 5. Including | 11. Industrial conurbations |
| 6. Per 1,000 residents | 12. Southwestern districts |
| | 13. Total GDR |

Footnotes: 1. DIW extrapolation of the living space and building census of 1 January 1971.-- 2. Preliminary results of the housing census of 31 December 1981.-- 3. Diversions (for instance physicians' or attorneys' offices or other business premises in residential districts) as well as apartments occupied by aliens (for example Soviet families or administrative offices).

Sources: 1982 GDR Statistical Yearbook and DIW computations

The Current Standard of Equipment in Districts and Kreises

The data compiled for the current standard of equipment in the various regions up to the beginning of 1981 relate to the entire housing stock (including apartments used for other than housing purposes).²⁷

Compared with the overall average, the kreises in the industrial conurbations and southwestern regions of the GDR also demonstrate substantial differences. The overall average is as follows: 25 percent of housing units have central heating, 43 percent piped hot water, 55 percent are equipped with bath/shower and inside toilets, 90 percent have piped water. Comparisons yielded the following significant results:

- Among the currently 114 urban and rural kreises of the industrial conurbations and southwestern districts in the GDR, more than 25 percent of housing units are centrally heated in only 21 kreises (including 12 urban kreises); in another 74 kreises every 5th-10th apartment has a modern heating system. In 9 rural kreises not even every 10th housing unit boasts this convenience.²⁸
- In only 12 kreises more than 60 percent of housing units have baths or showers, in 5 rural kreises less than 30 percent offer this facility.²⁹ In most kreises just about half the housing units boast such sanitary installations.
- In 31 kreises more than half the apartments are equipped with inside toilets, in another 69 the figures range from only 30 percent to 50 percent, and in 14 kreises amount to less than a third. Zwickau (rural) comes off worst, only 21 percent of housing units being supplied with inside toilets.
- The industrial conurbations and southwestern districts display similarly wide differences with regard to piped water. In 56 kreises (including 13 urban kreises), more than 90 percent of housing had piped water inside. However, this minimum equipment was lacking in a third of the housing stock of 4 kreises (the rural kreises Goerlitz and Niesky in Dresden Bezirk, Erfurt and Saalkreis in Halle Bezirk).

It is interesting to note that, among the industrial conurbations, Halle-Neustadt was the leader by far in the matter of equipment, far exceeding the average. The reason is the fact that the housing stock in this district dates almost exclusively from the postwar period. Satisfactory equipment standards are also recorded for all district capitals, while the respective surroundings show a sharp drop despite the desirability of their being developed for or settled by commuters. These existing differences and the often poor availability of transportation and cultural facilities in these surrounding areas are hardly suited to prevent further migration. The backwardness of the surrounding areas is also considerable in the case of urban kreises not including district capitals, but it is somewhat less pronounced simply because these cities themselves are less developed.

It thus appears that regional housing construction policies are less geared to sociopolitical aspects (although these are constantly stressed) than to important economic goals (for example the overall steering of manpower). The GDR economic leadership is evidently endeavoring to improve housing quality in medium sized cities (in addition to large cities), so as to render local industrial settlements more attractive to new workers.³⁰ The smaller communities, on the other hand, continue to be seriously neglected.

Data Relating to the Regional Housing Supply and Equipment--Status of
1 January 1983

Bezirk 1) Kreis 2)	Wohn- bevöl- kerung	4) Wohnungen		5) Ausstattungsgrad					6) Wohnfläche	
		insgesamt 7)	je 1000 Einwoh- ner 8)	Wasser- an- schluß 9)	Innen- toilet- te 10)	Bad 11 oder Dusche 12)	Warm- wasser 12)	Zentral- heizung 13)	insgesamt 7)	je Einwoh- ner 14)
in 1000		15) Anzahl								
Dresden	1 808	752,4	416	87,0	49,7	46,7	41,6	19,8	42 989	23,8
Bautzen	126	47,1	374	82,2	44,2	41,3	35,2	17,4	2 901	23,0
Bischofswerda	69	27,5	399	74,6	28,9	29,7	29,9	9,0	1 500	21,7
Dippoldiswalde	45	18,1	402	75,1	37,2	35,6	32,6	11,4	1 033	23,0
Dresden (Land)	113	47,5	420	86,0	42,1	39,8	38,4	13,1	2 734	24,2
Freital	87	37,6	432	89,0	38,6	32,0	31,5	8,1	1 883	21,6
Görlitz (Land)	31	12,7	410	65,7	36,3	40,7	28,0	12,3	785	25,3
Großenhain	42	15,9	379	72,2	32,9	38,9	29,2	10,9	989	23,5
Kamenz	62	23,2	336	79,7	40,2	43,5	31,1	13,0	1 353	21,8
Löbau	101	41,7	413	71,4	29,1	29,8	28,2	12,8	2 277	22,5
Meißen	125	48,7	390	83,1	35,4	33,0	32,3	10,2	2 730	21,8
Niesky	39	14,3	367	66,9	35,3	39,1	25,5	11,7	849	21,8
Pirna	119	50,3	423	87,7	46,8	43,8	41,1	16,7	2 708	22,8
Riesa	100	35,7	357	85,9	52,3	51,5	37,8	20,3	1 968	19,7
Sebnitz	54	22,6	419	75,9	36,2	38,1	37,4	14,5	1 228	22,7
Zittau	95	39,7	418	80,1	32,4	33,9	33,5	11,0	2 178	22,9
Dresden (Stadt)	518	233,4	451	100,0	72,7	65,6	57,9	33,9	13 716	26,5
Görlitz (Stadt)	82	36,4	444	88,0	47,4	42,1	40,7	17,7	2 157	26,3
Erfurt	1 237	463,5	375	92,3	52,3	53,7	41,0	24,0	29 449	23,8
Apolda	51	20,4	400	95,4	41,7	50,9	38,9	18,2	1 239	24,3
Arnstadt	67	25,0	373	93,3	43,2	46,2	38,5	16,9	1 555	23,2
Eisenach	116	42,3	365	100,0	51,2	51,2	40,2	17,7	2 775	23,9
Erfurt (Land)	48	16,9	352	67,1	24,7	39,3	23,4	13,2	1 120	23,3
Gotha	146	57,5	394	93,9	50,1	49,4	44,9	23,4	3 621	24,8
Heiligenstadt	42	13,2	314	98,5	44,8	55,6	30,9	17,9	965	23,0
Langensalza	47	16,7	355	77,8	36,5	42,7	20,2	14,3	1 155	24,6
Mühlhausen	93	33,4	359	87,1	38,9	44,2	30,1	18,0	2 120	22,8
Nordhausen	111	42,5	383	87,7	48,6	50,9	34,3	22,1	2 614	23,5
Sömmerda	67	22,8	340	81,7	43,5	50,4	26,8	17,0	1 452	21,7
Sonderhausen	55	20,8	378	89,8	43,1	50,8	30,5	18,1	1 365	24,8
Weimar (Land)	44	18,1	411	94,5	48,7	57,3	44,2	29,8	1 227	27,9
Worbis	74	26,6	359	88,7	48,1	59,2	43,9	34,6	1 776	24,0
Erfurt (Stadt)	212	86,3	407	99,8	75,4	67,2	59,6	37,0	5 022	23,7
Weimar (Stadt)	64	21,3	333	100,0	81,2	62,4	47,7	26,5	1 445	22,6

[continued on following page]

Bezirk 1) Kreis 2)	Wohn- bevöl- kerung	4) Wohnungen		5) Ausstattungsgrad					6) Wohnfläche	
		insgesamt 7)	je 1000 Einwoh- ner 8)	Wasser- an- 9)	Innen- toilet- te 10)	Bad oder 11 Dusche	Warm- wasser 12)	Zentral- heizung 13)	insgesamt 7)	je Einwoh- ner 14)
				schluß	16) in vH aller Wohnungen					
	in 1000	15) Anzahl							in 1000 qm 17)	qm 18
Gera	740	298,7	404	95,8	54,6	55,6	38,5	25,5	18 027	24,4
Eisenberg	34	13,2	388	92,5	37,2	41,8	24,1	11,9	792	23,2
Gera (Land)	62	26,0	419	86,9	36,3	44,9	23,9	13,5	1 553	25,0
Greiz	60	25,0	417	89,7	33,7	35,7	24,5	9,2	1 363	22,7
Jena (Land)	36	13,3	369	100,0	45,5	53,5	29,8	20,3	909	25,3
Lobenstein	29	10,3	355	93,7	57,4	52,5	30,1	18,4	740	25,5
Pöggendorf	55	21,2	385	96,2	43,5	43,5	27,4	14,7	1 327	24,1
Rudolstadt	70	25,1	386	97,6	56,2	55,5	31,3	15,4	1 599	22,8
Saalfeld	60	21,9	365	100,0	67,3	63,2	38,5	18,4	1 362	22,7
Schleiz	33	12,7	385	96,8	45,8	53,9	32,0	16,5	905	27,4
Stadtroda	33	11,6	352	98,9	53,1	61,7	38,7	27,5	788	23,9
Zeulenroda	40	16,3	408	88,3	28,1	36,9	25,4	11,5	927	23,2
Gera (Stadt)	125	51,2	410	97,9	59,0	58,3	46,5	33,3	2 806	22,4
Jena (Stadt)	103	50,8	493	100,0	86,0	79,5	66,8	57,1	2 956	28,7
Halle	1 838	730,3	397	89,8	52,6	52,0	38,6	25,2	41 995	22,8
Artern	56	21,7	388	88,7	37,7	44,1	24,7	15,8	1 296	23,1
Aschersleben	68	27,0	397	81,8	41,9	42,8	32,0	22,9	1 546	22,7
Bernburg	83	33,3	401	84,0	37,7	37,7	27,3	19,0	1 786	21,5
Bitterfeld	131	49,4	377	94,1	54,7	53,5	36,2	25,6	2 651	20,2
Eisleben	78	32,6	418	87,2	36,2	39,1	22,9	12,4	1 693	21,7
Grafenhainichen	39	14,4	369	84,2	42,7	44,0	24,1	15,0	869	22,3
Hettstedt	57	21,3	374	87,6	39,9	49,4	33,9	18,0	1 260	22,1
Hohenmölsen	30	13,1	437	76,4	25,7	35,1	16,4	8,3	702	23,4
Köthen	82	31,4	383	79,5	40,7	39,2	27,7	16,0	1 777	21,7
Merseburg	133	56,0	421	92,7	68,1	68,5	46,8	23,6	3 253	24,5
Naumburg	59	21,7	368	90,0	48,5	47,8	33,3	12,0	1 422	24,1
Nebra	31	11,2	361	94,8	49,2	55,6	31,8	20,5	724	23,4
Quedlinburg	90	34,0	378	88,5	38,8	39,2	30,3	16,7	1 935	21,5
Querfurt	33	12,3	373	81,2	35,7	45,0	28,3	16,7	778	23,6
Roßlau	36	14,3	397	95,4	40,3	40,6	30,3	18,7	807	22,4

[Key on following page]

Data Relating to the Regional Housing Supply and Equipment--Status of 1 January 1983

