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JPRS-EEI-84-105

14 September 1984

# East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

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14 September 1984

## EAST EUROPE REPORT

### ECONOMIC AND INDUSTRIAL AFFAIRS

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FUTURE DEVELOPMENT OF FERROUS INDUSTRY DISCUSSED

Sofia PLANOVO STOPANSTVO in Bulgarian No 6, 1984 pp 24-35

[Article by Docent Dimitur Stoyanov, candidate of economic sciences: "Once Again on Trends in the Production and Consumption of Ferrous Metals in the World and Conclusions on the Trends of Development of Ferrous Metallurgy in the Bulgarian People's Republic"]

[Text] Metals play an important role in the structure of material resources. They are basic construction materials in contemporary public production. Machine building is the main consumer of metal in the national economy. Currently our machine building industry accounts for the use of about 47 percent of all ferrous metals used in the national economy.

In 1982 Bulgaria produced 2,584,000 tons of steel and 3,253,000 tons of rolled ferrous metals. However, even this level of output of ferrous metals does not fully satisfy the needs of the national economy in terms of quantity and, particularly, quality. The modern production process is characterized by a relatively high metal consumption and substantial metal waste. Only slightly more than half of the entire amount of steel either produced in the country or imported goes into machines, metal goods and metal structures. The rest goes to waste. This determines the prime significance to the economy of metal production and consumption in terms of national economic intensification and efficiency.

Ensuring the national economy with the necessary ferrous metals depends on three main conditions: increasing the production and import of ferrous metals; improving the quality of metal production; and more efficient utilization of the metal. During the past 20 years the role of the second and third prerequisites has been increasing steadily. Unquestionably, this reflects on the trends in ferrous metal production and consumption.

In 1983 this periodical published a discussion on the basic trends in the production and consumption of ferrous metals in the world.<sup>1</sup> These trends, which form a pattern, reflect objective processes and phenomena in the global economy and, particularly, the economy of industrially developed countries. The establishment of a trend in the production and consumption of ferrous metals in the developed countries and the factors which determine them are of topical significance to our country, more specifically in terms of the formulation and choice of a development strategy for ferrous metallurgy on a long-

range basis and, partially, of metal consuming sectors. That is why the evaluations and conclusions found in these materials are of interest to planning and economic organs.

The study of trends in the production and consumption of ferrous metals on a global scale presumes a global approach and a comprehensive analysis based on a number of macroeconomic parameters. The results of the study, summed up by Dr of Economic Sciences P. Pavlov in said article and in other publications,<sup>2</sup> properly outline specific trends and identify the basic factors which determine them.

Although they acknowledge the interest in the article by P. Pavlov and its unquestionable merits, Candidate of Technical Sciences Y. Dimitrov and Candidate of Economic Sciences T. Kunchev dispute the accuracy and substantiation of some formulations, assessments and conclusions. In the course of the discussion, the author of the present article would like to express his views on the controversial problems, particularly on the factors which determine the trends in ferrous metal production and consumption and the development of our ferrous metallurgy.

Pointing out that "...not all factors which influence the reduced consumption of ferrous metals in the world have been identified and analyzed,"<sup>3</sup> Y. Dimitrov and T. Kunchev claim that "the stipulation that the energy crisis in the capitalist countries alone and the reduced pace of their economic development are factors which determine the declining trend in the rates of production and consumption of steel...is erroneous and unsubstantiated...",<sup>4</sup> for it does not answer the questions they raised.

What is essential in this case is that even a brief study of the content of P. Pavlov's article gives no reason to claim that it contains the stipulation described in the article by Y. Dimitrov and T. Kunchev. The text on page 41 and 42 shows that P. Pavlov identifies and rates three groups of factors: the energy crisis and the drop in the pace of economic development in the capitalist countries; participation in the international division of labor; changes in the metal consumption of the national income as a result of major technical, technological and structural improvements aimed at intensifying ferrous metal production and consumption. He considers decisive the significance of the last group of factors, which determine the reduced use of ferrous metals per unit of national income, i.e., which determine the efficiency of their consumption in the national economy.

It would be useful in this connection to remind both authors that in the study and, even more so, in a scientific discussion it is inadmissible arbitrarily to interpret the texts of other authors such as, for example, substituting with the concept "only" the concept of "important significance," which changes the meaning of the statement, and that it is necessary to assess the author's view on the matter on the basis of the overall study of his work. A scientific discussion must be consistent with basic stipulations, such as competence, objectivity, accuracy, etc.

Y. Dimitrov and T. Kunchev dispute the accuracy and substantiation of assessments in P. Pavlov's article, stipulating that it does not answer the questions they raised. For understandable reasons, a specific work (not to mention an article) neither can nor should answer all questions which readers may ask.

Nevertheless, let us try to shed some light by answering some of the questions. Let us determine above all "why is it that statistical data do not indicate major crisis phenomena (stagnation, decline) in the global production of energy and energy sources after 1974?"<sup>5</sup> The answer of this first "why?" is found in the nature and character of the energy crisis and the inaccuracies allowed by the authors of the question.

The energy crisis is a structural crisis of contemporary capitalism. The main feature of the energy crisis is the profound disproportion between the structure of the energy resource base of the capitalist countries and the structure of their energy balances (prime energy consumption). From the turn of the century to the 1970's we can note a clearly expressed long-term trend of increased energy consumption in the world. The need for power resources (namely with a high concentration of natural energy) increased while the dimensions of the energy resource base declined. The disproportion between the structure of the energy resource base and of the fuel-energy balance, which had been worsening in the course of decades, surfaced at the beginning of the 1970's. The energy crisis brought about the drastic changes in price ratios on the global capitalist market in favor of petroleum. Between 1970 and 1982 nominal petroleum prices increased by a factor of 19, while real prices, disregarding inflation, increased by a factor of 6.<sup>6</sup> A new situation, unforeseen by mankind, developed in which the active involvement of additional volumes of energy was no longer a universal means of surmounting economic difficulties, while energy problems assumed a global nature. This had and continues to have a profound impact on the global economy and, particularly, the development of ferrous metallurgy.

Y. Dimitrov and T. Kunchev are inaccurate by supporting their "why?" with data on the production of individual energy sources. According to United Nations statistical data the production of prime energy in the world by year was as follows (in million tons of conventional fuel):<sup>7</sup>

1974,	8,199
1975,	8,105
1976,	8,573
1977,	8,858
1978,	9,034
1979,	9,470
1980,	9,338
1981,	9,094

Even more indicative is the change in average annual rates of energy output in the world during the period under consideration, compared with the 1960's: 1960-1970: 5.2 percent; 1970-1979: 3.3 percent; including 1973-1975: -0.05 percent and 1975-1979: 3.8 percent.<sup>8</sup>

These data indicate that it is scientifically unsubstantiated when speaking of changes in the global production of energy and energy sources to offer "proof" by citing data exclusively for the production of individual energy sources (coal, petroleum), the changes in which could coincide or not with the changes in the overall index under consideration.

An exhaustive answer to the second and third "why?" could be sought in the characteristics of the economic cycle and the crises in contemporary imperialism.<sup>9</sup>

The answer to the fourth and fifth questions: "Why is it that metal consumption is increasing in our country although our country is poor in energy resources" and "how to explain the fact that steel consumption in Hungary is the lowest among the socialist countries...?"<sup>10</sup> should be sought not only and exclusively in the changes in the structure of the economy on the macro-level but, above all, in the internal sectorial structure of metal-consuming sectors and the shaping and development of metal consuming subsectors and production facilities in machine building, the low technical level of production and consumption of ferrous metals, their unsatisfactory quality, the low metal utilization coefficients (i.e., the relatively higher metal outlays in the production of individual commodities or per unit of basic commodity parameter) and the high metal consumption of exported metallurgical and machine-building goods. The authors provide a partial answer to the questions with a minor statement that "the production variety in our machine building is still being updated with inexpensive metal-consuming items, which determines the high consumption of metal and the trend toward a metal-intensive development of the economy."<sup>11</sup>

This indicates and provides grounds for the claim that the decline in the rates of economic development (the economic crises of 1973-1975 and 1980-1982) and the energy crisis in the capitalist countries are factors leading to a decline (temporary, circumstantial) in the production and consumption of ferrous metals. Let us note, however, that neither P. Pavlov nor the author of this article consider them as being exclusive, basic or decisive in the lowered ferrous metal production and consumption in the world.

Naturally, the steadily declining trend in the production and consumption of ferrous metals per capita and per unit national income cannot be explained exclusively in terms of the uneven cyclical nature of development of the capitalist world. This trend is the result of the effect of a complex set of factors. The totality of factors which determine the trend of decreasing consumption of ferrous metals is of intersectorial nature. For this reason, the sectorial approach used by Y. Dimitrov and T. Kunchev in the analysis of the factors does not ensure the necessary complexity of their study. From this viewpoint their classification of factors (pp 15-18) is incomplete. At the same time, the systematization of factors and the assessment of their influence on the reduced consumption of metal in machine building they suggest are quite controversial. Essentially, effort has been made to systematize the manifestations of scientific and technical progress. Such systematizing, however, allows for the double consideration of the influence of some factors. It is not consistent with the basic trends of scientific and technical progress



and does not cover the entire reproduction cycle. Some of the factors are not clearly formulated and the assessment of their influence on the consumption of ferrous metals is arguable. The suggested system of factors does not take into consideration the influence of structural changes in the national economy and the individual sectors and of organizational-economic factors.

The question of the factors which determine the long trend of decline in the production and consumption of ferrous metals is directly related to the problems of intensification and trends in the development of ferrous metallurgy in our country and ferrous metal consumption in the future. Y. Dimitrov and T. Kunchev are surprised to note that P. Pavlov raises the question of the directions along which ferrous metallurgy will develop. In their view, "the answer to this question was long provided by life: the expediency of the intensive development of the economy is unquestionable."<sup>12</sup> Naturally, this did not prevent them, two pages later, from determining the "trend of metal-intensive development of the economy."<sup>13</sup>

This is not the first time that the question of the trends of development and intensification in metallurgical production is raised.<sup>14</sup> So far, however, it was resolved mainly through the reconstruction and modernization of individual metallurgical machine units and the building of new capacities with a view to ensuring the better satisfaction of increasing requirements for metal. Nevertheless, ferrous metallurgy and the metal-consuming sectors are still making use of extensive development factors. This is confirmed by the inefficient utilization of material resources, productive capital and manpower in ferrous metallurgy (relatively high metal-, capital- and labor-intensiveness per unit of metal output), the low metal utilization coefficients, the relatively high metal-intensiveness of the items and the overall and net output in metal-consuming sectors.

Studies have shown that the level of such ration of the national economy with ferrous metals exceeds the average worldwide level; the metal-intensiveness of the commodities produced by metal-consuming sectors and, in general, in the national income is relatively high.<sup>15</sup> The experience of the USSR and other industrially developed countries, as well as our own, indicates that the best economic results are achieved whenever the development of ferrous metallurgy is directed toward end national economic results, i.e., toward the better satisfaction of the needs for metal, achieved with minimal outlays and under optimal conditions.

