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6 May 1983

East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2396

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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CONTENTS

REPORT ON INDUSTRIAL PRODUCTION IN JANUARY

Sofia IKONOMICHESKI ZHIVOT in Bulgarian 2 Mar 83 p 4

[Text] During January, the state plan for the production of products essential for the economy has been overfulfilled. The production of some of these products and the rate of increase, compared to the same month last year, are as follows:

Category	Production generated	Rate of increase, in percent
Electrical energy (in millions of kilowatt hours)	4077	106.0
Coal (in thousands of tons)	2916	107.2
Sheet steel--cold rolled (in thousands of tons)	58	109.5
Steel pipe (in thousands of tons)	24	107.1
Motor axles for "Liaz-Madara" (number)	1850	116.6
Electric trucks (number)	3494	115.8
Electric tools (number)	31031	103.4
Batteries (in thousands)	99	102.1
Polyvinylchloride (in thousands of tons)	11	168.6
Nitrogen fertilizers (in thousands of tons)	72	105.7
Oil paints and lacquers (in tons)	4825	124.5
Cement (in thousands of tons)	426	106.6
Large reinforced concrete panels (in thousands of cubic meters)	124	125.3
Asbestos cement slabs (in thousands of square meters)	340	100.3
Furniture (in millions of leva)	36	107.6
Domestic glassware (in thousands of leva)	3074	114.4
Domestic porcelain (in thousands of leva)	3174	124.9
Cotton fabrics (in millions of meters)	30	100.6
Woolen fabrics (in thousands of meters)	3207	100.2
Knitwear (outerwear) (in thousands)	4228	104.5
Tailored items (in millions of leva)	57	103.6
Meat (in thousands of tons)	36	99.2
Meat products (in tons)	6992	107.3
Sugar products (in thousands of tons)	10	104.4

Category	Production generated	Rate of increase, in percent
Butter (in tons)	1816	118.4
Cheese (in tons)	5413	112.4
Vegetable food oils (in thousands of tons)	21	125.6
Beer (in millions of liters)	23	118.4
Processed ripened tobacco (in thousands of tons)	14	107.3
Tobacco products (in tons)	7433	101.4

The economic organizations within the system of ministries and other administrations showed the following results from the implementation of the plan for commodity production:

Organization	Fulfillment of the plan, in percent
Total:	102.1
of this number:	
Ministry of Power Supply	101.7
National Corporation for the Chemical Industry	100.9
Ministry of Metallurgy and Mineral Resources	98.6
Ministry of Machine Building and Electronics	101.1
Ministry of Light Industry	101.6
National Agrarian and Industrial Union	104.8
Ministry of Construction and Architecture	102.8
Ministry of Transportation	102.2
Ministry of Communications	100.7
Ministry of Internal Trade and Public Services	101.8

Committee for a Uniform System of Social Information

During the first month of the third year of the Eighth 5-Year Plan, the results achieved from the fulfillment of the plan for industrial production are good. The increase, compared to January of last year, is 6.4%. This high rate of growth shows a better use of the fixed assets, material resources, and labor force that are now available for our industry.

At the same time, the analysis of the data shows that some old and constantly recurring weaknesses have not been overcome. Approximately one third of the enterprises lag behind in their indices of realized production. For industry on the whole, the implemented production is about 220 million leva less than compared with the generated production. One of the reasons for this is the arhythimical implementation of the plan assignments. For instance, during the last ten days of January, 44% of the commodity production planned for the month was produced.

The non-fulfillment of the plan for the production of some kinds of ferrous metals, machines, chemicals, and fabrics negatively affects important balances in the country. Certain enterprises and organizations within the sector of metallurgy and mineral resources and machine building have exceeded material and energy resources. This hinders the attainment of the planned profit from the savings of raw and prime materials, fuel and energy.

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OBLIGATIONS IN CONNECTION WITH APPLICATION OF NEW ECONOMIC MECHANISM

Wage Fund Control

Sofia IKONOMICHESKI ZHIVOT in Bulgarian 2 Mar 83 p 7

[Article by Danail Georgiev, Chief Specialist in the Central Management of the Bulgarian National Bank: "Bank Control over the Wage Fund."]