Bezirk 1) Kreis 2)	Wohn- bevöl- kerung	4) Wohnungen		5) Ausstattungsgrad					6) Wohnfläche	
		7) insgesamt	je 1000 Einwoh- ner 8)	Wasser- an- 9)	Innen- toilet- te 10)	Bad oder 11 Dusche	Warm- wasser 12)	Zentral- heizung 13)	7) insgesamt	je Einwoh- ner 14)
		Anzahl 15)		16) in vH aller Wohnungen					in 1000 qm-17)	qm 18)
noch: Halle 19)										
Saalkreis	72	28,7	399	67,2	25,5	30,4	18,3	12,0	1 612	22,4
Sangerhausen	80	29,3	366	80,5	43,0	51,3	35,2	25,5	1 777	22,2
Weißenfels	69	27,7	401	85,8	39,4	41,1	30,1	11,8	1 539	22,3
Wittenberg	97	36,4	375	94,7	58,1	57,5	41,8	27,0	2 163	22,3
Zeitz	84	34,6	412	86,5	39,2	40,7	26,2	13,8	1 955	23,3
Dessau (Stadt)	103	40,5	393	99,1	79,7	67,4	59,5	40,6	2 318	22,5
Halle/Saale (Stadt)	232	98,4	424	99,6	67,5	55,7	44,5	25,8	5 863	25,3
Halle-Neustadt (Stadt)	95	41,0	432	100,0	100,0	100,0	100,0	98,3	2 269	23,9
Karl-Marx-Stadt	1 930	837,4	434	91,9	40,9	41,8	38,6	18,1	44 145	22,9
Annaberg	85	35,3	415	95,3	30,3	34,2	33,5	14,8	1 822	21,4
Aue	125	50,2	402	92,7	39,8	39,7	32,7	13,8	2 580	20,6
Auerbach	72	31,4	436	90,8	23,9	29,3	27,9	8,8	1 670	23,2
Brand-Erbisdorf	37	15,0	405	80,8	38,5	40,9	36,6	19,1	810	21,9
Flöha	53	22,8	430	86,4	32,0	32,2	33,5	13,8	1 167	22,0
Freiberg	85	33,7	396	85,2	50,3	49,4	44,7	20,0	1 875	22,1
Glauchau	70	31,3	447	93,1	40,0	41,1	39,0	13,7	1 676	23,9
Hainichen	69	29,2	423	79,6	33,1	35,8	32,5	10,3	1 393	23,6
Hohenstein-Ernstthal	63	27,4	435	91,3	30,8	35,0	36,6	13,1	1 393	22,1
Karl-Marx-Stadt (Land)	110	49,2	447	93,3	28,4	28,9	34,2	11,0	2 532	23,0
Klingenthal	36	16,7	466	87,5	29,9	30,5	33,1	12,8	842	21,4
Marienberg	66	26,6	403	84,6	31,1	32,3	29,2	13,1	1 415	21,4
Oelsnitz	39	18,1	464	83,9	32,4	33,3	32,4	13,6	953	24,4
Plauen (Land)	24	9,9	413	93,8	42,2	47,6	33,1	17,2	590	24,6
Reichenbach	59	27,4	464	88,3	29,7	31,2	30,4	8,3	1 378	23,4
Rochlitz	53	22,3	421	81,7	29,1	32,9	30,9	8,3	1 264	23,8
Schwarzenberg	59	22,3	378	99,9	55,8	54,0	35,1	17,0	1 265	21,4
Stollberg	84	35,5	423	91,6	26,3	28,7	32,8	10,9	1 787	21,3
Verdau	77	34,3	445	90,4	29,1	32,9	33,7	9,6	1 784	23,2
Zschopau	57	23,1	405	96,0	30,4	33,6	37,3	14,7	1 175	20,6
Zwickau (Land)	88	39,3	447	86,3	21,5	25,6	26,3	7,9	1 975	22,4

[continued on following page]

Bezirk 1) Kreis 2)	Wohnbevölkerung in 1000	Wohnungen 4)		Ausstattungsgrad					6) Wohnfläche	
		in:gesamt 7)	je 1000 Einwoh- ner 8)	Wasser- an-9)	Innen- toilet- te 10)	Bad 11 oder Dusche	Warm- wasser 12)	Zentral- heizung 13)	7) insgesamt in 1000 qm ¹⁷	je Einwoh- ner 14)
in 1000		15) Anzahl		16) in vH aller Wohnungen					in 1000 qm ¹⁷	
Karl-Marx-Stadt (Stadt)	318	144,5	454	96,5	62,2	59,7	53,9	36,4	7 644	24,0
Plauen (Stadt)	79	36,3	459	100,0	56,4	50,3	40,4	23,0	1 920	24,3
Zwickau (Stadt)	122	55,6	456	99,3	61,7	58,7	53,1	27,9	3 002	24,6
Leipzig	1 411	576,7	409	94,9	54,3	53,3	43,3	20,3	34 205	24,2
Altenburg	112	50,1	447	95,7	56,6	57,5	46,2	28,3	2 842	25,4
Borna	91	35,8	393	100,0	66,7	65,8	41,5	21,8	2 069	22,7
Delitzsch	53	20,2	381	81,4	50,0	52,1	41,6	16,6	1 156	21,8
Döbeln	95	40,1	422	90,5	41,8	38,6	36,8	15,5	2 249	23,7
Eilenburg	52	20,4	392	89,2	61,7	64,7	46,3	26,8	1 235	23,8
Geithain	37	14,1	381	90,8	41,0	48,5	38,9	15,4	822	22,2
Grimma	67	25,3	378	86,1	37,1	40,0	34,9	14,4	1 494	22,3
Leipzig (Land)	147	62,5	425	99,0	55,7	47,6	38,2	14,3	3 578	24,3
Oschatz	53	20,2	381	82,9	41,4	43,6	36,2	18,0	1 162	22,5
Schmölln	34	14,5	426	82,9	30,3	38,1	31,4	14,6	840	24,7
Torgau	55	20,6	375	82,0	49,3	52,2	38,4	16,8	1 291	23,5
Wurzen	52	20,4	392	89,0	42,1	44,8	38,7	14,6	1 169	22,5
Leipzig (Stadt)	563	232,4	413	100,0	60,4	58,1	48,8	22,8	14 278	25,4
Suhl	548	211,7	386	98,8	47,6	49,9	40,6	23,2	13 050	23,8
Bad Salzungen	90	29,9	332	100,0	48,4	52,1	37,5	19,5	1 975	21,9
Hildburghausen	60	21,2	353	94,4	39,8	44,3	29,9	17,6	1 486	24,8
Ilmenau	69	29,3	425	100,0	50,9	51,7	46,6	26,0	1 702	24,7
Meiningen	70	27,2	389	100,0	53,1	55,3	41,3	25,8	1 805	23,8
Neuhaus am Rennweg	38	16,6	437	98,2	40,5	40,4	38,4	19,0	972	23,6
Schmalkalden	65	25,0	385	98,9	36,7	42,7	33,2	15,9	1 494	23,0
Sonneberg	61	24,5	402	97,3	42,8	44,8	36,1	16,9	1 461	24,0
Suhl (Land)	44	20,3	461	99,8	38,3	40,3	33,3	18,5	1 188	27,0
Suhl (Stadt)	51	17,7	347	100,0	80,8	78,6	74,3	56,2	967	19,0

¹ Erfasst sind alle Wohnungen in Wohn- und Nichtwohngebäuden sowie Behelfsunterkünften, d.h. auch solche, die z.Z. anders als für Wohnzwecke oder nicht von DDR-Bürgern genutzt werden.

² Fernheizung, Zentral- und Etagenheizung sowie Wohnungen mit Ofenheizung für Strom, Gas und Öl (z.B. Nachspeicheröfen, Außenwandheizkörper).

Quelle: DIW-Fortschreibung der Ergebnisse der Wohnraum- und Gebäudezählung vom 1. Januar 1971 unter Berücksichtigung der Zugänge durch Neu-, Um- und Ausbau, der Ausstattungsverbesserung durch Modernisierungen (nach Kategorien) und der z.T. geschätzten jeweiligen Abgänge.

¹ Erfasst sind alle Wohnungen in Wohn- und Nichtwohngebäuden sowie Behelfsunterkünften, d.h. auch solche, die z.Z. anders als für Wohnzwecke oder nicht von DDR-Bürgern genutzt werden.

² Fernheizung, Zentral- und Etagenheizung sowie Wohnungen mit Ofenheizung für Strom, Gas und Öl (z.B. Nachtspeicheröfen, Außenwandheizer).

Quelle: DIW-Fortschreibung der Ergebnisse der Wohnraum- und Gebäudezählung vom 1. Januar 1971 unter Berücksichtigung der Zugänge durch Neu-, Um- und Ausbau, der Ausstattungsverbesserung durch Modernisierungen (nach Kategorien) und der z.T. geschätzten jeweiligen Abgänge.

[Key on following page]

Key:

1. District
2. Kreis
3. Residential population
4. Housing units
5. Equipment
6. Living space
7. Total
8. Per 1,000 residents
9. Running water
10. Inside toilet
11. Bath or shower
12. Hot water
13. Central heating
14. Per resident
15. Numbers
16. Percentage of total housing units
17. 1,000 square meters
18. Square meters
19. Continued

Footnotes: 1. Included are all apartments in residential and nonresidential buildings as well as temporary quarters, currently used for other than housing or not used by GDR citizens.-- 2. District heating, central and floor heating as well as apartments with their own heaters--electricity, gas or oil (for example night storage heaters, outside wall heaters).

Source: DIW extrapolation of the results of the living space and building census of 1 January 1971, taking into account increases by new construction, conversion and remodeling, improvements in equipment by modernization (by categories) and the respective losses (some estimated).

City-Surroundings Differences in the Equipment of Selected Peripheral Cities in the Industrial Conurbations and Southwestern Regions of the GDR 1981--Equipment Features as a Percentage of the Stock

(1) Stadt/kreis bzw. Landkreis		(2) Zentral- heizung	(3) Warm- wasser	(4) Bad/ Dusche	(5) Innen- toilette	(6) Wasser- leitung
(7) Ballungsgebiete	Görlitz (8) Stadt	18	41	42	47	88
	(9) Land	12	28	41	36	66
	Plauen (8) Stadt	23	40	58	56	100
	(9) Land	17	33	48	42	94
	Zwickau (8) Stadt	28	53	59	62	99
	(9) Land	8	26	26	22	86
(10) Südwestbezirke	Veimar (8) Stadt	27	48	62	81	100
	(9) Land	30	44	57	49	95
	Jena (8) Stadt	57	67	80	86	100
	(9) Land	20	30	54	46	100

Key:

- | | |
|-------------------------|----------------------------|
| 1. Urban or rural kreis | 6. Piped water |
| 2. Central heating | 7. Industrial conurbations |
| 3. Hot water | 8. City |
| 4. Bath/shower | 9. Rural area |
| 5. Inside toilet | 10. Southwestern districts |

Outlook for Future Housing Conditions

The Five-Year Plan target through 1985--new construction of 600,000 apartments and modernization (including conversion and remodeling) of 340,000 housing units³¹--allocates 54 percent of new construction and 56 percent of modernization to the industrial conurbations and southwestern districts. The proposed centers of concentration are Leipzig, Dresden, Halle and Karl-Marx-Stadt districts. In addition to large-scale housing complexes in major cities, smaller cities and communities are also being assigned priority promotion. Furthermore, the transformation of inner city residential districts is generally enjoying greater emphasis--coupled with the basic loosening up of building over. With respect to modernization--also concentrated in the districts mentioned--, the intention is the achievement of increased equipment with sanitary facilities, especially by way of the expansion of the water supply. In general we may assume that rehabilitation will be tackled with particular emphasis on regions where the building stock is older than the average.

The necessity to increasingly establish smaller sized new residential districts in cities or even just groups of residential buildings in smaller communities, presents a greater challenge to planning and, at the same time, calls for greater sophistication and expansion of prefabricated assortments. However, the manufacturers of building materials are also confronted with the problem of priority utilization and conservation of domestic raw materials and the growing use of secondary raw materials. While lowering specific energy consumption in their own production, they are increasingly to manufacture materials for reconstruction, such as multiple use components that may be manually assembled. Moreover, the attempt is being made to emphasize the production of thermal insulation wall components and to devote more attention to the production of more efficient heating and hot water installations.³²

In view of the many difficulties, it appeared advisable to base the forecast on the plan targets of the five-year plan. Though overfulfillments have already been recorded, showing how seriously the housing construction program is being pursued, it is almost impossible to guess whether they will continue. In view of its general economic problems, the GDR economic leaders will be able to maintain the priority of housing construction only if they are successful in achieving demonstrable growth successes despite the intended overall investment restrictions (exception: housing construction). It seems, therefore, that extra performance in this quinquennial may at best be expected with respect to modernization. At the end of 1985 just about 4 million housing units (57 percent) will be accounted for by the industrial conurbations and southwestern district in the total stock of 6.9 million. At an average housing density of 416 in the GDR as a whole, three industrial conurbations demonstrate definitely above average values--Karl-Marx Stadt (438), Leipzig (426) and Dresden (423). In the southwestern districts only Gera (415) comes close to the national average. The picture is completely different as regards living space per resident: Leipzig (26 square meters), Erfurt and Gera (25 square meters each) are above the average (24 square meters), all other districts just about manage to meet it.