Against the background of these trends in ferrous metal production and consumption, P. Pavlov raises the question of the realistic nature of the task of simultaneously updating commissioning capacities and developing a third metallurgical base (enterprises with a complete metallurgical cycle).<sup>16</sup> The successful development of ferrous metallurgy in any country is the result of the utilization of the latest scientific and technical accomplishments in modernizing the sector and expanding production capacity. In terms of the scale and resources of our country, the simultaneous technical improvement of existing metallurgical capacities and building a new metallurgical base with a full metallurgical cycle would be a difficult task which would remove from production functioning significant resources for a long period of time. What

is more important in this case is that this will ensure the primarily extensive development of ferrous metallurgy at least until the mid-1990's. This will inevitably affect the effectiveness of the sector and the entire national economy.

At the same time, the views expressed in the P. Pavlov and Y. Dimitrov and T. Kunchev articles prove that the task set by the 12th BCP Congress of comprehensive and all-round intensification is particularly topical in terms of the development of ferrous metallurgy.

Metallurgical production intensification means making a substantial change in the set of interrelated factors influencing the development of the sector on the basis of scientific and technical progress, which ensures the lasting and stable enhancement of its efficiency. It means, above all, the qualitative development of productive capital and manpower and their increased utilization efficiency, which enables us to surmount the limited nature of resources. Metallurgical production intensification is manifested, on the one hand, in the accelerated application of the achievements of science and technology and, on the other, the production functioning of existing and newly installed productive capital as a single production machinery. In this sense, intensification is a twin process the starting point of which is the installation of new productive capital and finding new scientific and technical solutions.

Metallurgical production intensification is not a one-time process but a steadily repeating, i.e., a reproduction process. This means that at each stage in the development of ferrous metallurgy it is based on applying the achievements of scientific and technical progress. That is why, in our view, it would be accurate and necessary for the question of the development trends in ferrous metallurgy to be raised again. Taking into consideration the apparent trends in the development of ferrous metallurgy, we could recommend that the plan for a third metallurgical base be reworked with a view to limiting construction to the development of a specialized enterprise in stages (since the building of rolling capacities--the 300 Mill--is already a fact) operating at low capacity but on the basis of a highly efficient technological system and organizational structure.

Y. Dimitrov and T. Kunchev blame P. Pavlov for his failure to indicate in his article how to achieve the intensive development of the sector. They would have spared themselves this effort had they studied some of his other works.<sup>17</sup> They also consider debatable P. Pavlov's stipulation that "greater reconstruction and modernization compared to new construction will help to intensify the production of ferrous metals in our country, will reduce metal-intensiveness and make consumption and export of ferrous metals more efficient...." In their view, this trend is "correct for countries rich in mineral resources and with a developed ferrous metallurgy...."<sup>18</sup> Their view of the trends of development of ferrous metallurgy in our country is as extreme as it is strange and unacceptable: "Not reconstruction and modernization but the gradual elimination of obsolete metallurgical capacities must take place in our country. Instead of investing once again huge funds in the development of metallurgical capacities, it will be more expedient to reduce metal consumption to the level

of countries advanced in this area...."<sup>19</sup> One can easily imagine what the implementation of such a combination (incredible though it may seem) would mean in terms of the country's economy.

The task of lowering ferrous metal consumption to the level of the advanced countries is in the center of attention of party and economic authorities. Some success has been achieved in the case of individual specific items in lowering relative metal outlays. The level of ferrous metal consumption in an individual country is determined, above all, by the technical perfection and structure of the metal production and consumption. For this reason, lowering metal consumption to the level of the advanced countries is of intersectorial nature. As a whole, its implementation is inconceivable without technical improvements in metallurgical production and without improving the quality of metal and increasing the variety of metal goods.

Ferrous metallurgy is one of the most highly capital-intensive sectors, the development of which requires substantial annual capital investment. The main characteristic of the investment policy in the sector over the past 20 years has been the fact that the areas of investment have changed along with changes of priorities in the development of ferrous metallurgy. Between 1965 and 1972 they were concentrated on upgrading the quality of metal output and labor productivity; from 1972 to 1980 they were concentrated on resolving environmental protection problems and the conservation of energy and raw materials. Starting with 1980 investments have been related to the production of high technology metallic goods.

The bulk of the capital investments is channeled not into increasing production capacities but replacing and updating existing equipment and developing new equipment and technology.

In countries with a developed ferrous metallurgy a high percentage of capital investments goes into the development of rolled metal production, accounting for 34-51 percent of total investments in the sector. During the second half of the 1970's the members of the European Economic Community, the United States and Japan have invested considerable funds in building machines for continuous casting of rolled steel parts (MNLZ). The continuous casting of steel parts is an example of high efficiency low-waste technology. It has proved to be one of the most efficient means of reducing energy outlays, for it enables us to exclude from the metallurgical cycle operations for changing steel ingots into blooms and slabs. This reduces power outlays for heating the ingots before their deformation and increases the production of items suitable for use by 10-15 percent compared to ordinary casting (in molds). Overall energy outlays in the use of MNLZ is reduced by a factor of 3-4.

Japan, which has virtually no domestic fuel and energy resources, allocates substantial funds for the development of energy-conserving technologies and equipment. As a result, in ferrous metallurgy as a whole outlays of energy resources per 1 ton of steel produced in Japan are significantly lower compared to the other capitalist countries.<sup>20</sup>

In the United States about 75 percent of capital investments in the sector were channeled into replacing and updating equipment between 1975 and 1980; the balance of the funds was used to expand capacities but not in steel production but essentially in the production of rolled metal goods, the installation of MNLZ, installing lining facilities, automation, etc.

Similar trends of investment policy in the sector were noted in the USSR and the other socialist countries. Our own ferrous metallurgy is also following these trends in the development of the sector. However, as P. Pavlov points out, "with a considerable lag in time and standards."<sup>21</sup>

Consequently, in our view, reconstruction and modernization are the main trends followed in updating metallurgical capacities and intensifying ferrous metal production and consumption.

Scientific and technical successes in ferrous metal production and consumption offer the possibility of improving the quality and developing new brands, sections and parameters of rolled ferrous metals and establishing a more efficient metal production structure, thus achieving the more efficient utilization of metals in the national economy. The progressive trends in the ferrous metal structure, which influence the reduced use of metal per unit of national income, are the following: lowering the share of castings and expanding the production of steel sheets, particularly that of cold rolled fine-sheet steel and lined steel, and economical shapes of rolled metal items (as close as possible to the final shape of finished parts and items); increasing the production of grade and sheet rolled metal and small-section pipes; increasing the shapes and dimensions of the variety of rolled metal goods; increasing the share of high-grade and special steels, continuous steel casting and additional cold- and hot-rolled ferrous metal goods.

Hence the main task in the development of ferrous metallurgy at the present stage and in the future is to enhance the quality and expand the variety of output. From the consumer's viewpoint, ferrous metallurgy must ensure the solution of the two following problems:

1. Increasing the reliability and tensile characteristics of metal output by increasing the production of alloyed and low-alloyed metals; extensive application of heat and heat-mechanical processing of rolled parts; controlled and microprocessor metal rolling; and increasing the production of metals with special properties.

2. Organizing the production of the type of variety of rolled metal items which would enable us to convert to low-operational technology in metal consuming sectors and would lower the metal-intensiveness of output; in this case this applies to improving variety in terms of sections and sizes by increasing the share of sheet rolled metal, including thin and cold-rolled and economical rolled sections, such as bent, specialized and high-accuracy, as well as cold-extruded steel varieties.

The relative metal-intensiveness of output in machine building and metal processing in our country, as confirmed by a number of studies,<sup>22</sup> is higher

compared to industrially advanced countries. The main reasons for this are the imperfect nature of the varietal structure in metal production and consumption, the inefficient structure (parametric, types and dimensions) of machine building output, the insufficiently high technical standard in metallurgical and machine building output, the corresponding lower quality of produced ferrous metals, weaknesses in planning and incentives, etc.

In order to implement these assignments, a wide program for the reconstruction and updating of operating capacities is being implemented during the 8th Five Year Plan at the Lenin SMK [Economic Metallurgical Combine] and the L. I. Brezhnev SMK. The reconstruction and modernization are aimed above all at creating conditions for the utilization of all valuable components contained in the ore, improving the preparation and quality of iron-containing raw materials and semi-finished goods; intensifying methodological processes through the extensive utilization of oxygen and natural gas and improving technologies; installing further equipment involving modern technical facilities for non-furnace steel processing; heat and heat-mechanical processing of rolled metal goods, pipes and items, etc. During the 8th Five Year Plan metal outlays are expected to decline by about 10 percent as the result of increasing the physical and chemical qualities of the steel alone. As a result of the use of more efficient technologies (continuous steel casting, etc.), fuel expenditures for ferrous metallurgy will decline by more than 10 percent during the five year period.

The conversion to intensive development of ferrous metallurgy requires the balanced development of machine building as the main consumer of this sectorial output, on the one hand, and the supplier of metallurgical equipment, on the other. Steps taken to improve the quality and variety of mass-use metals must be paralleled by a set of measures to prepare metal consuming production facilities for the extensive application of progressive metal output, above all supplying procurement facilities with modern metal-deforming equipment and the development of designs for machines to be made of the most economical types of metal (in terms of shape, dimensions, brands, etc.).

The enhanced technical standard of methodological production and improvements in the design and technical parameters of the items and the equipment and technology used in metal processing are manifested with particular emphasis in designing new and updating currently produced machines, apparatus, equipment and others. In the developed capitalist and socialist countries this is achieved along the following lines:

Increasing the scale of production and utilization of grade and special steels, economical rolled sections, additionally processed rolled metals, lined metals, combined materials (metal plastics, metal ceramics, etc.), plastics and synthetic resins and aluminum and aluminum-based alloys, which creates prerequisites for their efficient utilization by the consumers;

Improving design; this brings about positive changes in the structure of the consumed ferrous metals (ratio between castings, rolled metal varieties, rolled goods made of sheet steel, pipes and metal goods), improves the operational parameters of machines and equipment, lowers their weight, etc.;

Increased use of modern technologies in metal processing (progressive methods for casting, stamping, welding, etc.), which minimizes production waste and increases the degree of metal utilization.

The steps taken along these lines reduce metal-intensiveness in the production and utilization of goods (machines, equipment, installations, etc.). The aspiration is, above all, to obtain items with a lightweight structure while, at the same time, improving their quality and operational reliability. Lighter weight and, consequently, metal-intensiveness can be achieved as a result of a number of technical steps, such as upgrading the quality of the items and the consumer qualities of the metals used; conforming metal variety and property to the requirements of the consumers; full utilization of the tensile properties of ferrous metal; increasing the unit power and handling capacity of machines and equipment; applying new design solutions and using new materials, etc.