[Text] One of the main points of the system of the new economic mechanism is developing a Wage Fund as an effectively balanced quantity, in correspondence with economic results actually achieved. Hence, it is very important, from an economic point of view, to organize and control expenditures from this fund.

Decree No 29 of the Council of Ministers (1982) confirmed the "Directives for Consistent Compliance with the Regulations of the Economic Mechanism." Along with the positive results from the application of the new economic mechanism, the directives also note a number of violations, admitted mainly in connection with the formation of the Wage Fund.

The latter violations are in not adhering to the rules which determine the basic indices of setting the fund's upper limit and in their unequal distribution over certain periods.

In addition, some economic organizations and enterprises, in order to increase wages without having the proper resources, tend to use the consumer approach for setting incomes, which come not from the real contributions of the workers collectives, but from externally favorable factors, etc.

Such violations have also become possible on account of the insufficient control on the part of the state organs. By adopting the above directives, it was decreed that a system of regular state control should be formulated in order to comply with the established standards and regulations necessary for setting up and financing the Wage Fund. The above system should insure obtaining planned correlations between the rates of increase in the national income and the Wage Fund, between the rates of increase in social labor productivity and the increases in the average wage.

The Bulgarian National Bank will be assigned the leading role in the system of regular state control over the Wage Fund. It will be actively supported, in its activity on the national level, by the functional and specialized ministries, and on the local level, by the planning, financial, and controlling institutions of the peoples councils and the subdivisions of the Committee for a Unified System of Social Information.

The reason for assigning state control over the Wage Fund to the bank is its important role as a basic link in the economic management of the country. Control over expenditures from the fund's wages is one of the specific forms of control by means of the lev. It is closely related to the bank's function as a cash-issuing center, which regulates the currency and maintains the stability of the monetary unit. It is also known that the payments by the bank from the Wage Fund are the main channel for putting available money in circulation. This is very important in order to provide for an equilibrium between the quantity of money (purchasing fund) being issued and the quantity of goods and services (consumption fund) available to the population.

In order to carry out this important assignment, the Bulgarian National Bank has developed and is now applying measures for the overall improvement of the substance and the working of the bank's control over the Wage Fund. In order to give priority to this control, a significant reorganization of the bank's business is taking place. A qualitatively new type of bank control is being created, based on the principles of precaution, comprehensiveness, and personal responsibility. As a rule, bank control of the fund is prerequisite and takes place on the premises of the economic organizations and enterprises. It includes the preparation of financial statements, charts, and other accounting papers which are necessary for justifying the size of the allocated wage fund before their submission to the bank and the Committee for a Unified System of Social Information, and during the time after that, until the date for paying the salaries. Thus the bank employees participate actively and help the enterprises and economic organizations in the timely solution of the problems regarding the drawing up of the documentation in accordance with the requirements of the economic mechanism. All of this creates the conditions for uniformity in the accounting data submitted by the economic divisions of the bank and the subdivisions of the Committee for a Unified System of Social Information; it prevents surprises and returning documents for correction, and it provides for a well balanced and secure receipt of salaries on payday. The subsequent control over the documents after the salaries have been paid is of limited importance; its conclusions will be reflected during the next period.

For their part, the ministries, administrations, and economic organizations are obliged to comply strictly with the following requirement--the increase in the average wage should not outpace the growth in social labor productivity, calculated according to the plan. The above institutions should take measures to abide by the planned correlation between their growth when paying the workers' and employees' individual salaries, including as well the additional remuneration for the annual economic production results, the personal and target prizes, as well as to liquidate deficits in the Wage Fund and reinstate the resources used for this purpose as a loan.

In case of non-adherence to the planned correlation between the increase in social labor productivity and the increase in the average wage, the bank suspends payment of salaries for the staff in charge of the management of the economic organizations until the violation has been eliminated. When there is a deficit in the Wage Fund, the bank reduces the amount of the individual salaries of the managing staff and specialists.