By 1985 the equipment of apartments will display sensible improvements, but definite differences will persist in the regions. As regards central heating, Halle Bezirk exceeds the total GDR average, for hot water supply Leipzig Bezirk ranks first, and Gera leads with respect to baths/showers--Leipzig just managing to achieve the average. Still, all other districts of the regions investigated in this study will lag behind the average for the GDR in 1985 (in some instances considerably so). In the matter of piped water in the home, the districts of the industrial conurbations and southwestern districts usually show up better than the GDR as a whole; in Halle this equipment corresponds to the average, and in Dresden it remains somewhat below it.

Forecast of Living Conditions in the Industrial Conurbations and Southwestern Districts of the GDR at End 1985

(1) Bezirke	(2) Fertigzustellende Wohnungen 1981 – 1985 ¹			(3) Fortgeschriebener Wohnungsbestand am Jahresende 1985 ²								
	(8) insges- amt	(4) davon		(7) insges- amt	(10) Ew. je Ein- wohne- r	(6) Wohn- fläche je Ein- wohne- r	(5) nach Ausstattungsmerkmalen					
		(9) Neubau	(11) Moderni- sierung ²				(12) Zentral- heizung	(13) Bad	(14) Warm- wasser	(15) Innen- toilette	(16) Wasser- anschluß	
(17) in 1000 Wohnungen				(18) Anzahl	(19) m ²	(20) in v. H. des Bestandes						
(21)	Ballungsgebiete	392	238	154	2944	425	24	32	57	51	58	97
	Dresden	98	62	36	757	423	24	29	56	52	59	94
	Halle	96	61	35	749	412	24	42	61	49	61	96
	Karl-Marx-Stadt	110	66	44	841	438	24	27	52	50	51	99
	Leipzig	88	49	39	597	426	26	30	63	54	64	100
(22)	Südwestbezirke	129	86	43	1008	400	25	33	62	50	60	99
	Erfurt	62	43	19	484	392	25	33	62	51	60	98
	Gera	42	28	14	307	415	25	35	64	49	64	100
	Suhl	25	15	10	217	398	24	31	58	50	56	100
(23)	DDR, insgesamt	940	600	340	6918	416	24	36	63	53	65	96

1 Überwiegend Daten aus den Volkswirtschaftsplänen der Bezirke bzw. aus der jeweiligen Bezirkspresse. - 2 Einschließlich Um- und Ausbau. - 3 DIW-Fortschreibung unter Berücksichtigung der vorläufigen Ergebnisse der Wohnraum- und Gebäudezählung vom 31.12.1981, der Wohnungsbauleistungen 1981 und 1982, der jeweiligen Planansätze für 1983 bzw. 1981-1985 sowie der Schätzung der Wohnungsabgänge 1982-1985.
Quellen: Statistische Jahrbücher der DDR; Fünfjahrplan 1981-1985; Volkswirtschaftspläne sowie Berechnungen und Schätzungen des DIW anhand von Meldungen aus der Bezirkspresse.

[key on following page]

Key:

- | | |
|---|-----------------------------|
| 1. Districts | 11. Per 1,000 residents |
| 2. Housing units to be completed 1981-1985 ¹ | 12. Central heating |
| 3. Extrapolated housing stock at end 1985 ³ | 13. Bath/shower |
| 4. Including | 14. Hot water |
| 5. Apartments | 15. Inside toilet |
| 6. Living space per resident | 16. Piped water |
| 7. By equipment features | 17. 1,000 housing units |
| 8. Total | 18. Numbers |
| 9. New construction | 19. Square meters |
| 10. Modernization ² | 20. Percentage of the stock |
| | 21. Industrial conurbations |
| | 22. Southwestern districts |
| | 23. Total GDR |

Footnotes: 1. Largely data from district economic plans or the respective regional press.-- 2. Including conversion and remodeling.-- 3. DIW extrapolation taking into account the preliminary results of the living space and building census of 31 December 1981, the 1981 and 1982 housing construction results, the respective plan targets for 1983 or 1981-1985 as well as the estimated housing losses 1982-1985.

Sources: GDR Statistical Yearbooks; 1981-1985 Five-Year Plan; annual plans and DIW computations and estimates based on reports in the regional press.

Summing Up

Even though the quantitative supply in the GDR in the mid-1980's must be classified as good and the average standard of equipment as satisfactory, considerable regional variations will persist. However, the status of the renewal of old building stocks must be estimated more unsatisfactory. Precisely in the industrial conurbations and southwestern districts here studied, these old stocks--constructed before 1919--still amount to about half the entire building stock, in Karl-Marx-Stadt Bezirk even to 56 percent, in Dresden and Leipzig to 52 percent (national GDR average 46 percent). Renewal is therefore particularly urgent in these districts.

The problems described above show that no lasting rise in modernization output can be easily achieved wherever this presumes expanded supply systems, and that large-scale inner city rehabilitation in particular has turned into one of the thorniest problems confronting housing construction. At a time of substantially more costly materials, the wholesale demolition of dilapidated old buildings is risky, though the designated buildings are often badly damaged, and their spatial distribution is quite unsuitable for present-day living. On the other hand, the preservation of landmark protection areas and the mixed inner city areas originating from various eras require immense amounts of money and resources which the GDR is able only exceptionally to afford. There is thus the general danger that, in the interest of ambitious quantitative housing construction goals, much may be modernized and reconstructed in old stock areas of little art historical value, while little is done in areas of great value. This means that the cityscape will be improved by only relatively few interesting variants, and that the dullness of the new districts will extend to the city centers.

FOOTNOTES

1. See Manfred Melzer, assisted by Wolfgang Steinbeck, "Problems and Earlier Successes of the Housing Construction Program--Northern and Central Regions of the GDR," DEUTSCHLAND ARCHIV, No 1/1983, pp 76ff.
2. See Johannes Schattel, "Improvement in the Efficiency of Long-Range Site Conceptions for Comprehensive Housing Construction," ARCHITEKTUR DER DDR, No 11/1979, pp 644ff.
3. Cottbus Bezirk was erroneously omitted from the diagram of the northern and central regions. It has therefore been included in the diagram printed here. We ask you to excuse the mistake.
4. These ratios are unchanged by the housing construction yield after 1981. When we compare the planned and actual results for the GDR as a whole, the following picture emerges for 1981, 1982 and the first half 1983: The new construction (excluding conversion and remodeling) planned was for 293,000 housing units; 307,900 were actually provided. This corresponds to an overfulfillment of 5 percent and 2 percent respectively per annum. The conurbations and southwestern districts accounted for 53 percent of this performance.
5. Using various data from the regional press, reports of district statistics and estimates, the DIW ascertained the housing construction output (including conversion and remodeling) and volume of modernization in all kreises of the industrial conurbations and southwestern districts in 1971-1980. These data are the basis of the subsequently presented DIW extrapolation of stocks.
6. Comparing the plan and actual achievement since 1981, modernization (including conversion and remodeling) shows the following for the GDR as a whole: From early 1981 to end June 1983, 152,000 modernizations were planned, 160,500 completed--equivalent to an overfulfillment of 5.6 percent and 2.3 percent respectively per annum. The industrial conurbations and southwestern districts accounted for 55 percent.
7. A regional analysis by kreises showed even worse ratios. In 52 GDR kreises every fifth housing unit was either badly damaged or altogether uninhabitable.
8. Both cooperative and private apartments are in better condition than state owned housing units. Decisive here was probably the greater self-interest of the residents--especially in the case of privately owned one and two family homes.
9. See Manfred Melzer, "Housing Construction and Housing Supply in the Two German States--A Comparison," BEITRAEGE ZUR STRUKTURFORSCHUNG DES DIW, No 74/1983, pp 38ff.
10. This means the conversion of attics, additions of more floors, lateral additions, the conversion of stores or other building parts not used for residential purposes. Also included here is the combination of smaller units to make bigger apartments or the division of large ones.

11. Repairs also include the redecorations and repairs carried out in the course of the so-called "join-in competition" by after-working hour brigades. See Lothar Gerecke, "The Housing Construction Program, Citizens' Hard Work and a Summary of the Results," NEUES DEUTSCHLAND, 3 August 1983, p 3.
12. Modernization may cost an average 35 percent and no more than 70 percent of the costs of a comparable new unit, while the remaining period of use of the unit must be lengthened by at least 30 years. See SOZIALISTISCHE DEMOKRATIE, 28 January 1972, p 5.
13. Among the housing units modernized in 1971-1981, 57 percent were in category II, 17 percent in category I and 26 percent in category III.
14. See Karl Schmiechen, "Kreis Managed Construction More Resolutely Concentrated on Modernization and Preservation," PRESSE-INFORMATIONEN DER DDR, No 83/1983, p 2.-- See also Guenter Schuster, "Tight Roofs in the Interest of All Citizens," PRESSE-INFORMATIONEN DER DDR, No 82/1983, p 2.
15. See Karl Schmiechen, "Sound Preparation of Future Housing Construction Sites," PRESSE-INFORMATIONEN DER DDR, No 46/1983, pp 390ff.
16. Gerhard Kaspari, "On Some Problems Arising in the Planning and Preparation of Repair, Modernization and Reconstruction Measures for the Housing Stock," ARCHITEKTUR DER DDR, No 7/1983, pp 390f.
17. See Pravoslav Rezier, "On the Transformation of Cities," in "Complex Housing Construction--Architects' Tasks," GDR Construction Academy Publications on Construction Research, Series Residential and Social Structures, No 17, East Berlin 1973, pp 36f.
18. To cite an example: Hans Mucke and Ragnar Immerschied, "Studies on the Transformation of Small and Medium Cities by the Example of the City of Riesa," GDR Construction Academy Publications on Construction Research, Series Urban Construction and Architecture, No 18, East Berlin 1968.
19. See Wilfried Stallknecht, "Transformation of Inner City Residential Districts--Building Conceptions for the Slab Construction Method," published by GDR Construction Academy, series Construction Research, Construction Practice, No 46 East Berlin, 1980.
20. See Walter Gebhardt, "Cheap Construction in the Inner City," PRESSE-INFORMATIONEN DER DDR, No 55/1982, p 5.
21. See Klaus Hantke, "Five-Year Plan Construction Tasks in Karl-Marx-Stadt Bezirk," ARCHITEKTUR DER DDR, No 5/1983, pp 261ff.
22. In the district capital, three centers are involved (currently inhabited by 225,000 people. Planning for the Sonnenberg district is evidently farthest advanced--coupled with consideration for the harmonious and also interesting interplay between the old and the new. See Karl-Joachim Beuchel, "Urban Construction Pilot Plans for the Development of Karl-Mar-Stadt," ARCHITEKTUR DER DDR, No 5/1983, pp 265ff. See also Karl-Joachim Beuchel/Gottfried Fuchs, "Sonneberg Reconstruction District in Karl-Marx-Stadt," ARCHITEKTUR DER DDR, No 5/1983, pp 277ff.