Progress in designing new items is indivisible from the application of new production technologies, which also lower metal outlays. The influence of the technological factor on the utilization of ferrous metals is manifested in the following directions: expanding the use of wasteless (low-waste) technologies; applying contemporary production technologies which enable us to improve metal utilization indicators; applying technological processes (in metallurgy) which improve the consumer features of the metals and positively influence relative metal outlays and the operational features of metal goods; and upgrading the level of practical utilization of metal waste.

This outline of the influence of scientific and technical progress on ferrous metal consumption proves the existence of a wide range of possible measures which could be applied in the course of the intensification of methodological and machine-building output and the interdependence of technical factors. Scientific and technical progress influences certain changes in the production structure in ferrous metals and machine-building goods. The intensification of ferrous metal production and consumption is inseparably related to improvements in the intrasectorial structure of the metallurgical industry and metal consuming sectors. We have already indicated the progressive trends in the dynamics of the intrasectorial structure of ferrous metallurgy.

In modernizing the production base of machine building it is necessary to develop a system which will ensure the implementation of structural changes by limiting or terminating the production of items with relative (specific) metal outlays higher than the average for the country; creating a better ratio between the weight and the consumer value (volume, capacity, useful load) of the output; improving the consumer value of the output through its renovation with the help of more scientific-intensive items; establishing the most efficient organization of the production process for the individual commodities and rationalizing material consumption, taking into consideration manpower and financial limitations.

The study of the basic trends in ferrous metal production and consumption indicates that on a long-term basis as well the problem of upgrading the quality and improving the variety of metal goods will remain one of the main

problems in ensuring technical progress in the national economy and the efficient utilization of metals.

#### FOOTNOTES

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2. P. Pavlov. "Production Intensification--Main Trend in the Development of Ferrous Metallurgy." IKONOMICHEKA MISUL, No 4, 1983, pp 43-54.
3. Y. Dimitrov and T. Kunchev, op. cit., p 14.
4. Ibid.
5. Ibid.
6. R. Andreasyn. "The Energy Aspect of Development and the Problem of Petroleum Prices." MEMO, No 1, 1984, pp 55-67.
7. "Yearbook of World Energy Statistics," United Nations, New York, 1982, Vol 2, 1983.
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9. See M. R. Entov. "Characteristics of the Cyclical Development of the U.S. Economy During the 1970's and Beginning of 1980's." SSHA: EKONOMIKA, POLITIKA, IDEOLOGIYA, No 1, 1984, pp 10-21; No 2, pp 7-17; G. G. Matyukhin. "Present-Day Inflation and Social Reproduction in the United States." SSHA: EKONOMIKA....," No 1, 1984, pp 42-54; R. Chizhov, "K. Marx's Theory and Post War Cycles." MEMO, No 6, 1983, pp 66-70.
10. Y. Dimitrov and T. Kunchev, op. cit., p 14.
11. Ibid., p 20.
12. Ibid., p 23.
13. Ibid., p 20.
14. See D. Dimitrov and D. Stoyanov. "Razvitiето na Khimiyata i Metalurgiyata i Intensifikatsiyata na Narodnoto Stopanstvo" [Development of Chemistry and Metallurgy and National Economic Intensification]. Partizdat, Sofia, 1970, p 77; P. Pavlov. "Problemi na Proizvodstvoto, Potreblenieto i

Vzaimozamenyaemostta na Konstruktsionnite Materiali" [Problems of the Production, Consumption and Interchangeability of Construction Materials]. Bulgarian Academy of Sciences Press, Sofia, pp 123-144, etc.

15. See P. Pavlov, op. cit. [footnote 1], pp 43-46; D. Dimitrov and D. Stoyanov. "Materialni Resursi i Efektivnost: Teoriya, Metodologiya i Analiz" [Material Resources and Effectiveness: Theory, Methodology and Analysis]. Partizdat, Sofia 1982; N. Kunchev, "Namalyavane Materialopoglushaemostta na Promishlenata Produktsiya" [Reducing the Material Intensiveness of Industrial Output]. Tekhnika, Sofia, 1983, pp 70, 80-81 and others.
16. P. Pavlov, op. cit. [footnote 2], p. 54.
17. See P. Pavlov. "Surovinno-Energiynite Resursi i Ikonomicheskata Integratsiya" [Raw Material and Energy Resources and Economic Integration]. Varna, 1978, pp 109-130; "Production Intensification--Basic Trend in the Development of Ferrous Metallurgy." IKONOMICHEska MISUL, No 4, 1983, pp 43-45.
18. Y. Dimitrov and T. Kunchev, op. cit., p 23.
19. Ibid.
20. See O. N. Zolotareva. "Capital Investments in Ferrous Metallurgy in the Capitalist Countries." CHERNAYA METALLURGIYA, No 7, 1983, pp 3-9.
21. See P. Pavlov, op. cit. [footnote 2], pp 43-54.
22. See I. Georgiev. "Materiale mkostta i Ikonomicheskata Efektivnost v Mashinostroeneto" [Material Intensiveness and Economic Effectiveness in Machine Building]. Bulgarian Academy of Sciences, Sofia, 1969; A. Tsvetkova and I. Vulev. "Efektivno Ispolzuvane na Metalite v Mashinostroeneto" [Efficient Use of Metals in Machine Building]. Tekhnika, Sofia, 1972; R. Donev et al. "Efektivno Ispolzuvane na Materialnite Resursi" [Efficient Utilization of Material Resources]. Sofia, 1977; M. Argirov. "Factors in Reducing Material Outlays in Machine Building." PLANOVO STOPANSTVO, No 1, 1977, and others.

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CSO: 2200/177



## SHORTAGE OF CONSTRUCTION WORKERS IN SOFIA CAUSES CONCERN

Sofia SOFIA in Bulgarian No 7, 1984 pp 10-11

[Article by Georgi Nedyalkov: "What Is Hiding Behind the Shortage"]

[Text] The fact that construction manpower is in short supply in Sofia has been sadly and long hanging like the sword of Damocles over the ambitious plans of the Sofstroy DSO [State Economic Trust]. The result is that in order to be able to fulfil its program with a permanent manpower shortage, the trust must engage in incredible organizational efforts if it is to rescue its plan with extremely stressed efforts. Adding the drastically stricter requirement concerning the quality of construction and the significance of the social effect related to the activities of Sofstroy, we become aware of the entire complexity and significance of this difficulty. The need for housing in our capital city remains even though some 14,000 apartments are commissioned every year. This figure would have been higher had the manpower been stabilized in this urban plan of such great social importance. Furthermore, it is an interesting fact that the number of Sofstroy workers has been increasing. It was 13,236 in 1982 and 13,941 in 1983; at the beginning of 1984 the trust was employing 14,133 workers. It turns out that the work of every construction worker suffices to build one apartment per year. In terms of our topic, the fact that the labor turnover is increasing is of greater importance in this case. Note that the first quarter of 1984 began with a shortage of 370 people. Within the same period of time 422 people were hired and 523 left. Obviously, the process has intensified and the Sofstroy DSO is starting the second quarter with a manpower shortage of close to 500 people. This is a condition which is not only alarming but puzzling, considering the difficult tasks facing the trust.

What are the steps which Sofstroy DSO intends to take in order to achieve at least a partial solution to this problem? Is this exclusively the result of weaknesses and shortcomings within the construction system in the capital city? Is the building of our capital city, the way all of us would like it to be, not a prime assignment which should rally the efforts of several ministries, departments and state economic trusts?

In an effort to answer at least part of these questions, we spoke with Ivan Sivkov, deputy general director of the Sofstroy DSO.

"This is a complex problem which is by far one affecting exclusively our trust. It is true that we began the year with a major manpower shortage. Despite the steps taken over the past 5 months, the personnel turnover, which is essentially the result of difficult construction conditions, is intensifying. Manpower turnover adversely affects the work of the Sofstroy DSO in two ways. First, we must steadily recruit and train new workers, who have still not reached the necessary level of skills. Secondly, the influx of less skilled manpower immediately affects the quality of output. In order to ensure adequate manpower for construction work in Sofia, the trust's management is operating along three different lines. First, we have an agreement with some okrugs in the country for mutual aid and cooperation in this area. We maintain particularly useful relations with Kurdzhali Okrug. However, even with the best possible understanding displayed by the local leadership, this is temporary manpower. That is why the second line is of great importance: the use of existing possibilities in recruiting manpower by student dropouts, for 18 months for the young people and 45 days for brigade leaders. The management pays particular attention to the increased possibilities of vocational training and guidance of third-course students. Not least, we consider the organization of labor a major reserve in this respect: improving the brigade organization of labor, converting to brigade cost accounting and the accelerated application of technical progress in the various construction processes.

"The nature of our work entails substantial working time losses on a daily basis. Idling and lack of rhythmical deliveries of materials lower the volume and quality of the work. Unfortunately, we have major difficulties settling the daily life problems of our workers. The question of meeting their housing needs has still not been adequately answered. There is not enough space in the hostels. There are problems in living conditions and incentive for the young cadres we hire."

It is obvious that on a daily basis the trust encounters severe contradictions in the implementation of its tight construction program. Is it not strange that it is precisely the builders of the new Sofia who experience major difficulties in obtaining housing for themselves after they have fulfilled their contracts? Continuity, which is so greatly needed in all professions but particularly in construction, is being severely violated. There is a gap between the old skilled workers with rich experience and the steady influx of young people who do not last for more than a year or two. Clearly, the working conditions are not attractive to the new workers. Working conditions in construction are particularly difficult and the building of the capital is a national task. Better wages and accounting organization, and the detailed classification of construction work in the capital would improve both the volume and quality of output. This applies to the living conditions of the construction worker, which should hardly be based on the necessary number of places in hostels. Working and resting conditions and supplements for entire families working in construction, and retirement conditions are major problems which continue to affect the dynamics of manpower in construction work in Sofia.

Naturally, the coin has another side as well.

A large number of the 523 workers who left during the first 3 months of 1984 were hardly the shipwrecks of life or disappointed enthusiasts. It is an old truth that many people make use of the Sofstroy PUTs [Professional Training Center] for their most egotistical purposes and most frequently for achieving temporary and, subsequently, permanent right to become residents of Sofia. Here is what we were told by Ivan Kamenov, the vocational training organizer:

"Construction is a profession for men. However, we also recruit girls, some of whom cope with the work surprisingly well. Naturally, they come both for the sake of residency and apartments. We immediately grant temporary residence and, after a while, permanent residence. After completing the PUTs, the people immediately begin as third-grade workers or, if recommended by the brigade leaders, even fourth-grade. Unfortunately, however, some of them quickly give up and I wonder if such already mature people do not feel ashamed at wasting the efforts involved in their training."

During the first quarter of 1984 the PUTs trained 169 people and 122 graduated. Obviously, 47 were not uncomfortable in the least.

Here is the opinion of Milcho Todorov, another instructor who trains motor vehicle drivers of the "S" grade.

"Most of the people who come to us have been recently demobilized from the army. We also have Sofstroy workers who would like to acquire another skill. Some young boys would like to sit behind the steering wheel as quickly as possible. However, they soon realize that this is a difficult job. We have an aging fleet of motor vehicles and substandard maintenance. Unfortunately, few people are convinced that they will become good professionals."

Unquestionably, the choice of applicants for the PUTs should be more accurate. A number of loopholes remain open through which labor contracts can be violated. Once again we have a sharp contrast between the desire for a mass attraction of manpower, on the one hand, and the impossibility of ensuring a sufficient amount of skilled manpower, on the other.

Serious organizational efforts must be made for the Sofstroy DSO to resolve as soon as possible its difficult manpower problem. However, this is hardly the problem exclusively of the trust, nor should it be.

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CSO: 2200/177

INTERNATIONAL MOTOR TRANSPORTATION OPERATION IN EUROPE

Sofia TRUD in Bulgarian 24 Jul 84 pp 1-2

[Article by Mira Radeva and Darania Yaneva, Vienna-Sofia: "The Inscription Reads 'Bulgaria'." The acronym SOMAT stands for International Motor Transportation Economic Trust; frequently another acronym is used instead: TIR--Transport International Routier]

[Text] It is said that every 30 minutes one could come across a truck belonging to the Bulgarian International Motor Transportation traveling along the main highways of Europe. Whether this is true or not can be determined by traveling several thousand kilometers on the highways of the old continent. It would be easier, however, to spend no more than a few hours with the official on duty at the Bulgarian-Austrian Demand company in Vienna, which manages the SOMAT motor vehicles in Western Europe. He claims (this has been checked) that he gets a telephone call every 30 seconds. The calls come mostly from the drivers of Bulgarian trucks on the road, representatives of various shipping companies, people from Sofia, and again drivers calling from Hamburg, the terminal in Pasau or Linz, etc.

Demand is on the telephone. This is not a Bulgarian name but a name well familiar to nearly 300 companies throughout the world with which SOMAT maintains business and trade relations. "Hello, I am listening..."

This time there was real cause for concern. The belt of the refrigeration unit of truck SSh 30-84 had broken. The truck was hauling 17 tons of meat from the Netherlands to Iran. Unless urgent steps could be taken, in just a few hours the load would be unsuitable for consumption. Actually, this did not happen. It is not in vain that SOMAT has the reputation of being the largest and safest hauler of goods in all seasons and in all directions in Europe and the Middle East and the fact that it maintains proper relations with its customers and always guarantees high quality transportation. Demand: the assisting unit of SOMAT in the Austrian capital, plays a major part in the operation. Now as well, with its help only one hour later Khristo Takev, the chief of the service base of the trust in Vienna, delivered the required belt.

Both directly and with the help of its branches in Western Europe, Demand is in steady contact with more than 35 shipping firms. It supplies them with

the motor vehicles they require and processes the holding documents for the goods. The purpose is to achieve maximal participation in taking loads by simultaneously following conditions on the international market, the market circumstances and the prices and increasing the turnover of the vehicles and reducing their idling to a minimum.

But let us leave behind us Vienna, calm and beautiful Vienna of the music of Strauss and the unique Prater (one shudders by looking from its top at the huge city!) and let us become businesslike. Let us take off with a SOMAT vehicle. We chose a relatively short route starting from Purvomay to Austria, hauling tomatoes (attention, the truck is not refrigerated, which means that an additional requirement is not to spoil the goods!).

We reach Yugoslavia after the inevitable customs and border checks. We are traveling at the maximally permissible speed of 65 kilometers per hour! Meanwhile, SOMAT has already sent a telex to Demand, stipulating the load and the schedule. The company has quickly established contact with the shippers in Western Europe. Furthermore, it has established current tomato prices and is shipping the tomatoes where the marketing opportunities are the best. It has also charted the most efficient itinerary for our truck, taking into consideration the fees for crossing different countries, the spoilable nature of the vegetables in the trailer, the heavy rain and who knows what else.... However, we were to learn all of this at the Spielfeld border bureau on the Yugoslav-Austrian border.

Similar Demand bureaus may be found throughout Western Europe, in Helmstedt, Schwarzbach, Waithaus, Nickelsdorf and elsewhere. Therefore, from Spielfeld we were directed to go to Munich. We obtained permission to cross Austria. However, we were unlucky. The truck's generator burned out. However, this did not bother our driver Ivan Stoitsov in the least. He stopped at the nearest gas station and phoned the Demand service base (such bases are spread throughout Europe, they are known as terminals) and only 2 hours later a service truck reached us. The Bulgarian tomatoes reached the tables of Munich housewives in good condition.

The load which the truck hauled on its way back was totally undemanding: household refrigerators. However, again we needed the assistance of Demand: in one of the terminals in Waithaus we had to move them under the strict "eye" of a special scale which weighed the axle load. This load must not exceed 10 tons per axle, for this is the maximal permissible limit for Hungary. Then, once again, we were on our way to Sofia.

Meanwhile, the complex and responsible work of the company went on at its usual pace and, as usual, concentrated on the main thing: to preserve the reputation gained by SOMAT (let us not forget that the organization dictates hauling prices for all of Europe!) and having loads in both directions. Naturally, this represents maximal economic profits for our country but is quite difficult to achieve. The transportation services currently offered throughout the world exceed the volume of the freight to be trucked. The international situation as well has a major impact on efficient trucking.

Let us consider unemployment in the Federal Republic, which is impressive: more than 2.5 million people are waiting for jobs. Furthermore, lengthy strikes cannot fail to affect the quantity of output which, unquestionably, drops. This, in turn, reduces the amount of freight to be trucked.

On the other hand, the war between Iran and Iraq adversely affects the purchasing power of both countries. In Salzburg, meanwhile, hundreds of trucks of companies from other countries, which have been idling for months on end (to the advantage of the coffee shop which is making a fortune in coffee and sandwiches!) are ready to take off. Another worse feature is that they are ready to load up their trucks at a minimal rate and to take off immediately. In other words, they are seriously undercutting international trucking prices.

Nevertheless, every week about 1,000 loaded SOMAT trucks are rolling steadily on the highways of Europe. This means that the Bulgarian motor transport system is economical and efficient. It also shows the interest in it on the part of European merchants, and the trust in, open preference for and reputation of Bulgarian trucks. A group of Bulgarian officials in Austria are concerned with preserving this reputation night and day. Against the background of huge posters of bureaus, banks, stores and travel agencies which try to convince us that if we eat precisely thus and such we shall live a long time, or that we must take insurance immediately, travel to Hawaii or use a certain washing detergent, the label carrying the foreign name Demand, hanging on a street in Vienna, seems quite modest. This is yet another proof that the form does not always agree with the content!

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CSO: 2200/176

## AGROINDUSTRIAL UNION ASSESSES RESULTS, OUTLINES TASKS

Sofia KOOPERATIVNO SELO in Bulgarian 25 Jul 84 p 1

[Report: "Full Mobilization for the Implementation of the Plan"]

[Text] The second half of the year is decisive in terms of the results of agriculture and the food industry. A detailed study of the implementation of the plan for the first half of the year was made and steps were earmarked to be taken by the economic organizations for the successful completion of the year at the expanded session of the NAPS [National Agroindustrial Union] Central Council Executive Committee, which was held yesterday under the chairmanship of Aleksandur Petkov, chairman of the NAPS Central Council Executive Committee. The meeting was attended by the chairmen of OAPS [Okrug Agroindustrial Unions], the general directors of DSO [State Economic Trusts], NPO [Scientific Production Trusts] and NPSK [Scientific Production Agricultural Combines], senior personnel of the Bulgarian Trade Unions Central Committee, the Central Committee of the Agricultural and Food Industry Workers Trade Union, the Agricultural Academy and others.

Kiril Malinov, NAPS Central Council first deputy chairman, emphasized that despite the poor legacy of 1983 and the adverse spring, most NAPS units are fulfilling their 6-month assignment. The most successful were the Vegetable Oils and Protein NPSK and the Mechanization and Technical Services to Agriculture Cooperation and Ruse, Razgrad and Stara Zagora Okrugs.

However, the achieved indicators are unsatisfactory and some of them have even declined. The production facilities of Bulgarplod and Rodopa and agricultural production in Varna, Vidin, Mikhaylovgrad and some other okrugs have fallen behind. Although many decisions and steps were taken, substantial results were not achieved. Some okrugs and APK [Agroindustrial Combines] have not accomplished the expected upswing.

Harvesting is drawing to an end and, once again, the different types of concern (rather than available possibilities) of brigades and farms were noted. Yield disparities in some places range from 200 to 400 kilograms per decare. Disparities also exist in the care for and condition of the spring crops. Obviously, were this situation to continue, the agricultural organizations would be hardly able to fulfil their annual plan and to compensate for losses in previous years.

What should be accomplished henceforth, during the second half of the year? All efforts must be concentrated on implementing the state assignment for grain production. Organizational efforts must be switched from the harvest to the autumn campaign. Before that, by 15-20 August, the straw must be harvested and the stipulated volumes of straw must be procured for the plant in Miziya and for the nonproducing okrugs. At the same time grain purchases must be completed as well.

The weather will remain warm and dry. This indicates even more strongly the great possibility of the properly organized night and day watering of farm crops. However, with the exception of Plovdiv, Varna, Kyustendil and some other okrugs the pace of irrigation remains unsatisfactory. Veliko Turnovo, Razgrad, Silistra and other okrugs have fallen behind with the second watering of the corn. The situation can be corrected only with an excellent organization of night and day operation of irrigation ditches. The pumping stations must work day and night. Care for the second crops must go on on a parallel basis. Otherwise, we shall be unable to procure sufficient silage for the livestock.

Exceptional steps must be taken also to fulfil the animal husbandry plan. Some of the unsatisfactory results are due to objective difficulties. In most cases, however, reasons are organizational and totally unjustified.

Considerable work must be done by the food industry. It is synthesized essentially in increasing output for the domestic and international markets. The food industry can fulfil its annual task, the more so since its development reflects to a great extent the fulfillment of the December program for improving the living standard of the people. We must now confirm new schedules and work systems for processing industry enterprises and increase the output by at least 10 percent compared with the same period in 1983. Without this the so greatly desired positive changes cannot be expected.

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CSO: 2200/176



MAINTENANCE SERVICE IN AGRICULTURE CRITICIZED

Prague RUDE PRAVO in Czech 2 Aug 84 p 5

[Article by Eng Dalibor Vitek, People's Control Committee of the CSR:  
"How Do Services Serve Production?"]

[Excerpts] With the development of agricultural production concentration and specialization, agricultural enterprises to a constantly greater degree are setting aside certain operations as specialized enterprise services. They are supposed to assist progressive development, increase the productivity of labor and the volume and quality of production, and thus contribute to the industrialization of agriculture. Party and state organs place particular emphasis on raising the quality and efficiency of the services along with a high level of social effectiveness.

The construction of agrochemical enterprises began more than 10 years ago, but so far we have not yet created the material conditions for their operations. This is primarily a matter of securing enough suitable storage capacity for industrial fertilizers and providing mechanized means of applying them. The inadequate storage capacity results in overflowing. Fertilizers are stored in such a way that they get mixed together and lose their quality. This interferes with the proper application of industrial fertilizers on a scientific basis. With spreaders and other equipment in short supply often the operations are not carried out at the proper time.