23. See "Major Dresden Contribution to the Citizen's Initiative," SAECHSISCHE ZEITUNG, 29/30 January 1983, p 3.
24. This is the figure for housing units per 1,000 residents.
25. They are Erfurt (rural), Langensalza, Muehlhausen, Worbis and Eisenach in Erfurt Bezirk, Stadtroda, Lobenstein, Saalfeld and Jena (rural) in Gera Bezirk, Nebra, Sangerhausen, Naumburg and Graefenhainichen in Halle Bezirk. Also included are Hildburghausen in Suhl Bezirk, Riesa and Niesky in Dresden Bezirk.
26. They are followed by the Dresden and Goerlitz urban kreises with an average of 26 square meters living space per resident.
27. They were extrapolated, based on 1971 census results and taking into account new construction yields, completed modernizations (by category) and demolition.
28. They are mainly to be found in the Bischofswerda and Freital industrial conurbations in Dresden Bezirk, Hohenmoisen in Halle Bezirk, Auerbach, Reichenbach, Rochlitz, Werdau and Zwickau in Karl-Marx-Stadt Bezirk; the only one in the southwestern districts is Greiz in Gera Bezirk.
29. They are Bischofswerda and Loebau in Dresden Bezirk, Auerbach, Stollberg and Zwickau in Karl-Marx-Stadt Bezirk.
30. A GDR publication, for example, states: "The concentration of population, manufacture and infrastructure continues to advance, especially in large and medium cities. For that reason about 140 large and medium cities as well as selected small cities with important industrial projects are included at central level in long-range planning of the site distribution of productive forces; they account for more than two fifth (around 42 percent) of the GDR population. With some exceptions, these cities are intended to grow by an average of 10 percent through 1990. However, some considerable regional difference arise, relating mainly to the differentiated regional and local development of production and housing construction, population and social labor capacity." See collective of authors (headed by Gunnar Winkler): "Economic and Social Problems of the Further Definition of the Socialist Lifestyle," in "Issues of the Socialist Lifestyle," ABHANDLUNGEN DER AKADEMIE DER WISSENSCHAFTEN DER DDR, No W5/1977, pp 9ff, here p 36.
31. See "Law on the Five-Year Plan for the Development of the GDR Economy 1981-1985," GB1 DER DDR, Part I/1981, pp 405ff.
32. Full 35 percent of total energy consumption currently goes to heat residential, social, industrial and agricultural buildings. Conservation is imperative. About two thirds of the planned conservation of thermal energy is to result from thermotechnical improvements of the building shells (for example by reducing window size, erecting more compact buildings, improving insulation). See Guenter Koebel, "Energy Conservationist Construction Begins with Planning," PRESSE-INFORMATIONEN DER DDR, No 71/1983, p 4.

DEVELOPMENT OF ELECTRIC POWER SYSTEM DESCRIBED

Budapest VILLAMOSSAG in Hungarian No 12, Dec 83 pp 353-358

[Article by Janos Schiller, (graduate) electrical engineer, director general of MVMT [Hungarian Electrical Works Trust] and cochairman of the MEE [Hungarian Electrotechnical Association]: "Development of the Electrical Energy System's Growth Strategy, with Particular Attention to the Role of the Paks Nuclear Power Plant"; based on the presentation delivered at the MEE's traveling meeting held in Sopron on 11-12 August 1983]

[Text] I. Most Important Basic Principles of the Strategy for Developing the Electrical Energy System

The government will probably approve in 1984 the power plant construction program which will run until the year 2000, therefore this article is able to report on the strategy taken into consideration in the preparatory work. The most important basic principles of this strategy are as follows:

--The growth rate of electrical energy demand and meeting this demand must be planned in harmony with the development of the economy as a whole.

--Much more so now than ever before, we must start out from the country's total energy resource supply as the main system, and the development of the industrial branch of electrical energy can be planned as a subsystem of that. The electrical energy branch consumes a steadily increasing portion of the basic energy sources--taking also imports into consideration--for conversion for the purposes of supplying electrical energy and heat. Our share for this from the total energy source balance was 23.94 percent in 1970, 25.28 in 1975, 26.85 in 1980; it is expected to be 31 percent in 1985, 33.5 in 1990, and 40 percent in the year 2000. It can be seen from the numbers that the power plant construction program fundamentally influences the development of the total energy source balance and its internal structure.

Therefore cost optimization must not end with the electrical industry but must encompass also the total energy source balance.

--Cost optimization in only one element of the preparation. Minimizing the investment cost of the total energy development is also a very significant factor. The significance of this is in the fact that energy management as a

whole is tying up increasing amounts of the means from what is available to the national economy to spend on industry, as illustrated by the following numbers: in the Fourth Five-Year plan, total energy management consumed 28.4 percent of the industrial investments; 32.2 percent during the Fifth Five-Year Plan, and 44 percent is projected for the Sixth Five-Year Plan.

It is often asked in top economic circles whether energy management is worth developing under such circumstances since there will not be enough financial resources left to develop the industry which uses energy. The answer for this can be that naturally the energy management must not be overdeveloped but if the development of energy management at the same time also involves a change of structure--and this indeed is involved--then its economic efficiency surpasses the efficiency of developing a whole line of industrial branches. The year 1982 is a good example for this, when energy management produced about two-thirds of the improving activity of the total industry's capitalist payment balance.

--In preparing the decision, attention must be paid to how flexible the whole system will be. Within this we must examine the flexibility of power plant development from the investment viewpoint; the flexibility of the domestic electrical energy system which will be created from the operational point of view, and how compatible the Hungarian electrical energy system will be with unified electrical energy systems of the socialist countries.

--Our goal in development is that the imported share of the total energy source balance should not increase, on the contrary it should decrease. In this respect we consider nuclear energy to be a domestic resource because of our domestic uranium production, even though this view contains some bragging because enrichment of the domestic natural uranium is done in the Soviet Union.

We have to mention among our difficulties that the imported portion of energy sources reached its peak in 1980 at 54.86 percent of the country's total energy consumption. This value is expected to decrease to 48.7 percent in 1985 and 46.2 in the year 2000.

It may be included among the guidelines that we are planning no electrical energy import increases to the year 2000 beyond the already negotiated electrical energy import: there is an agreement now in effect for a daily peak load of 1,450 MW and we will receive 400 MW in addition to this for our participation in the construction of the Hmelnick Nuclear Power Plant. However, this must not exclude short term deals and economical trades. This previous decision is based on detailed technical and economic studies, dealing with which would exceed the framework of this article.

II. Expected Development of Electrical and Thermal Energy Needs

Development of the national economy's electrical energy demand will determine to a decisive extent the development conditions of the electrical energy system.

The average annual growth of the gross domestic product (GDP) was 5.1 percent between 1960 and 1980. During this same period of time the electrical energy

demand increased in harmony with the aforementioned on the annual average by 6.95 percent. Starting out from the condition of establishing the national economic equilibrium, between 1980 and the year 2000 an economic growth of about 1.5 percent per year is predicted, and in accordance with this--taking also a series of other circumstances into consideration--the growth rate of demand for electrical energy can be estimated at about 3 percent. Correspondingly the electrical energy demand is expected to develop as follows:

	1980	1985	1990	1995	2000
Cooperative electrical energy demand (Wh)	31.08	36.3	42.4	49.3	57.0
Average annual growth rate of the demand (percent)	3.15	3.16	3.06	2.95	

The number of hours of use is influenced by the fact that the fastest growth is predicted for the smaller than average peak user consumer demands (households), but this can be compensated by encouraging increased night time electrical energy consumption. Studies conducted indicate the probability of about the same number of hours of use as the present even over the long range as a result of the outlined effects. With this, peak demand will shape up in the coming years as follows:

	1980	1985	1990	1995	2000
Peak output demand, MW	5107	6050	7080	8220	9500
Average annual increase, percent	3.2	3.2	3.0	2.9	

The new power plant capacity requirement can be calculated from the performance capability demand data, the performance of the existing power plants, the rate of these being retired from service, and the way import performance develops. Of course, we are adding to the capacities of the existing power plants the four blocks of the Paks Nuclear Power Plant under construction, each with 440 MW, and the import performance mentioned above with its 1850 MW.

Removal of power plants from service and their conversion to supply heat have an effect of decreasing capacity; since mostly coal fired power plants are involved, this can be planned at only a very low level. Until 1990 the program expects no retirements to speak of, capacity lost to obsolescence amounts to only 51 MW, and 117 MW between 1990 and 2000.

Taking all this into consideration, by the year 2000 decisions will have to be made about creating approximately 3000 MW of new power plant capacity and about selecting its optimum composition.

Beyond supplying electrical energy the MVMT has also accepted and is accepting a significant role in the future also in fulfilling the thermal needs of the national economy. The MVMT handles heat supply partly in connection with producing electrical energy economically, and partly by direct production of steam and hot water in boilers. The same tendency prevails in the development

of thermal needs as in electrical energy needs. Based on the slower growth of recent years and also counting on the effect of the energy management measures, between 1990 and 2000 we are expecting an annual growth rate of about 2.4 percent according to the following:

	1980	1985	1990	1995	2000
Thermal needs, PJ [PitaJoules = 10^{15} Jourles]	54.8	61.5	68.5	72.2	75.0

III. Analysis of the Time Period Until the New Power Plant Capacity Starts Up

With respect to the time scale it is practical to break down the long range power plant construction program to two parts: the first stage runs to the start-up time of the new power plant capacity, the second from then until 2000 or 2005.

Figure 1 shows the development of the performance balance conditions. The lower line in the figure shows the electrical performance needs, and the upper line the sum of the available domestic performance capabilities and the import. The area between the two lines is the operational reliability reserve. Within this we have shown separately the line of necessary operational reliability reserve. In accordance with this the diagonally crosshatched area on the figure represents sections with greater than the necessary reserve performance, while the doubly crosshatched area shows the lack of reserves.

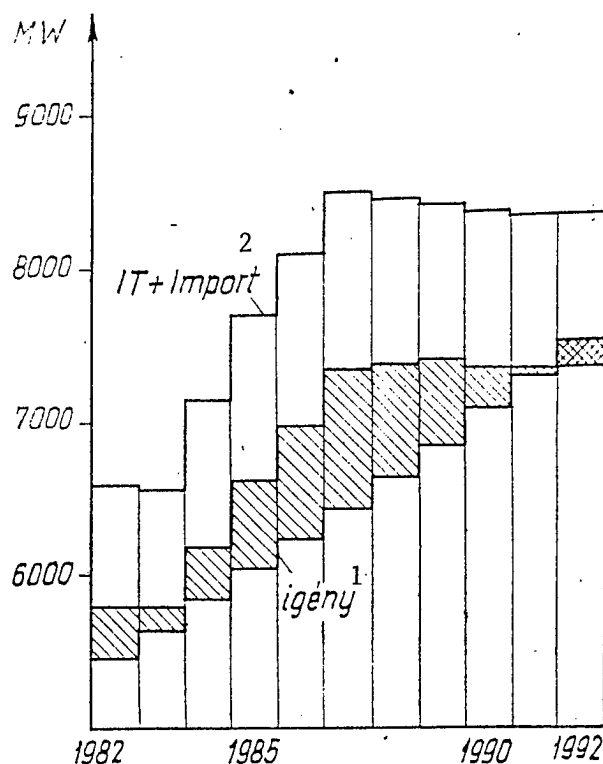


Figure 1. End-of-year performance balance of the electrical energy system

Key: 1. demand 2. available capacity plus import

It can be clearly concluded that after the Paks Nuclear Power Plant begins operation the electrical energy system for a long time will not need to start up new capacities. The reserve surplus will run out by 1992, and even this year the necessary operating reliability surplus is not available. It can thus be concluded that with the planned increase in demand new power plant capacity will need to go on line in 1992. It would be expeditious to use the time period with surplus capacity to conduct the reconstruction program and when it seems economical, convert hydrocarbon-fired blocks to coal firing.

After this it would be practical to examine how the energy management situation's picture will shape up in the next 10 year time period. We have to start out from the MVMT's consumption of primary energy sources.

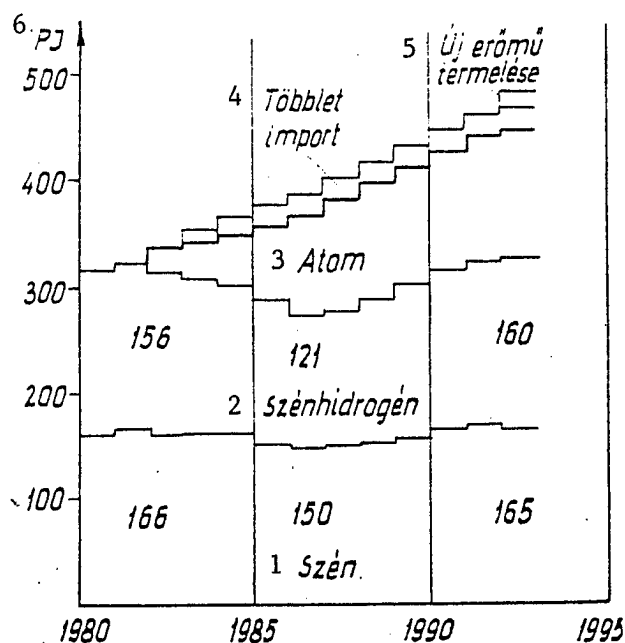


Figure 2. Expected development of the MVMT's fuel consumption

K Key: 1. coal 2. hydrocarbon 3. nuclear 4. extra import

5. production by new power plant 6. pitaJoules (10^{15} Joules)

Figure 2 shows a review of the MVMT's energy management situation. Since until 1992 we are counting only on the existing power plant capacity other than the first stage of the Paks Nuclear Power Plant and the 400 MW Soviet import, the MVMT's energy consumption can be evaluated well within relatively small tolerance. The lower line of the figure shows coal consumption, which will more or

less remain constant during the Sixth 5-Year Plan. A certain amount of decrease will appear in the Seventh 5-Year Plan due to the reconstructions of the Gagarin, the Oroszlany, and the Pecs Thermal Power Plants. After the completion of these, coal consumption again shows an increasing tendency.