The technical condition of sprayers is especially bad. Sixty-five percent of the machinery checked out by workers of the Central Control and Experimentation Institute of Agriculture had been fitted out with the wrong nozzles, badly adjusted, or had other deficiencies. How will this affect the crop protection? It reduces the biological effectiveness of the preparations, they will be wasted while, on the other hand, there are still places in the fields not adequately treated. Neither can one ignore the effect of contaminating the environment. In order to rectify these problems, in 1982 the CSR Ministry of Agriculture and Foodstuffs decided to introduce mandatory control testing and calibration of sprayers, but it was not until this year that the Central Control and Experimentation Institute of Agriculture and the JZD [unified agricultural cooperative] Turany took the initiative to prepare the required test equipment for production.

The above-mentioned perennial problems are being taken on by the current system of involving the agrochemical enterprises and their workers in the services that are being provided. The vast majority of them are still offering material incentives for the amount of work performed, which is the number of hectares treated, the amount of fertilizers applied, etc. But the yardstick for the services offered should be their quality, which is demonstrated by the effectiveness of the actions taken. To date, however, there has not been any material incentives for the effectiveness of the services.

We have a long tradition of providing services in the repair of agricultural equipment. This year the machinery and tractor stations celebrated their 35th anniversary. They have become an irreplaceable part of socialist agriculture. The overall volume of services grew especially fast in the Sixth and Seventh 5-Year Plans. But there are still a number of unresolved problems which should have already been taken care of in accordance with decisions by party and state authorities. In particular, there is the goal of creating an integrated system of taking care of agricultural equipment by utilizing the repair capacity of both the production economic units of the STS's (machinery and tractor stations) and the Agricultural Machinery Repair Plants, as well as those of the agricultural enterprises. The economic operating method of the enterprises' services has not yet been resolved either.

The plan sets a rather high level for performance volume and profitmaking. Attempts to meet these goals lead to prioritizing those operations which give high returns and are economically the most advantageous from the standpoint of the enterprise. This shows up, for example, in the high proportion of general overhauls, where the return is almost 20 percent. Other repairs (routine, intermediate, post-seasonal) with a return of 0.5 percent are not provided to the necessary extent and do not meet the needs of the agricultural enterprises.

The quality of the repairs performed is also in many cases the subject of justifiable criticism. One of the reasons for this is imperfect technical control which does not meet the requirements established in Principles of Control in the National Economy and in state administration document No 66/1982 of the SBIRKA. Most of repairs are also carried out by the same production workers who are materially rewarded for the economic results.

All these individual deficiencies have had the result of making the agricultural enterprises dissatisfied with services at the repair plants and as a practical matter have led to duplication of repair shop capacity. The agricultural enterprises have built their own workshops independently of the STS's so that they are able to take care of the maximum number of repairs through their own resources. But this leads to dispersion of personnel and equipment.

The information gain by checks can be summed up by the conclusion that the services examined are obsolete in their development to the level of large-scale agricultural production and do not meet fully the needs of the agricultural enterprises.

In order to resolve the deficiencies, the CSR Ministry of Agriculture and Foodstuffs has decided to work out principles for putting the material incentives for the organization of services into the area of the effectiveness and quality of their operations and to set up and validate a guarantee system for the services and to do this by the end of this year. During the course of the year it will also resolve the question of repair plant prices so that it can be included in the plan for developing wholesale prices for 1986.

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CSO: 2400/409

HUNGARIAN ECONOMISTS FORESEE DIFFICULT FUTURE

Stockholm SVENSKA DAGBLADET in Swedish 4 Aug 84 p 5

[Article by Richard Swartz]

[Text] Budapest--"We are now in the most difficult situation since we began our reforms in the late sixties."

At first, this sudden pessimism is surprising. Is the Hungarian Economic Reform (NEM) really in more trouble now than when it was initiated in 1968, the same year the Prague experiment was stopped? Or in 1973 when oil price hikes and opposition from orthodox groups within the party and government joined forces to interrupt the reforms for several years?

But SVENSKA DAGBLADET's source belongs to the inner circle of those in power. His concern for the future was a recurring theme in a long series of conversations. The tense international situation, uncertainty as to how the Chernenko group in Moscow will view the reforms and experiments, and a feeling of having reached the limit of possible changes in the socialist system seem to have the reform politicians in Budapest more perplexed than ever: perhaps not over the course itself, but over their ability to hold their course straight and steady.

Back To 1968

"I believe we have returned to the same situation we had in 1968 when we started the reforms," said Imre Pozgai who is head of the Patriotic Front, an umbrella organization that includes a number of political institutions. "Real wages have been falling for several years now and more and more people are blaming the reforms themselves. There is a danger that many, especially young people, will turn their backs on our policies and on the system itself if we are unable to reverse this trend soon. I am talking about economic growth: we simply must have some wealth to distribute! As a result, we have little room for retreat when it comes to our standard of living."

Reduced Living Standard

Of course, those who are hardest hit by the declining standard of living are the large groups of pensioners and young people. This also places a heavy burden on the "middle generation," which often must assist retired parents and help the

children obtain a small apartment and a start in life. There is little understanding among young people for the increasing difficulties: they do not remember the revolution of 1956, they do not understand how isolated reform-minded Hungary is in the East, and until recently they took steady improvement and "liberalization" for granted.

"The naivety and lack of interest in politics among our young people is a serious problem for us," one Central Committee member sighed. "Many of them even fail to understand that the Russians will stay here whether we like it or not."

At the same time, however, the Hungarian Communist Party has one thing to its credit that no other party in Eastern Europe has: it has introduced a kind of social dialog through which it is able to inform the people of why price hikes are necessary and why the standard of living is on the decline.

"Our people understand and accept the fact that the purpose of our actions is to safeguard the achievements of our reforms," said Janos Berecz, editor in chief of the party newspaper NEPSZABADSAG.

According to Pozgai, openness and tolerance in Hungarian society are politically stabilizing factors, apart from the material sector. In addition, he said, most Hungarians compare themselves to their neighbors in the East, rather than to the West (although this concept seems to be official wishful thinking).

#### Workers Appoint Plant President

The need to make the pie larger and to reverse the downward trend in the standard of living was behind the decision which, as usual, was made silently last April, namely to continue the economic reforms. These reforms contain purely economic elements but, for the first time, they also contain elements of radical political democracy: regulations for self-administration and company councils whereby, in many cases, the workers themselves can appoint their own plant president.

As is usually the case with Hungarian reforms, the proposals are vague. The political conditions at a given time will determine how they are put into actual practice.

"Nevertheless, it is important that all this is being institutionalized," Prof Ivan Berend, one of Hungary's most prominent international figures in the field of economic research, told SVENSKA DAGBLADET. "If these decisions are not watered down, they will mean that, for the first time, management will not be responsible solely to a government ministry. For too long now, the state has confiscated profits from good companies to support the bad ones. Now subsidies will be further reduced by first converting them to credits and finally by closing down plants that are unable to hold their own. That would be the same as declaring bankruptcy--and it remains to be seen if we have the courage to do so.

## Bankrupt Companies?

One Central Committee source said, however, that some bankruptcies could occur as early as this year. If so, this would be the first such case in Eastern Europe. In the future, the source said, subsidies will continue to be used only in agriculture, mining, and metallurgy--especially in the highly unprofitable steel industry, which was built during the Stalin era of the fifties.

Exceptions to the anticipated self-administration will be large-scale industries, companies in the healthcare and defense sectors, and companies producing exports to meet SEV (Council for Mutual Economic Aid) agreements. SEV is the organization for economic cooperation among the socialist countries.

Of course, these are the major industrial sectors. The remaining firms are small, but in the future they will have company councils representing workers, management, as well as party, labor, and youth organizations. The councils will settle all "strategic issues." In the smallest companies, the workers themselves will select their company president and, in the future, the authorities will only exercise "control at the macroeconomic level."

## Bitter Debate

Imre Pozgai added, however, that the authority to tax, establish, and reorganize companies would remain with the ministry. In certain cases, the Industry Ministry could use its veto right if the workers chose a company president who was considered inappropriate.

This new NEM phase was drawn up at the plenary meeting of the Central Committee last spring, but details of the reform are becoming known only now. Well-informed sources say that differences within the Central Committee between supporters and opponents of the reform were more profound this time than ever before. A bitter debate occurred behind closed doors. The debate was not reported by the press and, as usual, it ended with a "Kadarian compromise." But the recurring official assurances of the past that the Central Committee was in agreement on all but certain details of the reform were hardly accurate this time.

To the more cautious and conservative reform politicians, the technical changes in the tax system are more important than the democratic elements.

"I know how difficult it is to run a company and what bad experiences they have had in Yugoslavia," one of these politicians told SVENSKA DAGBLADET. The radical reformers, on the other hand, see it as a "reform of the reform," which is crucial to the new stage of the NEM.

"I believe we still have room to develop socialism within the current framework," Imre Pozgai told SVENSKA DAGBLADET. "If I am wrong, then we are destined to be a brief footnote in the history of our country."

## KATOWICE PZPR PLENUM DEBATE ON WAYS TO BOOST EXPORT SALES

Katowice TRYBUNA ROBOTNICZA in Polish 31 Jul 84 p 3

[Article by Aleksandra Chmura: "Export At Any Cost?"]

[Text] Should we take the very food from our mouths in order to sell in the foreign markets? Does a country as industrialized as Poland really have to earn foreign currency chiefly through sales of coal, copper and sulphur, and generally speaking, at any cost? Are the people representing industry, the hundreds of thousands of engineers and economists, not ashamed when they see our country reduced to the role of a supplier of raw materials, simple industrial products and food?

These questions, which are not rhetorical in the least, were voiced by a participant of a July plenum on exports organized by the party's provincial echelon in Katowice. One can safely say that these questions worry many people, not only economists and not only those who are directly responsible for export production or foreign trade. After all, our participation in the benefits from international labor distribution in general, and the rate of our overcoming the crisis in particular, depend on the quantity and quality of our exports. In a word, the conditions of our development and the quality of our lives today and tomorrow depend on it in an important way.

Without overestimating the multi-topical discussion of the party body in Katowice, one must nevertheless reflect on the problems discussed there and the great number of concrete motions submitted, particularly since the working Team on Foreign Trade in the PZPR Provincial Committee in Katowice presented a set of questions important for the development of export production in our region prepared on the basis of the discussion and motions submitted to the protocol. The problem of barriers to the growth of export of processing industry products, mainly the electromachine industry, appears to be of primary importance. This problem, assuming dangerous dimensions and worrying ministers and employees of enterprises, characterizes the whole of the economy. Although this is a key problem, it nevertheless is only one element of a broader issue, namely, of Poland's long range export-

import policy, the strategy concerning it, and the specialization of the Polish processing industry in selected areas of production, something that could assure our country a proper place in the international market appropriate to its creative potential.