Hydrocarbon consumption appears on the figure above the coal consumption segment. It can be clearly concluded that when the increase in the nuclear power plant's run-up is greater than the VER's [electrical energy system] demand increase, the electrical energy system's hydrocarbon consumption decreases. This tendency will last until the second half of the Seventh 5-Year Plan, that is, until the nuclear power plant becomes operational. From then on the hydrocarbon segments are again increasing because the demand is increasing on the hydrocarbon power plants, as there is no new capacity. By 1992 the hydrocarbon demand will reach a value around 160 PJ.

I must observe that naturally it is not immaterial either, what the structure of our hydrocarbon consumption is. It can be considered a significant achievement that while in 1978 within the total hydrocarbon consumption the ratio of liquid fuel was 51.8 percent with 2,134 kt [kilotons], by 1982 this value decreased to 23.6 percent and 911 kt, and by 1985 it is expected to further decrease to 15.9 percent and 503 kt.

It can be seen from the foregoing that we must do everything in the interest of preventing the increase of hydrocarbon demand between 1978-1992. Actually it would be practical to conduct a power plant construction policy like the one followed by significantly richer energy systems than ours, that is, parallel with the construction of the Paks Nuclear Power Plant implement power plant construction on the coal or fissionable material basis which would gradually enable us to shut down permanently the condensation blocks built on the basis of hydrocarbons. Unfortunately the investment and financial conditions for this can not be secured.

The interested industrial branch organs have already conducted several studies and concluded that partial solution of the outlined problem is possible by converting a significant portion of the existing thermal service based on hydrocarbons to the coal basis and by new coal-based heat supplying facilities.

Figure 3 shows the fuel demand of MVMT's heat service in the time period between 1970 and 1990. The lower part of the block diagram shows coal consumption, the upper part hydrocarbon consumption by heat service. The percentage values above the columns show the proportion of heat service within MVMT's total fossil heat demand. It can be seen from this that in 1990 the demand will amount to about 30 percent of MVMT's fossil fuel requirement. It can be concluded from the figure that coal consumption will increase only slightly between 1980 and 1990 but hydrocarbon demand will increase from 41 PJ to 52 PJ. Within this, the heat requirement of consumers in Budapest and in the region served by the Danubian Thermal Power Plant will reach the heat quantity of 38 PJ in 1990.

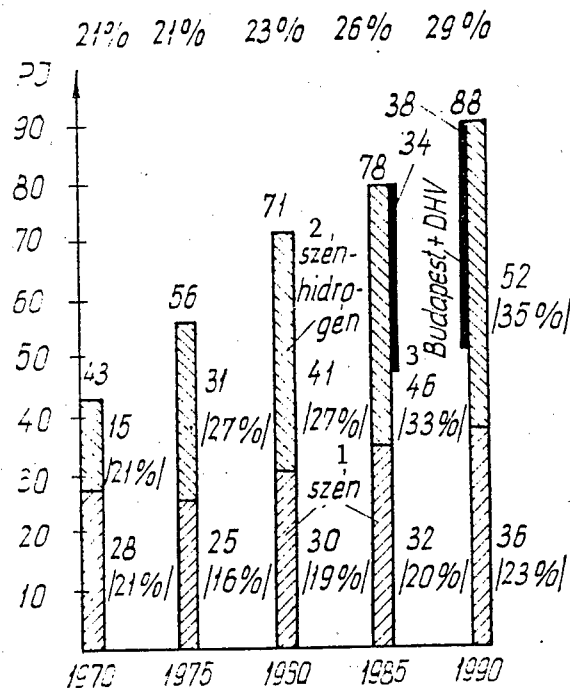


Figure 3. Fuel requirements of MVMT's thermal service.

Key: 1. coal 2. hydrocarbon 3. Budapest plus the Danubian Thermal Power Plant Enterprise

It is expeditious to execute the energy source switch where the concentration of thermal demand is greatest. Therefore the long range program deals primarily with the questions of Budapest and Gyor. A simplified investment study is being made with two alternatives to supply the basic load of South Budapest's communal thermal demand from the Danubian Thermal Power Plant: one by converting the 150 MW blocks to coal firing, and the other by building two new 200 MW blocks with coal firing. Also under study are a coal-fired heating plant in northern Pest and as an alternative to this, construction of a nuclear heating plant and the study of a coal-based heating power plant for Gyor.

The heat supply facilities simultaneously serve several national economic goals: they provide electrical energy for the VER, favorably influence the development of the energy source utilization structure, and satisfy new demands for heat. The financing resources and accompanying investment demands must be separated by analyzing these effects to the resource demand which belongs to the state-operated power plant construction program, the energy rationalization demand, and the development funds to be secured from the new consumers.

After the specific development goal-oriented studies related to thermal service are prepared, the solution to be built into the program of power plant construction alternatives will be determined by optimization studies.

IV. Analysis of the Time Period After 1990

The power plant construction program is considering the realistically feasible new capacity elements listed below, as variants:

- Gabchikovo Nagymaros Hydroelectric Plant, 440 MW;
- expansion of the Oroszlany Thermal Power Plant, 1 x 250 MW;
- expansion of the Oroszlany Thermal Power Plant, 2 x 250 MW;
- Bicske Thermal Power Plant, 2 x 250 MW;
- Bicske Thermal Power Plant, 4 x 250 MW;
- Gagarin Thermal Power Plant expansion, 2 x 250 MW;
- Gagarin Thermal Power Plant expansion, 4 x 250 MW;
- Bukk Thermal Power Plant, 4 x 250 MW;
- expanding the Paks Nuclear Power Plant, 2 x 1000 MW;
- Predikaloszek SZET [expansion unknown], 4 x 300 MW.

During the course of conducting the studies, in connection with some of the elements we must consider certain limitations:

--the Gabrichkovo-Nagymaros hydroelectric power plant can now be considered a fixed component of the power plant construction program, specifically, with the first generator of the Gabrichkovo power plant going on stream in 1990, and the first one of the Nagymaros power plant in 1993;

--the first 1000 MW block of the expansion of the Paks Nuclear Power Plant will, according to preliminary studies, require about 12 years to implement. Therefore we can not expect the first 1000 MW block to start up before 1996;

--development of the country's brown coal balance will significantly influence the ultimate size of the new brown coal power plant. The population's demand and in general the demand for quality brown coal as well as the coal consumption of the MVM's existing power plants are fixed elements in this. It must be determined on the basis of these demands how much energy management brown coal will be available for the long range power plant construction program. This must first be used to satisfy the thermal supply needs and a new brown coal power plant can be built only on the surplus remaining over this. That is, preliminary calculations have shown that a power plant built on a new deep-mining brown coal mine which would use the produced coal without enrichment, is uneconomical in comparison with the lignite power plant;

--construction of the Predikaloszek SZET will be economical only after 1995, thus it can be considered realistically in the optimization studies only after that time.

As can be seen from the foregoing we are counting in terms of 250 MW block size uniformly for coal fired power plants and 1000 MW with respect to nuclear power plants in the alternatives studied. In the case of a power plant based on good quality brown coal, after 1992 it would perhaps be justifiable to think in terms of larger performance units. However as we have already mentioned above, the total power plant capacity that can be based on the ecocn base which can be potentially considered is rather small. The country's lignite inventory constitutes the basic fuel for the larger coal-based condensation power plant

construction program; about 12,000 MW new power plant capacity can be built on this. But in the case of lignite power plants the fuel's quality limits the block size which can be built. This conclusion refers especially to the Hungarian lignites with their high ash and silica contents. We do not now consider it practical and feasible to increase the block size of lignite power plants over 250 MW. Taking into consideration what was said above, this performance level also defines the size of brown coal blocks.

With respect to the block size for nuclear power plants the socialist countries are generally changing over to using 1000 MW block size in power plants to be started up after 1990. This represents significant benefits, mainly with respect to investment blocks. Besides this the technological characteristics and technical construction of the blocks are also significantly more modern than those of the type VVR 440. The increased reserve capacity (UBT) at the system level due to the relatively large block size disadvantageously affects this alternative. In practical terms this means that the 1000 MW block has to be placed into operation earlier than the starting time calculated with normal reserves.

Based on preliminary studies it can be concluded that the specific overhead costs of the new brown coal, lignite, and nuclear power plants calculated at unchanged 1982 prices vary around the value of 150 fillers/kWh within a deviation of 2 to 3 fillers. Specific fuel cost has a greater role in the overhead cost of coal fired power plants, while at the same time the investment portion and the fixed cost part dominate the overhead cost of nuclear power plants. Thus the overhead cost does not provide sufficient basis for deciding on the facility. Among the other factors which prepare the decision, attention must be given to the strategic viewpoints detailed in the introduction.

In our opinion preference is given to that power plant construction strategy in which a role is given to implementing a part of the thermal service based on coal. From the investment cost viewpoint the alternatives with nuclear power plants appear to be at a disadvantage, since due to the larger operating reliability reserve demand already mentioned above, we must consider earlier scheduling of the costs. The net investment cost of a nuclear power plant is on about the same level with the combined investment costs of the coal fired power plant and the lignite mine. Development of the situation of alternatives with nuclear power plants is improved when they are built with storage power plants with pumping stations. The combined specific investment cost shows a favorable picture and this solution can also be called optimal from the operational viewpoint.

The optimization studies at system level are in progress. It is expected that a decision will be made at the government's level in 1984 about defining a power plant construction program in harmony with the growth of the national economy and also supporting the country's energy management balance.

V. Operational Questions Related to the Start-Up of the Paks Nuclear Power Plant.

Satisfying the increased energy demands of the Sixth and Seventh 5-Year Plans and partial replacement of the hydrocarbon consumption is based on the 1760 MW

development of the Paks Nuclear Power Plant, in addition to the 400 MW import increment. Initial parallel connection of block I took place on 28 December 1982, and it concluded its 72-hour test run on 11 August at 3 PM. An important experience learned from the time period prior to the initial parallel connection is that the jobs of starting it up were significantly bigger than expected. The total volume of this work, including also the "0" revisions and the maintenance required during the time period of the run-up totaled about 4 million manhours, and realizing it would have been unimaginable without cooperation from the industrial branch. A few data which can qualitatively illustrate partly the size of the task, and partly the complicated nature of the nuclear power plant:

There are over 4,000 measuring circuits, as compared to about 600 in a 215 MW hydrocarbon fired block. There are 250 regulatory loops, compared with 60 in the above mentioned traditional block. There are over 1,700 electrically operated armatures compared to roughly 200 in the traditional block mentioned. We will by all means take into consideration the lessons learned during the start-up work for block 2, naturally, but even more so when organizing the work for blocks 3 and 4.

The block completed producing the first one billion kWh on 29 July 1983. Even though it is still too early to draw far-reaching conclusions from the experience, the events thus far make us say that after the childhood illnesses are overcome we will very soon be able to count on the Paks Nuclear Power Plant as a reliable energy source. In no way do these childhood illnesses affect the nuclear operating safety of the power plant, in connection with which the experience so far is impeccable. Among the initial difficulties the biggest problem is caused by problems appearing in control technology. Based on this experience, Hungarian teletransmitters will be installed on blocks 3 and 4, from which we expect better results and negotiations are also in progress for implementing the computerized Hungarian configuration of the control technology.