It must be admitted that its place is embarrassingly low. In 1982, the participation of Poland in world exports significantly declined, from 1.1 percent in 1979 to 0.6 percent. As a result of the generally known negative phenomena of the anarchization of the economy, Poland fell in the world list of exporters from 16th to 39th place. It is true that in the past year results were achieved that were accepted as satisfactory, and the first half of the current year seemed to consolidate these positive trends. They do not concern the electromachine industry as a whole, however, even though there are exceptions.

One should also mention the significant participation of Katowice Province enterprises in national exports, amounting to 25 percent in the past year. It is impossible not to pause here over at least two facts. First of all, hard coal constitutes over half of all of Katowice Province exports, of course, and secondly, in Katowice Province as many as 358 enterprises count themselves among exporters. Among those factories, 15 export 87 percent of the region's production. Naturally, the Center for the Sales of Coal heads this list. In the foreground are exporters selling products valued at several billion zlotys a year: the Katowice Steelworks, the Trzebinia Metallurgical Works, the Bumar-Labedy Mechanical Machinery Combine, the Small Car Factory in Tychy, and the Mera-Ster Steering Systems Scientific-Production Center.

Does this concentration of export production prove that the fifteen Katowice Province factories are already realizing the generally expected requirement of export specialization? Certainly. What, however, should one think of export possibilities for the other 343 Katowice Province enterprises; do they export what remains after supplying domestic buyers? Namely, do they sell whatever is left, and only enough to secure for themselves an appropriate supply of hard currency in the form of foreign exchange allowances? In any case, the statements of Comrade Dr Tomasz Hermanowski of the Economic Academy in Katowice, delivered at the joint session of the Commission on the Reform and the Team on Foreign Trade in the PZPR Provincial Committee in Katowice, are worthy of attention: "From the course of the discussion, from the submitted motions and accessible materials, it results that in the next five-year plan, after the end of the period of rebuilding the level of exports, it will be necessary to depart from the so-called 'balance thinking,' which leads to the export of rather sporadic surpluses of products, on behalf of working out a long-term strategy of export development. Without such a strategy we cannot dream of improving the position which Poland occupies in the international distribution of labor. Nevertheless, the question remains, to what degree ought this strategy be the result of actions undertaken by independent enterprises and to what extent the result of decisions of the center for managing the economy."



Precisely this problem, not at all simple, was the subject of the greatest number of statements and concrete motions, namely over 35 out of over a hundred that were submitted in the course of the July plenum of the party Provincial Committee. The need for an export specialization of enterprises and regional branches was postulated, and the possibilities of using considerable reserves in this field were pointed out. At the same time the need for a modernization of the existing equipment of the exporting enterprises, whose assets undergo a continuous decapitalization, was pointed out. One must not close one's eyes to the fact that some managers cannot cope with the requirements resulting from the reform of our economy, which becomes particularly acute in view of the increasing competition on the foreign markets, and this was openly brought up at the plenum. This critical evaluation, confirmed by polls and a review of export results in 57 enterprises of Katowice Province carried out before the July plenum, concerns both the cadres of the industry and of the foreign trade apparatus.

It is therefore no wonder that the next largest group of motions (23) was connected with the functioning of the new rules of the economic game, including the system of economic incentives for the manufacturers of export products. The pluses of the foreign exchange allowances account (ROD) were clearly emphasized. The fact that the possibilities of using the foreign exchange earned by the enterprise are still treated as a bonus, and the lack of a direct relation between the export results and the employee wage fund, were of course put to the question. In this context, the motion that a definite allowance be used on the wage fund for each dollar or ruble earned through export, sounded interesting. The suggested form of "zloty allowances accounts" designed as incentive awards for the exporting firms' work forces and cooperating firms could also constitute a good incentive. This could be, perhaps, a form of award for those who already have reached a high level of export production and as a result have no possibility of increasing any further its quantitative level, which is the priority at present.

The representatives of exporting enterprises rather critically evaluated the bank credit policy, which still is not flexible enough. They also criticized the equal treatment of the different profits (financial results) obtained from the export production on the one hand, and the production for the domestic market, on the other. After all, transaction prices and domestic prices are nearly completely different parameters. Thus reducing them to a common denominator is a misunderstanding, and, what is worse, often an anti-incentive for the development of exports.

However, the opposite also takes place. How else can one understand, for example, the calls for the coal mining machines industry or the producer of minicomputers to satisfy the needs of domestic consumers first, and push the export of surpluses second... Certainly, collaboration or cooperation with interested foreign contractors, or even selling of licences to them for the production of equipment lacking in Poland, would be a favorable solution. After all, Polish mining has a world reputation, earned not only thanks to tons of exported coal, but also thanks to reliable machines and the world

level of technical solutions. Perhaps we should take more effective care to gain profits from this... It would require, however, much more dynamic and expansive actions of the producers and foreign trade employees in this and other fields of the machine industry. Independent enterprises should not be alone in this regard, particularly in view of the increasing demands and sharp competition in the world market. As many as 17 motions concerned precisely the mutual relations between the industry and foreign trade, which need to be tightened.

Despite rather troublesome material-technical shortages and gaps in supplies, partly as a result of Western sanctions, enterprises have been able to cope with those difficulties, something that, among other things, was testified to by the moderate number of issues raised in this regard. On the other hand, the primary problems on which export growth depends seem to be enclosed in a specific triangle of interdependence: the technical level and quality of export products, and the profitability of exporting them. As a matter of fact, the successes in this triangle are decided by the producer: the concrete work in the enterprise, the climate around the matters of export, and in sum, the attitude of employees conscious of the significance of this economic activity, its effects for the country and for the concerned work force. Failures here, according to the opinions presented, result from the inner weaknesses of enterprises.

For this reason, in order to popularize attitudes commonly defined as "proexport," in order not to waste the valuable considerations and concrete suggestions of the participants in the July plenum of the party Provincial Committee in Katowice, following their careful analyses, they will be passed on to proper echelons and institutions for the purpose of implementing them in economic practice or using them in a different manner. Their authors will receive concrete information about the fate of their motions. We shall also return to them in the columns of TRYBUNA ROBOTNICZA. Although one often hears the opinion that the average person takes interest in the export problems of the Polish economy only insofar as they concern his daily bread, in fact they determine not only whether there will be butter, but also sausage for this bread.

12270  
CSO: 2600/1155

## EFFECTIVE APPLICATION OF WAGE SYSTEM DISCUSSED

Warsaw NOWE DROGI in Polish No 6, Jun 84 pp 148-152

[Article by Ryszard Zabrzewski: "Consultations: Wages as a Political Economic Category of Socialism"]

[Text] The recent 14th Plenum of the PZPR [Polish United Workers Party] Central Committee dealt with the necessity of devising and applying a wage system which will both contribute to increasingly complete realization of social goals and will become an important factor in heightening the social effects of labor.

Socioeconomic practice has shown that this is a highly complex social and psychological as well as economic category. Its use as a parameter of the mechanism of operation of the economy or as an instrument of economic policy is determined by its essential nature, limiting factors, and social and economic effects.

Wages belong to these economic categories and simultaneously to socioeconomic policy linking together the phenomena of production, distribution, and consumption. Hence their complexity and involvement in a variety of phenomena, both economic and above all social. Wages occurred sporadically even under slavery and feudalism. Under capitalism they were transformed into the predominant form of income of the proletariat. Wages always appear as the "cost of labor" on the surface of phenomena. The anticipated labor and its quality and quantity in relation to the amount of remuneration are the subject of the contract between the worker and the capitalist. The wage level is in this case determined by the value of labor rather than by the value of the products manufactured. War is waged over product division among owners of the factors of production. Under conditions such that the production factors are of the nature of commodities, the relationships in distribution of the national income are determined by the value of labor, capital reproduction needs, and the magnitude of consumption by capitalists.

The degree of complication and involvement of wages becomes far greater when "time runs out on capitalist private ownership. The expropriators are expropriated." The exploiting class and its material base, capitalist private ownership, then disappear. The fundamental forms of ownership then

become state ownership (the state represents the interests of the working class and other laboring classes and strata) and cooperative ownership; municipal ownership is also possible. Hence the right to sharing in distribution of the national income created must be gained through labor (also, it is true, by "need," but within predetermined limits) and not by ownership.

In the view of the classic writers of Marxism-Leninism, under socialism wages must be made to depend predominantly (allowance must be made for the severity of working conditions and insufficient labor supply in relation to demand) on the quantity (expressing both extensiveness and intensity of labor) and quality of work performed by the individual or collective on behalf of society. In its turn society makes available to the individual, through wages, the resources needed for meeting his consumption needs.

A formulation of the essential nature of wages under socialism must take into account the commodity and monetary character of production and exchange, and also the predominant role of individual consumption and freedom of choice of the kind and place of work by the individual. As a result, under socialism it is not possible to give such a limpid definition of wages as that formulated by Karl Marx for capitalistic conditions, that is, as the price of labor which the capitalist pays to its owner, the worker.

According to one of the earliest formulated definitions, wages under socialism represent "the share of the worker in terms of money in the portion of the social product which is allocated for individual consumption and is paid to blue-collar and white-collar workers in keeping with the quantity and quality of the work of each of them"<sup>(1)</sup>. This definition, however, does not make a clear enough distinction between wages and other forms of income. A number of new definitions of wages have been devised since that time. W. Krencik calls attention to the following<sup>(2)</sup>:

- wages are the concrete form of income deriving from a person's own work, but not work performed with his own means of production;
- wages are a concrete kind of individual consumption income;
- wages are recognition in the form of payment, specified by the state in a schedule, of the work of a free person in a state enterprise, a person who is not the exclusive owner of the means of production;
- wages are a form of sharing in the general national consumption fund and part of the value created by the enterprise in which workers are employed;

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(1) "Ekonomia polityczna" [Political Economy], Warsaw, 1949, p 557.

(2) W. Krencik, "Placa a wzrost gospodarczy" [Wages and Economic Growth], PWE, Warsaw, 1977, pp 46-47.

-- payment is a distribution category associated with the subordinate labor and commodity nature of individual consumption, which is dependent on preservation of the possibility of individual control of manpower under public ownership of the means of production and sharing in the common individual consumption fund due the worker by virtue of his work in proportion to the quantity and quality of this work.

There are many aspects of labor under socialism. They are an economic category, an element of the social goal of the economy, and an instrument of the socioeconomic policy of the state. Initially in the literature on the subject attention was called to two functions (the income and cost functions), while at present four functions are distinguished (income, cost, incentive, and social functions).

These functions characterize both the social essence of wages, and they also predetermine their effectiveness as an instrument of socioeconomic policy. Hence the importance of information about these functions, their nature, forms of expression, dependences, interrelations, and socioeconomic consequences.