Systematic load control of the Paks blocks can actually be controlled technologically within certain limits. During the planned lifetime of 30 years 20,000 load changes are permissible, which actually makes one 10 percent load increase and decrease per day possible. When greater than 10 percent cutbacks are needed this is also possible in such a way that each 10 percent step counts as one load change up to the lower limit of 50 percent. However, for economic reasons we would prefer not to take advantage of this technical possibility if at all possible, since at the 1983 price levels the specific fuel cost of every kWh produced in the Paks Nuclear Power Plant is a mere one-fifth of the specific fuel cost of electrical energy produced in the least costly Gagarin Thermal Power Plant. The experience of this year's summer is that with the exception of the Monday morning increase we were able to ensure straight line production in the Paks block, steady utilization of the coal-based power plants and were able to follow the national load curve with the hydrocarbon-based condensation power plants, without daily interruption in the operation of these blocks.

From the energy management viewpoint operation of the block resulted in a decrease in our natural gas consumption, which the gas industry was able to balance by underground storage.

Examining the workday loads of wintertime, the coal based power plants will have to be cut back in 1986, 1987, 1988 during nighttime lows by about 300 MW, assuming that the 215 MW hydrocarbon based blocks will be kept in operation at their minimum load of 500 MW. The cutback is expected to cause approximately 1000-1500 MWh production decrease in coal fired power plants per day. The largest cutback will take place in 1987 when we will have to deal with either either an approximately 100 MW cutback in the Paks Nuclear Power Plant each day, or the daily shutdown of two, 215 MW hydrocarbon fired blocks. At the end of the Seventh 5-Year Plan time period--this can also be followed on Figure 2--utilization of the hydrocarbon fired power plants will again increase and together with this the problems of nighttime cutbacks on winter workdays will also end. As we have no storing power plants with pumping stations, the Monday load increase will cause the biggest possible problems: we must expect weekend staged shutdowns of the hydrocarbon power plants, significant load reversals and at times staged shutdowns of the coal fired power plants, and load reversals for the nuclear power plant. And unfortunately every shutdown and restart carries within itself the danger of operating problems in spite of having already for the most part created the technical conditions for interrupted operation. Even so far we have concentrated very significant experimental, research, technological-development and investment resources on the peak-time operation of hydrocarbon fueled power plants.

8584

CSO: 2500/174

COMPETITION FOR JOINING 'ENTERPRISE 'PRICE' CLUB' ANNOUNCED

Budapest FIGYELO in Hungarian No 1, 5 Jan 84 p 1

[For more on this see JPRS 84912 dated 9 Dec 83 pp 61-67 in this series.]

[Text] In the 1983 issue no. 44 of FIGYELO we published an interview with undersecretary of state, Dr Bela Csikos-Nagy, president of the National Board for Materials and Prices, under the title of "Enterprise 'Price' Club." There, among other subjects, it was stated that within the defined scope of enterprises, there would be possibilities in 1984 for more flexible price, and respectively allocation regulations. As the undersecretary mentioned, enterprises could join this "club" through a competition process.

At the end of last year, the National Board for Materials and Prices together with the State Office for Wages and Labor published an information brochure containing the competition announcements for pricing in manufacture and the regulation of incomes in enterprises. According to this, the enterprises can compete

- either in the regulation of prices,
- in the regulation of incomes or
- in both areas

for the application of new methods to be implemented.

As the announcement for the competition mentions, in harmony with the development of the management of the national economy, the pricing system must function according to the requirements of competing prices on the market, wherein the internal market conditions and the international markets exert a strong influence on prices--their levels and the ratios between them. In such a pricing system, the domestic prices of certain products can develop in accordance with the conditions of the domestic market between the export and the import prices; and the pricing of products with different purposes as well as different market values is not forced to stay within arbitrary limits.

They will begin to change over to this type of pricing system in the manufacturing industry in 1984. The number of enterprises belonging to this category can be increased depending on developments in economic conditions and the strengthening of the economic equilibrium. This type of pricing can be introduced for those enterprises for whom balanced demand-supply conditions have already developed and which take part in the domestic and foreign market competition to a sufficient extent. It cannot be used with those enterprises, which primarily manufacture products that are in short supply domestically.

One of the conditions for participation in the competition by enterprises is the balanced domestic market conditions for the products manufactured by them, another is that the enterprise satisfy its export responsibilities. The enterprise must guarantee that it will not exceed potential import prices, that is those prices which would be charged for the products domestically if they were regularly acquired from imports paid for in convertible currency.

The purpose of the application of the new type of income regulation system, which will begin in 1984, is that in the interest of increasing productivity, the enterprises using it would be guaranteed a greater degree of freedom in determining wages, creating the possibilities for greater economic rewards in proportion to greater productivity. Besides this, the purpose of the development and the introduction of this new type of income regulation is the preparation of the further development of the enterprise wage and income regulatory system.

In the new type of income regulation, besides the increase of taxation connected with the complete consumption of wages, the tax burdens of income growth will be moderated. Because of the latter, more and more attention must be paid to keeping the increase in incomes really proportional to increases in productivity. In order to assure that this happens, only those economic organizations can apply this new type of income regulatory system, which cannot pass on the increase in income expenses to the consumers, respectively those which cannot raise prices unjustifiably for the purpose of increasing their profits.

The conditions of competition for the regulation of incomes basically are the same as the conditions presented above. Furthermore, enterprises for which the passing on of expenses is officially limited by the maximization or the fixing of the prices of their major product groups can also request the application of the new type of income regulation.

In both cases, the applications will be judged by a committee created for the purpose, which will consist of representatives of the branch ministry, the ABMH [State Office for Wages and Labor], OAH [National Board for Materials and Prices], OT [The National Planning Office, PM [Ministry of Finance], as well as the KKM [Ministry of Foreign Trade].

12489

CSO: 2500/171

PROCEDURE FOR SELECTING MANAGEMENT PERSONNEL DESCRIBED

Budapest OTLET in Hungarian 5 Jan 84 p 10

[Article by Istvan Bodzaban: "'The Selection Committee Consists of Several Experts and Decides by Vote.' Appointees and Self-Appointees"]

[Text] A 1982 decree issued by the Council of Ministers has made it possible for managers to be selected on the basis of a competitive system. Let us immediately add: the announcement of competitions is not mandatory. Within its sphere of authority the Ministry of Industry may use its own discretion to decide whether to announce vacancies for the positions of director general and director or--bypassing that procedure--to leave it up to the minister to decide who the managers will be.

This year there have been 30 cases in our ministry-affiliated enterprises where the seat of the number one man became vacant. Most of the former managers have retired, some have passed away, and some others have been relieved because of inaptitude. These latter have either retired at their own request or have been reassigned...

Competent authorities at the ministry have decided that the functions of director general and director should be filled by competition. In the remaining 19 cases they did not think this was necessary, apparently because they were satisfied with the qualifications of the appointees. Experts at the ministry are of the opinion that "making people compete" only makes sense if there is no single appointee who they could confidently say would be able to handle the tasks facing him.

The competitions are announced in the IPARI KOZLONY and in our daily papers and economic journals. The announcements also give a detailed list of the conditions. The ministry has come up with a proposal for evaluating the submitted applications. According to this proposal the time between the publication of the announcement and the rendering of the decision should not exceed 6 months. The ministry, of course, abides by this restriction.

One would think that it would be strange for the ministry not to observe the terms of its own proposal. These guiding principles, however, go beyond setting guidelines and discussing procedures for the selection of the number one managers of our enterprises. As it is well known, since 1 January 1983 our director generals have also been allowed within their own sphere of authority to decide at their own discretion whether to appoint their deputies or to select them by way of competition. The ministry has prepared additional recommendations for improving the internal competition structure of our economic units. (Here a period of 10 to 13 weeks is considered to be the optimal processing time.)

There is a good reason why the recommended limitations on the length of administration are important. Since the aim of the competitive system is to make the selection of our managers more democratic than before, it does not tolerate lengthy and overly bureaucratic decision-making procedures. Whether the processing time recommended as desirable in the guiding principles can be even further reduced is uncertain for we must also keep in mind that the selection committee needs time to get to know the candidates thoroughly.

And this brings us to our point. As soon as the candidates have submitted their applications, the committee convenes and makes its selection. First it notifies those who for some reason fail to meet the requirements right from the outset. A person may be disqualified if the director's position described in the announcement has a prerequisite of at least 5 years of management experience and the applicant has never served in the capacity of manager. One would assume that such people would not even consider applying, however, this is not the case.

At the ministry I was told that there are some notorious applicants. There are those who submit an application for every announcement. At one time they visited the workplace of one such candidate where it turned out that the person in question was so afraid of responsibility that he was not even willing to accept the position of subdepartment head. Of course, it could also be that he was saving his energy for greater tasks...

If a candidate meets the main requirements--and almost all of them do--then he is notified that his application has been accepted and is informed when to appear for a personal interview. In the meantime they can familiarize themselves with the work of the enterprise.

At the ministry they admit: this is a critical period. For no matter how democratic the competition is it is a fact of life that even if they are brilliantly talented, those who apply from the outside start at a disadvantage compared to someone who has worked at the given enterprise for years. For during the interview the selection committee expects the candidates to pre-

sent a basically complete and specific program. (Also very important, of course, is how well informed and knowledgeable the person is overall in the area of economics and politics.)

On the basis of the personal interview and the information gathered prior to it the selection committee determines each person's suitability by vote. After this has been done it selects and ranks according to preference those two or three people whom it considers qualified to head the enterprise. The final decision, of course, is made by the minister, but so far the certificate of appointment has always been awarded to the number one applicant. This should not come as a surprise, for the minister has faith in the work of the selection committee which is always made up of recognized experts. One could, of course, also assume that the "chances" of some applicants receive additional pushes from higher places. Well, this assumption is not unfounded. At the ministry I was told about more than one instances where an applicant was--to put it diplomatically--brought to the attention of certain members of the selection committee by somebody (or somebodies). Such roundabout attempts, however, cannot succeed, given the fact that the selection committee is made up of several experts and decides by vote, thus making it impossible for any one person to grant such requests. And let us not forget that the applications are also not submitted to the committee by a single person...

Situation Report on the Status of Competitions Announced in 1983
by the Ministry of Industry

Factory	Number of Candidates	Was the Winner of the Competition an Enterprise Employee?
Hungarian Viscosa Factory	12	No
Electric Insulator and Synthetics Factory	22	Yes
National Mining Equipment Manufacturing Enterprise	8	Yes
April 4 Machine Industry Works	6	Yes
Lang Machine Factory	15	Yes

Note: As of the middle of December 1983 only 5 of the 11 director general and director posts opened for competition by the ministry have been filled. The remaining six are still under evaluation. Next year the ministry is planning to replace the directors of 10 enterprises, nine of them by competition.

We can also look at this as an assurance that our democratically determined rules are being observed.

The above shows that the committee always makes the correct decision. Whether that decision is also the right one every time, no one would dare to say. For it is practice that ultimately decides whether the jury has made the right or the wrong selection. There are, of course, ways of controlling this afterwards. Along with the certificate of appointment the minister also hands over a specific plan of action to the director generals and directors. This description contains nothing special; it is merely a summary of our national economic expectations. It calls for efficient work and profitable production. And since the appointment is for a specified length of time--generally for 3 or 5 years--once it expires it can and must be reviewed to determine whether or not the selected candidate has lived up to the expectations.

9379

CSO: 2500/183

ACTIVITIES OF FOREIGN TRADE ENTERPRISES DISCUSSED

Export by Metronex

Warsaw ZYCIE WARSZAWY in Polish 22 Nov 83 pp 1,6

[Text] All indications are that Metronex will increase its exports this year to the capitalist countries by 8 percent, which is double that planned.

There will be an equal increase to the socialist countries. Results achieved in automated branches and the computer industry are significant.

With respect to the socialist countries, there will be an increase in exports of 14 percent as compared with last year, but when compared to 1980 the increase is 50 percent. The greatest share in exports to the socialist countries is in high technology and especially printers made in Blonie as well as computer systems made in the Mera-Ster Works in Katowice and in the Janek Krasicki Works in Warsaw in cooperation with our Soviet partners. These goods have been well received, although there is a need for modernization of production methodology to retain our position in foreign trade.

There were also good results with the capitalist countries, although Metronex, like other foreign trade enterprises, has felt the negative results of restrictions and protectionism. A struggle exists as a result of the lack of new technology in exported goods, which makes it difficult to retain markets and clients.

It is necessary to exploit different opportunities to make sales offers attractive. As of late, this has called for a new form or organization. Metronex has become one of the first central organizations to change the character of its cooperation with producers. In December 1982 it became a partnership. Thinking about the further increase of exports, which is dependent on the contemporary nature of the offered equipment, the partnership has presented its partners from industry with an evaluation of the quality of its products and of its competition. This requires the development of a long-standing program to develop exports that would be adapted to ever-changing market demands.

A large role here is played by the sales network, which should be fitted with the capacity to adapt to changes in competition and market requirements. For example, in the capitalist countries, active exporting is accomplished by the firm's own sales network or through foreign distributors. At present, Metronex has over 70 percent of its products exported to the capitalist countries through its own network.

The next proposal for next year to be worked out by the partnership calls for an increase of 4 percent in exports to those countries and maintenance of the level of hard currency transactions for enterprises cooperating with Metronex. Although the majority of sold goods will be traditional, there will not be a shortage of new products. An example may be the D-100 mosaic printer produced in Blonie near Warsaw. The producer has won a gold medal and positive reviews at international trade fairs. The employees at the producing enterprises take part in marketing these products abroad, participating at international trade fairs and meeting clients and getting to know competing prices. This is especially valuable with respect to fluctuating prices in the country.

According to director Andrzej Ziaja, the results achieved by Metronex confirm the utility of adopted economic-organizational solutions, guaranteeing the authentic influence of producers to shape a trade deal, and at the same time the influence of trade in the direction of production development. This permits, despite unprofitable external conditions, the reducing of restrictions and the increasing of exports to obtain foreign exchange currency to allow for the import of necessary products tied to the modernization of machinery and finished goods.

Comments of Torimex Director

Warsaw SLOWO POWSZECHNE in Polish 28 Nov 83 p 5

[Interview with Antoni Urbanowski, director of the Foreign Trade Enterprise Torimex, by Marek Matusiak; date and place not specified]

[Text] [Question] If I remember correctly, the principal reason for creating Torimex -- the foreign trade central agency which not long ago was under the Ministry of Domestic Trade -- was that Torimex would deal with the goods surplus. But with the market so low, one could say that there is no surplus. Does not this fact shake the principle for the existence of Torimex?

[Answer] First of all, such surpluses still can be found. For example, we have had a surplus of apples this year, and also certain industrial goods. But examples like these are rarer than last year. But I don't think that this is good reason to eliminate our enterprise.

[Question] Why?

[Answer] Because this type of transaction, implemented through self-payment, stands as one of the three types of trade operations we conduct.

First, we exchange goods within the framework of annual agreements signed by the ministers of the socialist countries. We also exchange goods with our neighbors. Approximately two-thirds of our foreign trade is with the socialist countries. The remainder is compensation transactions with trade organizations and producers from the capitalist countries.

[Question] And that means that rather than go bankrupt, an enterprise can become more developed?

[Answer] I shall leave the conclusion to others; I can give you only the facts. The facts are that in the past year we have increased our turnover by 20 percent. We have such a good financial situation that we are now in third place among the ministry's foreign trade entities; not long ago we were in last place. This makes for a favorable climate in which to operate and provides for the incentives for greater turnover. And as a consequence, the results can be much better.

For example, looking for the possibility to expand our turnover this year, Torimex has begun cooperative efforts with Polish emigre organizations; we have signed over 30 agreements with such organizations for which we have imported goods worth 87 million zlotys and exported such products as cabinets, toys, cosmetics and school chalk. During the course of the last several months, we have consummated contracts worth 300 million zlotys, which -- we estimate -- can be increased several times over.

[Question] Personally, I am not well versed in these statistics. Can you give us a few concrete examples of Torimex activities?

[Answer] Of course. On a global scale, our turnover this year should reach 13 billion zlotys. It should because the possibility of exceeding the plan exists. During the course of the first 10 months, we achieved 96 percent of our import plan with the socialist countries and over 80 percent of our export plan. With respect to import from the capitalist countries, we have achieved 98 percent and export, 65 percent.

[Question] Why is there such a significant disproportion of these latter indicators?

[Answer] Simply stated, these imports come not only from the efforts of Torimex. We have bought more goods than we have sold.

[Question] You are conducting this conversation with enormous figures that can stand as a basis for evaluating the degree of carrying out the plan. However, they are not adequate for making general conclusions. I shall try to focus my question: what role does Torimex play in attempting to fulfill market demands?

[Answer] I am really not capable of answering that question in one overall response. Firstly, a large number of foreign trade organizations are involved in supplying the market -- thus, it is difficult to bring it all into the proper perspective. Secondly, the market is so large that even the most skillfull foreign trade enterprise will have only a small impact on the entire society. I shall try to give you some specific cases.

With respect to the large number of foreign trade enterprises that fulfill contracts for the market, they operate primarily under long-range contract stipulations. On the other hand, our trade also contains the element of supplying rapid requirements to satisfy the immediate needs of the nation's stores. Therefore, if the size of the turnover -- 13 billion, as stated earlier -- is not especially imposing in relation to the global value of market deliveries from national and foreign production, then the following particular has special significance: the single transaction itself is not the only important thing but also the speed in which social needs are fulfilled.

And Torimex reacts quickly to the most sensitive shortages. Sometimes these are small and inexpensive goods having little to do with the size of global turnover, but yet they mean a great deal from the point of view of supplying the domestic market. This year, for example, there were shortages of school notebooks and thread. And even if Torimex was successful in meeting the needs in these areas -- to a large degree we succeeded -- on a macro scale, they meant very little to overall global turnover. How do you evaluate our ability to fulfill market demand in this context?

[Question] From the information you have supplied, it appears that imports have exceeded the value of exported goods. What has Torimex brought into Poland up to now?

[Answer] The principle pressure was to import more clothing and shoes and to overcome the deficiencies in tea and coffee. Independent of these, we also imported paprika and floor coverings from Bulgaria; paint and lacquer and automatic washers from Czechoslovakia; refrigerators, batteries and bicycles from the Soviet Union; furniture, fruit and vegetable preserves from Romania; canned fish, tomato concentrate and cosmetics from Hungary; slippers, cotton underwear and towels from Vietnam and paprika, knives and porcelain from the Korean People's Republic. Of course, these are only a few examples from our transactions.

[Question] And how did we pay for these purchases?

[Answer] Here also the assortment of goods was significant. Among others, we sold to Bulgaria cosmetics, electric stoves and household goods; to Czechoslovakia -- glass and porcelain; to the USSR -- enlargers, lighting equipment and cosmetics; to Romania -- cosmetics, bedspreads and crystal; to Hungary -- glass packaging, musical instruments, souvenirs; to Vietnam -- televisions and polyester; to Korea -- televisions.

[Question] Hearing all of this, one can reflect that Torimex does indeed enrich our market, but also depletes it. In other words, we have to reduce both our import and export deficits.

[Answer] In this type of trade, the principle "something for something" always will dominate. It is only a question of choice -- i.e., if there is a tea shortage, it really does not matter what is done to overcome it. But this does not mean that the selection of good for good will be without conflict for the domestic market.

[Question] I am not all that convinced. This means that in Torimex trade, one good must be exchanged for another good.

[Answer] I am of the same opinion, although my thinking concerns not only our central agency but also the organization foreign trade in general.

In essence, I feel that despite the broad changes that have occurred in the functioning of the national economy, foreign trade -- with the exception of a few modifications -- generally has not been touched. The few modifications have not brought any fundamental changes in the foreign trade model. In many cases, there have been restrictions place on the foreign trade organization.

[Question] How can these negatives be overcome?

[Answer] It seems to me that the restrictions have been placed on the area that will help to expand our foreign trade -- competition! This process must be overturned.

[Question] Is that enough?

[Answer] I don't know if it is enough. But if it is corrected, it will be felt both on a global scale and in the domestic market.

9807

CSO: 2600/514

PROVINCIAL PARTY ECONOMIC SECRETARIES CONFER ON 1984 GOALS

Warsaw TRYBUNA LUDU in Polish 23 Dec 83 pp 1, 2

[Text] The principle of ideological, political and economic unity--emphasized at the 13th and 14th Plenums of the Central Committee--places on party echelons and organizations the obligation of still more active influence, corresponding to the needs of society, in the progress of economic processes. This is the general conclusion of the deliberations of the economic secretaries of the provincial committees and the first secretaries of the plant committees in the ministries, which took place on 22 December in Warsaw.

Politburo member and Central Committee Secretary Kazimierz Barcikowski chaired [the meeting].

The chief of the Economic Department of the Central Committee, Stanislaw Gebala, presented the issues of party activities in the accomplishment of tasks resulting from the 14th Plenum. The point of departure for the tasks in 1984 is more favorable than a year ago; however, these tasks are very close [to completion]. The needs of the society dictate the necessity of a faster growth in consumer goods output and an improvement in the housing construction situation. At the same time, external determining factors, especially sanctions against our country, demand a greater export effort. The conditions in which the economy will be operating also create strict requirements for a more frugal utilization of raw and other materials.

Many economic reform mechanisms with modifying capabilities were created so that, in the coming year, economic instruments would stimulate a more profitable course in the production process, from the social point of view and that of existing factors. However, the interests of plants and their work forces are not identified everywhere with the interests of the society at large.

The plans of some enterprises--it was stressed during the course of the deliberations--fail to meet the principles of the central plan, especially in such vital areas as the effectiveness of management, the linking of wages to production growth, and the lowering of production costs. Some enterprises also set a low growth rate in exports, simultaneously planning higher

imports. The role of frugality in the use of materials is underestimated. All of these phenomena--it is noted--could affect the difficulties in implementing the principles of the central plan.

Factory party organizations should play a substantial role in the surmounting of these weaknesses. Their basic task is the participation, in cooperation with workers' self-governments, in working toward harmony between the plans of enterprises and the central plan. As soon as possible, party organizations should also appraise the implementation of factory conservation and anti-inflationary programs.

Implementation of next year's plan also demands greater investment discipline --in the sense of outlay of resources as well as in the course of implementation. Barriers to the development of individual housing construction, just as the bureaucratic type, must be more actively overcome.

As in the past--it is stated--the economic progress which is gradually occurring in our country is not visible enough in the marketplace. At the same time, there is nothing standing in the way of every industrial enterprise, regardless of basic product type, participating in the supplying of goods to the marketplace. This is also a sphere for activities by factory party organizations, as well as for provincial echelons. The latter should influence the development of small-scale industry substantially more effectively.

The problems connected with the wage system reform likewise took up a lot of time. It was stated that party organizations have a vital role to play in the initiation of experimental, incentive principles of reward in production plants. The main concern is to lessen the share in rewards of those factors resulting from the mere fact of remaining at work, while strengthening those elements which are dependent on the nature of the work and its results.

As in the past, the strengthening of the role of workers' self-governments in enterprises is an important task of the party.

Directives for activities were outlined at the deliberations and define the essence of the political role of the party in the economy in 1984--in compliance with the resolutions of the 13th and 14th PZPR Central Committee Plenums.

9891

CSO: 2600/524

BRIEFS

AUTO EXPORTS TO DENMARK--In November yet another Eastern European car joined the list of the top 25 cars sold in Denmark. It was--not unexpectedly--the Polish-made "Polonez," which had been launched on the Danish market in May 1983 and was being marketed by SAAB. At a price of only 63,782 Danish kroner including delivery, it truly is a low-priced car for Denmark. "It is the most western type car from Eastern Europe," SAAB said last May when introducing the car. This is not an exaggeration, for the "Polonez" that is on the market today has quality, something which could hardly be said about the Polish-Fiat models a few years ago. The sales figures which SAAB can show for the last half of 1983 prove this, and undoubtedly they could be even higher if a sufficient number of cars could be obtained from the Polish factory.