The income function derives from the circumstance that workers as consumers are interested in obtaining the largest possible equivalent for their services in the sphere of labor. However, it follows from the logic of management that this equivalent simultaneously represents an element of prime and social costs. The striving of workers to obtain the highest possible income thus encounters the barriers resulting from the volume and actual structure of the national income created and the proportions and principles of its distribution. However, this striving has a motive force of its own, which is the necessity of satisfying the varied and growing consumption needs of the worker and his family. Wages, in making up the fundamental portion of the incomes of the family and of society as a whole, permit satisfaction of the consumption needs of individuals, single groups, and all society. Worker wages, in performing this function, also constitute an instrument for shaping the distribution of incomes among households (families).

The level and extent of need satisfaction depend on many factors, primarily development of the needs perceived by the worker and his family, as well as the size of the incomes available to them, the level and relationship of retail prices, the degree of balance of the consumption market, and social services received. The reason for this is that income from work, including wages, represent only one, although essential, factor determining the level, quality, and structure of consumption by individuals and society as a whole. Together with rise in incomes, including wages, the level and quality of consumption rise and the structure of consumption is improved. In addition, a rise in wages causes a substitution effect, which is expressed in restriction by the worker of the time devoted to his services for the sake of increasing his free time. We are speaking here of real incomes and wages. Their growth results from the nominal growth and correspondingly lower

growth (or decline) of the market price level. They determine the volume of goods and services which the workers can obtain for the nominal income or wages received for work.

The reason for this is that the effectiveness of wages depends not only on their amount, the level of wage increases, and wage techniques, but also on the other factors referred to, on desire to work and skill at work, and on organization of work itself. The volume of wages (and wage increases), on the other hand, depend on the productivity of live labor and the effectiveness of the means of production employed in the sphere of production. Correct performance of this function requires that the volume of wages be in proportion to the quantity and quality of work.

Under the socialist system wages, being a form of linking of individual and general social interests, also perform an incentive function. We note that interests and material incentives are closely interrelated economic categories. Incentives are concrete forms of expression of economic interests. Incentives, construed as a system of measures consistently applied in the spheres of production, distribution, exchange, and consumption, can ensure proper realization of economic interests and transform them into an important factor of economic growth.

Wages are also linked to the motives of human actions, as was stated at the beginning of the 1960's by Z. Morecka: "The effectiveness of incentives in the production and social sectors depends largely on the degree of adaptation of incentives to individual goals and motives for action"<sup>(1)</sup>.

At least 2 fundamental requirements must be met in order for the process of motivation to be set in motion:

- the result must be considered useful by the subject,
- the subject must be convinced that the result can be achieved under the given conditions. The importance of this process is expressed in the fact that it permits channeling of human actions toward the achievement of specific goals and social values. Wages can be utilized to bring about:
  - strengthening of willingness to perform given work,
  - increase in collective and individual labor productivity,
  - disclosure of untapped production potential,

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(1) Z. Morecka, "Man as the Object of Action of Material Incentives," "Człowiek w przedsiębiorstwie" [Man in the Enterprise], PWE, Warsaw, 1962, p. 60.

- introduction of technical progress and modern technologies,
- better organization of production,
- development of the desired assortment of goods and services,
- lowering of prime costs,
- establishment of socialist labor relationships.

The degree of differentiation and the form of wages can become motive forces in economic development and improvement in the welfare of citizens. However, this requires determination of the conditions and principles on which the level, proportions, and structure of wages depend. The concrete embodiment of these conditions and principles must respect the specific character of the sectors and plants and their importance in socioeconomic development. Proper performance of this function requires generation of interest on the part of workers in performing particular work. At the same time, it is to be remembered that material incentives have different effects on different people, and thus require establishment of correct relationships between incentives and individuals, social and professional groups, and environments.

Where there is no legal administrative compulsion to work, wages are the most important factor impelling able-bodied persons to take up work. This decision also entails such problems as selection of the job, occupation, and length of work period. Hence in determination of wages allowance must be made, along with the quantity and quality of the work performed, for the degree of social attractiveness of the job and profession and for the severity and dangers associated with performance of work, inconvenience and severity of the work period, and under labor shortage conditions the various problems created for the worker and his family by the necessity of changing job or profession. The processes of economic growth often require "vertical" as well as "horizontal" displacements of manpower.

In the case of "vertical" displacements wages are used to encourage workers to improve their skills, take on more responsible work, and climb the so-called ladder of advancement. This process is initiated primarily by the incentive function of wages. On the other hand, the function of wages as an instrument in displacement of manpower has to do essentially with initiating "horizontal" displacements of manpower, that is, between individual sectors, enterprises, and regions. Socioeconomic practice has proved that wages are the most effective means of initiating these processes.

Many aspects of a social nature are to be noted among the wage functions referred to. For example, one or another employment structure and one or another index of employment activity of individual families not only have a social aspect but cause preeminently social effects. Hence the singling out of their social function is conditional and covers all the social aspects of wages not covered by their other functions.

Since wages are above all an instrument for distribution of the basic portion of the national income, the consumption fund, they on the one hand express the new economic relationships, and on the other can be used to create and develop good work habits and the proper attitude toward fellow workers and the tasks of the enterprise or organization. By failing properly to appreciate this potential residing in wages, on the one hand we deprive ourselves of an effective instrument for development of socialist economic relationships, and thus also the development of productive forces, and on the other fail to realize the social and economic harm that may be caused by operation of a bad wage system.

The material source of wages, aside from a certain amount of influence exerted by the foreign trade balance, is made up in a given period by the national income and its division into an accumulation fund and a consumption fund. From the latter (the consumption fund) there are in turn to be deducted, firstly, the general administrative costs not attributable directly to production, secondly, whatever is allocated for meeting collective needs, and thirdly, the fund for persons unable to work. Only then do we obtain the portion of the consumption funds subject to distribution among individual producers. In this case, according to Marx, after these deductions have been made the individual producer must receive just as much as he has rendered to society. However, it has been found in the experience of the socialist countries that division according to labor never is and never can be carried out in a precise manner. As a result of the growing complexity of division of labor and scientific and technical progress, it is difficult to specify the labor contribution made by individuals or groups to creation of the national income. After all, only part of it, the product per se, forms the basis of payment of remuneration for labor. This remuneration in turn is converted to real wages by means of the market mechanism. The result of operation of the market mechanism is that the dynamics of real wages differs from that of nominal wages, and real wage proportions are not established in the same manner as are nominal wages. This circumstance results primarily from the influence of different accumulation in prices for different goods and the influence of the spending structure. In addition, in the absence of administrative compulsion to work and inadequate supply of "manpower," in order to attract workers to recently established enterprises it is necessary to set wages at a level somewhat higher than the wage level for enterprises already in operation.

It must nevertheless not be forgotten that too wide a departure of the actual volume and distribution of wages from the law of division according to quantity and quality of work cause economic disproportions, intensify clashes of interests, and even cause social conflicts. Hence wage policy, like wage techniques and organization, must come as close as possible to meeting the demands of this principle.

It follows from the foregoing reasoning that a complex wage system must achieve optimum linking of central regulation of wage phenomena and processes to the management of individual workplaces. Experience has proved that excessive domination of central regulation in this sphere has failed its test. But complete abandonment of regulation of wage phenomena and



and processes in workplace management also will generate economic disproportions and social phenomena (such as heavy personnel turnover) that are undesirable from the viewpoint of operation of the economy as a whole. In instituting the workplace wage system provided by the law of 26 January 1984, we must thus keep in mind the possibility of fairly radical displacements of manpower to plants and sectors which will offer higher wages. Since in the next few years there will be no great increase in the number of people of productive work age, this may cause a drain of manpower from plants manufacturing products needed to assure continuity of social reproduction processes. In instituting the workplace wage system provided by the law in question, we must not forget these apprehensions. It may be assumed that these apprehensions have made themselves felt, since Article 26 of the law in question compels the Council of Ministers to submit to the Sejm [Parliament] an evaluation of the operation of the new wage system in workplaces before a period of 2 years has elapsed.

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CSO:2600/1125

## FIRMS REACT TO EXTENDED BAN ON CONSUMER GOODS PRICE HIKES

Warsaw RZECZPOSPOLITA in Polish 6 Aug 84 pp 1, 2

[Article by DE: "Restraints on Contract Price Hikes Continued: the First Reactions of the Enterprises -- RZECZPOSPOLITA Survey"]

[Text] For producers, the decision to continue the ban on price hikes of most industrial market goods, adopted a few days ago by the Council of Ministers, was not the end. It is an expression of an effectively conducted policy of counteracting an excessive, spontaneous rise in prices, and consequently "stemming" inflation.

Let us recall that as a result of just such ban on price increases on consumer goods, in force since April of this year, in the first half of the year, retail prices increased by only about 13 percent while the central annual plan for 1984 anticipated an increase in the order of 15-16 percent.

A telephone survey by RZECZPOSPOLITA indicates the reactions of the directors of plants to the continuation of the ban on price increases beyond a level justified by the increase in costs due to factors outside the control of the enterprises.

Hanka Knitting Mill in Legnice: "The annual value of our production," reports Bernard Kustos, chief director, "is approximately four billion zlotys. We make men's and children's underwear, and a small quantity of women's lingerie. About 30 percent of our production is subject to contract prices. We verify these once a year at the beginning of the year; for this reason we did not have any cases of price increases after the adoption in April 1984 of the resolution on banning contract price increases. For the same reason, keeping this ban in force plays no role in our case. Prices for goods already produced will not be changed before the end of the year. At the same time, we are continuing to introduce new lines into the market and their prices may be higher than the prices of goods of the same type that are presently being produced. There may be differences in the quantity of material used or they may be more labor-intensive, and this affects price calculations."

Pollena Household Chemical Plants in Paczkowo: "During the inspection made at the beginning of May," says Jerzy Luczynski, chief director, "the State Price Control Board questioned the prices of six manufactured items (laundry powders, liquids for dishwashing, pastes, etc.) that were increased within

the 18-25 percent range. These prices were confirmed on 23 March, and one product, Pomal powder, was being sold before the resolution on banning contract price increases became effective, that is, before 1 April of this year. Batches of the products questioned were already on outlet shelves after this date, but we had not yet received the MONITOR with the text of the resolution.

"On this basis, we appealed the decision of the State Price Control Board. The fines imposed on the plant were revoked. We maintained the increased prices for laundry powders, and decreased the prices of the rest of the products to a degree that would make their prices conform to the regulations of the resolution.

"In view of the continuation of the ban on price increases, we do not plan increases unless prices of materials go up. Meanwhile, we are thinking about reintroducing the production of the liquid, Merinos, which we dropped after 1 April. In household chemicals, prices are decided on the basis of material costs; our own costs affect prices only to a small degree. Merinos is very concentrated, is material-intensive and an increase in prices of materials required for production made it necessary to increase the prices by more than 10 percent. For this reason we gave up producing it; if it proves to be unremunerative after yet another calculation, we will not reintroduce it."

Polam Light Fixture Plants in Pultusk: "Continuation of the ban on price increases has not changed our plans at all. After the minor adjustments of prices made at the beginning of the year, we had no plan to raise the retail prices of our products," said Ryszard Stefanski, deputy director of production. "In spite of substantial increases in producer prices, we will be able to maintain relatively stable prices for our fixtures. It is enough to say that there has not been an increase in the prices of our basic production lines (desk lamps and sockets for quartz lamps, of which we are the only manufacturers) since prices were changed at the time the economic reform was introduced in 1982."

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CSO: 2600/1154

## PRECIOUS METALS PRODUCTION, RECOVERY PROGRAMS

Katowice TRYBUNA ROBOTNICZA in Polish Supplement MAGAZYN NIEDZIELA 3 Aug 84 p 4

[Article by Ireneusz Leczek: "In the "Polish Klondike": A Test of Ore and ... Character"]

[Text] In the fired interior of the furnace stands a ceramic crucible containing 100 kg of melted metal heated to a temperature of 1250 degrees Celsius. Dressed in heat-resistant suits, the workers approach the furnace bursting with heat and remove 25 to 30 kg of the liquid metal with hand ladles, then they pour the contents of the ladles into a preliminarily prepared form. After a few minutes, the metal solidifies, becoming, as the metallurgists say, a "pig," and then it is cast out of the form. I observed this activity with the director of the department who joked, saying: "If you can take the 'pig' out with one hand, then you can have it." Challenged, I tested myself with a metal bar that was so heavy, I could lift it only with two hands. Unfortunately, I could not get away with carrying out a bar made of 30 kilograms of 99 percent pure silver.

Such a bar is worth \$6000 on the international market. I look at a pile of silver pigs lying against the wall in the hall of the metallurgical plant in Trzebien. But the gold bars, called "beakers" and weighing seven or eight kilograms each, call much more strongly to the imagination. A single ounce of pure gold is worth \$350 on the international market. An ounce is 31 grams. The question: how much is a whole "beaker" worth? The computation gives one a headache.

From what do we get silver and gold in our country? How much of these noble and "seductive" metals do we produce? What are they used for?

There is no natural Klondike in Poland, rich in gold deposits as was the case at the turn of the 19th century in the Canadian locale alluded to. Historians tell us that at some time it was different. Traces of splendor remain only in place names. In Zloty Stok approximately 1200 years ago, Slavic Wendish tribes derived gold from arsenic ore. In about the 16th century, gold coins were cast there also. In the 12th and 13th centuries Zlotoryja and Kopacz were famous for gold production. And it's true that even today in these places, enthusiasts, seekers of gold ore, prowl about, but somehow there is no word of any of them becoming rich.

We are the producers of silver and on a relatively small scale, gold also. This production can be carried on in conjunction with copper ore mining in the Zagłębie Lubinskie area. In the 1960's geologists made the first tests of this ore and subjected it to laboratory studies. It was estimated then that each ton of ore contained 60 grams of pure silver. When the silver content in a ton was multiplied by the number of tons mined, the result was impressive. We were to become a silver power. Experience in industrial production proved to be much worse, although we produce quite a bit of silver.

The chemical composition of the copper ore is most variable. Silver content fluctuates from 25 to 60 grams per ton. Besides the silver, and, of course, the copper, this ore also contains the following metals: nickel, selenium, rhenium, cobalt, bismuth, tin, and gold. There is so little gold that its presence cannot be detected by chemical tests. In spite of appearances, gold is not the most precious component of copper ore. More precious than gold is rhenium, a metal used for production of incandescent lamp filaments, heat-resistant alloys, and coatings for high-precision implements.

The process of smelting copper is complicated and multistaged. In the course of the last stage, called electrorefining, in the Legnica and Glogow Metalworks, an anodic sludge settles to the bottom of the electrolytic tubs which contains significant amounts of silver and other metals. After drying, this sludge is transported to the Szopienice Metalworks for Independent Metals in Katowice. There the so-called "do-re metal," an alloy of silver and gold, is produced. At this point, selenium is also recovered, and shortly, bismuth will also be recovered.

The do-re metal is sent to the Metallurgical Plants in Trzebień where it is subjected to electrolytic processing that recovers silver. In this operation a sludge of gold compounds is formed. From it gold is smelted.

At the 1980 session of the Sejm, one of the representatives presented an interpellation on the subject of silver and gold production. Since there was a great difference of opinion between the speaker and the metallurgy department as to the content of gold in the ore and the degree of recovery, it was resolved to carry out a precise investigation. Chemical research methods, as I have said before, are deceptive, therefore the Nuclear Research Institute in Swierk made measurements using the method of neutron activation. The results were as follows: in a ton of copper ore concentrate, that is, ore cleaned after mining, there is one gram of gold. The yield, or recovery, of silver and gold from the ore is high; it amounts to 80 to 90 percent with several stages of production.

We produce several hundred tons of silver annually. We are the chief producer and exporter of this metal in Europe. More than half of the production is exported. We produce several dozen kilograms of gold annually, much less than our national needs require. Moreover, gold, in addition to adorning the fingers of elegant ladies, has wide applications in electronics, color photography, and pharmaceutical uses for production of antirheumatic medications. In speaking of the price of silver and gold on the world market, we

must not forget about the enormous costs of production, which is very complicated and involves a number of plants before the "noble" bars appear in Trzebien.

In observing the production of "jeweler's" metals in the metallurgy plants, I asked Adam Szpila, deputy director for technical services, about the specific problems of the plant. He guessed correctly that I was thinking most of all about the possibility of "leaks." The department is obviously well guarded and not open to casual visitors; the workers cannot go out during the work day, and at the end of the day, they are subjected to thorough search. Their honesty is not decided only by technical and organizational means, but mainly by the self-discipline of the workers. They find their way to the department producing noble metals after many years of work, let us add, exemplary work, in other departments; they receive significantly higher pay than formerly. Being tempted by so-called easy money, when someone is caught, means the loss of good pay, criminal responsibility, and in such a case, usually forfeiture of property as well. The game is not worth the candle.

As far as specific problems are concerned, one of them is occupational disease, silver poisoning, which causes silvery white eye coloring in metallurgists. Thus, it is obvious that casting gold "beakers" and silver "pigs" is not great good fortune, but hard work.

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CSO: 2600/1154

## BRIEFS

COAL MINE CONSTRUCTION PROGRESS--At the construction site of the new "Kaczyce" coal mine work has been completed on the installation of the No 1 cage elevator shaft, the deepest shaft in the Polish hard coal mining industry. This mine is being built in the foothills region 7 kilometers from Zebrzydowice. Shaft No 1 was excavated to a depth of 1,143 meters below the surface by specialists from the Mineshaft Construction Enterprise in Bytom. The shaft will be used to transport both miners and rock. Two cage elevator shafts are already in service that are used to transport crews from the Mine Construction Enterprise of Jastrzebie to the 950-meter level. Work is proceeding simultaneously on other shafts, i.e., the No 2 production-skip car shaft which has already been excavated down to 1,100 meters (the target depth is 1,213 meters) and the No 3 shaft, a ventilation shaft which has already reached the 950-meter level. Temporary ventilation and hoisting equipment are already in operation in the No 3 shaft, which will ultimately go down to 1,140 meters. This shaft will also be used to transport materials. On 22 August Gen Div Czeslaw Piotrkowski, minister of mining and the power industry, was briefed on the progress of work on the construction of the "Kaczyce" Mine. [Text] [Warsaw RZECZPOSPOLITA in Polish 23 Aug 84 p 1]

BOOSTING POLYPROPYLENE OUTPUT--Tests performed by PETROCHEMIA in Plock in collaboration with the Institute for Heavy Organic Synthesis in Blackownia Slaska on the feasibility of increasing polypropylene production have come to a successful conclusion. The firm MZRiO in Plock has already started working on making changes in the performance parameters of both of its polypropylene production facilities, changes that will pave the way for an increase in the production of this raw material even before the end of this year. Polypropylene is a high-demand product forming a vital ingredient used in the manufacture of household and other goods. It is expected that the first dividends resulting from these modifications should show up during the fourth quarter of this year. In honor of the 40th anniversary of People's Poland workers in both polypropylene factories have pledged to produce an additional 3,500 tons of this raw material valued in excess of Zl 272 million. [Text] [Warsaw TRYBUNA LUDU in Polish 10 Aug 84 p 1]

MINING MACHINERY, KNOW-HOW EXPORTS--Coal is our export sales specialty. We mostly sell coal as a raw material, while it happens less often that we make sales on machinery used to mine or process coal or design documentation and scientific-technical know-how used in the coal mining industry. And

even though the profits resulting from the raw materials transactions are quite considerable, it would still be more profitable to sell the know-how of Polish engineers and coal mining hardware. The KOMAG Center for Mining Industry Mechanization is trying to change this situation. This firm, which is doing design work for new mechanical miners, coal sifters, and other kinds of mining machinery, is finding customers for its products in both payments zones I and II. Its export sales lineup consists of both engineering design work and machinery adaptation documentation and, also, specialized services, including the assembly and installation of mechanized complexes. Thanks to the export sales programs of this firm that are geared toward sale of Polish scientific-technical know-how, the national economy this year has earned nearly 162,000 dollars and 51,000 transfer rubles. [Excerpt] [Warsaw TRYBUNA LUDU in Polish 8 Aug 84 pp 1, 5]

PORT POLNOCNY COAL HANDLING--Notwithstanding the seasonal overhaul of one of the conveyor belt loaders, this year's coal handling performance at Port Polnocny in Gdansk looks to be recordbreaking. Since the beginning of the year the Maritime Commercial Port in Gdansk, which also includes Port Polnocny, has processed more than 6,300 tons of coal for loading on board ships. This amounts to 80 percent of this year's production target. [Text] [Warsaw RZECZPOSPOLITA in Polish 22 Aug 84 p 1]

ARGENTINA DELIVERS NEW SHIPS--The Polish Maritime Shipping [PZM] firm reports that christening ceremonies have been held at the Argentine Astilleros Shipyard in Buenos Aires for two new ships destined for delivery to PZM in Szczecin. These are the MS "Ziemia Chelminska" and the MZ "Ziemia Gnieznien-ska." Both vessels have a cargo carrying capacity of 26,000 tons and are to be used for the shipping of bulk cargoes. The Argentine shipyard is building six similar vessels for PZM that will be added to the Szczecin tramp freighter fleet through 1985. All of these vessels are being built on the so-called "self-payment" basis, that is, without any need to effect payment in national currencies, under the terms of a coproduction arrangement with the Polish shipbuilding industry. These vessels are state-of-the-art bulk cargo carriers. [Text] [Warsaw RZECZPOSPOLITA in Polish 22 Aug 84 p 1]

THERMAL POWER PLANT CONSTRUCTION--Workers from the Silesia Power Plant and Industrial Construction Enterprise (general contractor) and specialists from several other firms working on the construction of the new "Katowice I" thermal-electric power plant are in the midst of wrapping up their work on the startup of this facility's process engineering systems. Two boilers with a combined output capacity of 240 gigacalories, heat that will be delivered to new housing projects in Katowice, will go into operation at this project site, of such great importance to the people of the Silesian region, during the 1984-1985 winter heating season. [Text] [Warsaw RZECZPOSPOLITA in Polish 22 Aug 84 p 1]

CSO: 2600/1216

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