[Text] [Copenhagen BERLINGSKE TIDENDE in Danish 1 Feb 84] 6893

CSO: 3613/77

FAILURE TO IMPLEMENT LAW LINKING PRODUCTION AND TRADE

Zagreb DANAS in Serbo-Croatian 20 Dec 83 pp 22-24

/Article by Slavko Curuvija: "Pictureless Frame"/

/Text/ When it was announced during the heat of August that the SIV examined the implementation of the Law on Mandatory Linking of Trade and Production and concluded that little of importance had changed in this area in relation to the period before this law was enacted, it was difficult to resist being caustic and not remember seances in which for years people had mused about "the transformation of production relations in the production and trade sectors." Innumerable professional and autonomous professional collaborators, high- and low-ranking advisors in numerous work communities, trade associations, business communities, chambers, banks, secretariats, commissions, work groups and sub-groups tailored and retailored these relations in the reorganizational enthusiasm of the post-ZUR period! How much energy, how many working hours, mineral water and coffee was used until the law was enacted.

For an entire year thereafter, merchants frantically made thousands of stereotyped self-management agreements with producers. A huge administrative workload was performed in order to reregister trade organizations, and in the end the conclusion was reached that essentially nothing had changed.

One would somehow get over it, if this were all. Unfortunately, however, once a bureaucratic procedure is started, it is not so easy to stop it. Namely, if in the few weeks till the end of the year something does not change, more than 2,000 trade organizations which had been obliged to link with production will not be able to perform their basic activity after 31 December 1983! All our large trade organizations are among them, without exception. The reason: in 3 years--the term given to them since the beginning of the implementation of the law--they have not been able to generate at least 50 percent of their total income through joint business operations with the production sector.

According to available data, trade in 1982 achieved on this basis no less than 1.5 percent. Thus "only" 48.5 percent is missing.

A lot was intended and a lot started with this law. It is true that it was necessary, because relations between production and trade had never been regulated. Everybody developed as he found appropriate, and this may be the

reason why the law insisted on the coordination of production and trade, joint income, specialization, better use of capabilities, joint responsibility for the income and joint risk, more efficient presentation on foreign markets, and many other things. It was insisted upon and, judging by the situation, it was exaggerated too.

What is going on in this area? Why don't they associate? Why are investments into production so small? Why is joint income so low? Why does the production sector persistently form its own commerce departments? What is the law we are talking about? What new things does it propose?

We made a survey in several renowned production and trade enterprises. Here is what their representatives think of all this.

Aleksandar Pavicevic, deputy director of the Belgrade MAG, a complex organization of producers in the area of home construction, undoubtedly has experience in both activities: he started in production, worked for a while in trade, and came back to production. He thinks that talks on the problem of the relationship between trade and production are usually held outside both trade and production, that the characteristics of time and place in which we live are not taken into account and that there is no feeling for nuances. There is too much insistence on mere indicators and statistics, and that this logically leads to wrong conclusions. He says that greater attention should be paid to many objective circumstances.

Our trade, and for that matter production too, was formed according to all the rules of a central organized economy, with a strict distribution of work according to the principle: you produce, and I supply and sell! Everybody was responsible for his own field and took care of it only. The trade organization and manpower policy has grown on this logic. Everything was more or less OK until relations started to change and production started bearing responsibility for its income. At that point people started noticing a great discrepancy between the trade organized in such a way and various phases and elements of reproduction. The first conflict situations were manifested, but there also began the restructuring and adaptation of part of the trade organizations and their turning toward production.

Unfortunately, Pavicevic says, most tradesmen have not done this. And they have not done it because there is always merchandise on the world market which makes it possible to achieve business objectives with relatively little investment and effort. Our trade primarily marketed such merchandise and avoided whatever required more time and funds and entailed greater risk. More and more products unfortunately are of this type of merchandise, and especially the so-called investment equipment or equipment which is built into large objects that we produce. Competition is fierce here, huge funds have to be invested (the bids alone sometimes cost several billion old dinars), and there are few trade organizations willing and able to assume such risks. This is one of the main reasons why we are not satisfied with the results of the linkage with trade in the engineering industry. The other effects are secondary. Yet, the MAG has agreements with more than 20 foreign trade organizations. They are formally in agreement with the law, but the problem consists in the fact that it is not easy

to plan production, follow the costs, and generate joint income and whatever else the law demands, with such a large number of organizations.

How can we defend ourselves from this?

We first formed special services and gave them the exclusive task of maintaining links with all these organizations. As time went on, however, these services increased in number, and not only in number: a personnel experienced in marketing and in foreign trade management techniques was developed. Although it was not our intention in the beginning, these services very soon completely specialized by line and became much stronger than foreign trade organizations wanted and than they could be. In addition to what I already said, this also is the reason and the secret behind the formation of trade departments in production organizations.

The attitudes of other representatives of the production sector are not essentially different from Pavicevic's.

Mladen Prica, vice president of the management board of Energoinvest, does not see major problems in all this. He says that everything is simple: "We buy and sell more or less all of our stuff through our own trade organization. When we buy, we do it in large quantities, directly and constantly, from the producers of intermediate goods, and when we sell, we sell equipment whose cost and complexity is so great that no typical trade organization can handle it. We sell directly to the investor, without trade mediation."

The Ljubljana ZPS comprises nine work organizations of the Slovenian engineering industry. They have similar problems as all other large producers of investment equipment. They cope as best they can, but most often they sell through their own efforts. Even what goes through classical trade, does so mainly only on paper. Dusan Stefancic, vice chairman of the SOUR management board, says that they do not have their own trade department yet but that they intend to register for foreign trade activity. Why? "Because tradesmen like best the deals that involve little effort and a large profit! Anyway, we will accept any good deal facilitated by trade organizations." As for the law on mandatory association, Stefancic thinks that it contains "very many nice phrases which are difficult to implement."

Branko Pocekaj, deputy chairman of the management board of Rade Koncar, says that Koncar predominantly trades through its own trade organization. A little trade is done formally through regular trade channels, although in such cases the complete elaboration and realization of the transaction is done within the enterprise. The network of Koncar's own representatives covers 13 countries, on the basis of the significance of various areas. They do not intend to make any essential changes, because they are convinced that large enterprises like Koncar cannot operate otherwise. Moreover, it is done like this all over the world. It is true that the situation in small productive work organizations is different; they neither can nor have to handle their trade. It is cheaper and more profitable for them to associate with regular trade organizations, Pocekaj said.

Radoje Dakic enterprise from Titograd also regards the relations between production and trade without any idealism. Milenko Vijovic, director of the Promet OOUR, says bluntly that their experience with trade is mainly negative. They made agreements with eight trade organizations, relied completely on them and neglected their own trade service--and now their unsold construction equipment is sitting on the factory ground. Cooperation lasted as long as the boom, Vujovic says, but when demand dropped, cooperation perished. They used to sell 60 percent of their equipment through trade, but now they sell only 20 percent this way. Presently they are boosting their own trade service and hope that things will improve.

What do merchants say about all of this?

They say that this whole business of association is not as simple as it may seem at first sight.

Ljubomir Perunicic, vice chairman of the Inex management community, points out that one must secure minimal premises for the implementation of every law, including one. In this case it was necessary to secure at least more lasting conditions of business activity, self-management planning--from the OOUR's to the federation--and a unified Yugoslav market. He says that these premises have not existed since 1980, when this law was enacted. Therefore it was not realistic to expect that its provisions would be successfully implemented. Moreover, Perunicic points out, the law has made association mandatory only for trade organizations, while production organizations were free to not to show any interest in this whole business. "I cannot force anybody to make agreements with me if he does not want it! We have made many self-management agreements, we have committed considerable financial resources in several production organizations, nevertheless we cannot satisfy all these provisions."

Stojan Zaric, assistant director of Inex-Promet SOUR, states that the law is well conceived but that it was enacted at the least convenient time: conditions for economic activity have worsened and production is not ready to enter long-term relations with trade. Moreover, it is almost impossible to make some provisions operational and to follow them. As an example he took the provision on joint income: "This calculation is so complicated that not even the most modern equipment can help very much." Zaric sees one of the most serious obstacles to the implementation of the law in the formation of trade departments in production work organizations. He thinks that they are new and unnecessary intermediaries in trade.

Slobodan Borisavljevic, an experienced merchant and vice chairman of the Genex management board, says that it was clear beforehand that this law would not be feasible, because it was enacted without a deeper study of the problem; it makes association mandatory only for traders; the principles of joint income generation are complicated and unclear; and the demand to realize half of the total income through joint operation with production is, to put it mildly, not realistic. Otherwise, Borisavljevic continues, very important regulations and decisions in this area are often made by consulting the least with those who have to implement them. "For example, in the Coordinating Committee of the Federal Executive Council for the organizations of associated labor that are engaged in foreign trade, there is not a single representative of these organizations!"

As for investments in production, they also took place before this law was enacted. Unfortunately, we are suing most of these organizations today. There were many problems with the monitoring of business operations of jointly formed OOUR's and with the influence on their business policy. Because of such experiences, we have been more cautious with decisions on investments after this law was enacted, and we mainly establish credit relations. We are presently crediting more than 50 production organizations from all of Yugoslavia with about 140 million dollars and 1,700 billion old dinars. We have associated the labor and resources with several work organizations. For example, we have joint enterprises in Britain with Zastava and IMT, which perform certain modifications on automobiles and tractors. With the Pozarevac MIT we have invested jointly in a packing plant which will deliver meat to the U.S. market in the amount of 35 million dollars by next year.

Unlike his colleagues in Inex, Borisavljevic does not see any problem in the fact that large enterprises establish their own trade departments. "There will always be work for us: we are sales agents, we explore the market and carry on foreign trade through our posts abroad. When necessary, we ensure credits with our own or the bank's guarantees, and the rest is done by the producers themselves. This is how world business operates, and there is no reason why we should do it differently. In 33 countries we have 60 representative offices and enterprises with 165 employees. Among them there are 33 workers, delegated by the production organizations with which we cooperate."

However it may be, it seems that many facts and arguments are conspiring against the rigid logic of the law on mandatory association of merchants and producers. And it seems that those who say that the law was enacted at the least suitable time are right indeed.

We are witnessing very unstable conditions of business activity and economic trends, and a clearly uneven economic position of production and trade. Who is interested in long-term association with this or that group under such conditions. Who, except for the very powerful, is interested in investing, when bank credits are sought even for operating funds? When to this and to what was said by our interlocutors, we add the data on all the considerable disturbances in the market, on the imbalance between supply and demand, on the steep rise of prices--the picture is complete.

The situation is as it is, but what next?

The future of the relations between production and trade, Milan Brdjovic, also from MAG, says, cannot bear any micro or macrostrategy: "It is not possible to let things go as they are going, nor is it appropriate and realistic to demand too much from the trade. For anybody who demands, for example, strict trade specialization must also assume responsibility for its existence and development. These people must also live when the products in which they are specialized are not in demand on the market.

"We must seriously deal with the problem of the adaptation of development and production to the needs of the domestic and especially of the foreign markets because, however good the relations between production and trade may be, there

will not be any success if the commercial transactions do not satisfy the needs of the market in assortment, quality and prices. Besides the trade, production must pay greater attention to the market aspect of conducting business. Is it the traders' fault if somebody's machines cannot be sold because other make them better and cheaper, or because these machines perhaps are not wanted in the market at all?"

What should the above mentioned "unobtrusive assisting" of legal coercion look like?

If one has to judge by some proposals for changing the law, there are people who say that the purpose of the law is not unobtrusively to assist this or that "subject," but to push the "subject" into its mousehole at any cost. The idea is that things will get settled if the term for the implementation of the controversial provision on income from joint business operation is extended for 2 years and if producers are forced to associate with the traders.

Without hiding their emotions, knowledgeable people say that the first proposal is still unrealistic and that the second will be one more among the numerous regulations crushed by real life.

Fortunately there will be further discussions about this in the SFRJ Assembly.

By the way, only journalists are agitated about those 2,000 or so OUR's which allegedly will not be able to continue operating. To everybody else it is perfectly clear that the whole thing will be solved at the expense of the--law.

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