During the course of 1982, not all economic organizations complied with these requirements. Thus it was necessary for the Ministry of Finance and the Bulgarian National Bank to take the appropriate measures: the overall activities of the economic organizations and enterprises for 1982 were thoroughly analyzed and estimated during the confirmation of their annual reports and financial statements. In cases of violation of the planned correlation between the increase in social labor productivity and the increase in the average wage, the stipulated sanctions shall be applied.

In the future as well, by controlling the Wage Fund, the bank will continue to contribute to the implementation and overfulfillment of the scales and indices approved in the plan for 1983 and the correct application of the soc socialist principle of distribution according to labor.

Workers' Responsibilities

Sofia IKONOMICHESKI ZHIVOT in Bulgarian 2 Mar 84, p 7

[Article by Vasil Kalaydzhiev: "Expanded Rights, but Also Responsibilities"]

[Text] The inseparable relation between the functions of the state as proprietor and the workers collective as manager was pointed out once again in the Principles of the Party Concepts of the Labor Code and in the closing speech of Comrade Todor Zhivkov at the Plenary Session of the Central Committee of the Bulgarian Communist Party in November, 1982.

The complete realization of the workers collective as a manager of socialist property depends on the exact regulation of its rights, obligations, and responsibilities. This question is also very important since it is directly related to the further development and improvement of socialist production democracy on an economic basis. It can be answered to a great extent by the normative documents for applying the economic mechanism. These documents define the rights of the workers collective to develop and endorse the counterplan for the activity of the brigade, the enterprise, and the economic organization as a whole.

It is very important for the collective to be able to participate in the formation and distribution of income. The economic mechanism regulates and gives the workers collectives the opportunity to express their opinion in regard to the determination of the norms and standards which are necessary in order to put cost effectiveness into practice, which enables the realization of the principle of self-support, ensures profits, and supplies resources for the different funds in the enterprises, which are needed for self-financing expanded reproduction, for social development, and material incentive. The broad use of

cost effectiveness provides the necessary conditions for the practical realization of the Party Concepts for a New Labor Code: the relationships among the enterprises, among the workers collectives, and between the latter and the individual workers, should have an economic basis with the appropriate rights, obligations, and responsibilities.

In the smallest production unit--the brigade--the workers collective alone distributes the wage resources among its members. Approval of the quota for worker participation takes place in the most democratic way--at a general meeting of the brigade.

The enterprises' collectives have the sole right to determine the amount of funds which will be spent in order to fulfill the plans for social development. According to the new approach, with every increase in the income of the population, each enterprise, each economic organization ought to provide not only for the Wage Fund but for the other funds as well. This increase in income, though, will come as a result of increased labor productivity, decreased cost price, and improved quality.

Through their increased role in the management of the enterprises and economic organizations, the collectives are able to attain their rights of socialist ownership. With the new economic mechanism, the nature and functions of collective have significantly changed the general (representative) meeting of the workers and employees, economic councils, and others. According to the requirements of the new economic mechanism, all the main problems of the overall activity of the enterprise must be resolved by the general (representative) meeting. The economic councils, as collective management organs are elected by the workers collectives and report to them about their own activity and the organization's activity. With the new Labor Code, these rights will not only be reinforced, but also developed and improved. However, this will only happen by adhering to the requirement of promoting the role of the leader in one-man management. This means a more complete coordination of one-man management and collectivity while discussing and resolving the problems related to the enterprise's activity.

The rights of the owner and manager should not be elucidated without regard to their obligations, which include most effective management, development, and growth of socialist ownership, and achieving high efficiency in the national economy, its branches, economic organizations, and their subdivisions. Rights, obligations, and responsibilities should be examined as a whole because an increase in rights means more obligations and more responsibilities.

Careful management is necessary so that the collectives can carry out their activity toward achieving the most efficient outlay of materials, energy, and financial resources in order to insure more productivity with better quality and lower cost. It is particularly necessary to pay attention to the maintenance and use of machines and equipment, to decrease mechanical failures and down time. Labor organization should be constantly improved and discipline should be strengthened. The point is to augment efficiency by using the three elements of the production process. This has to be a conscious and continuous

process of determining the use of the resources during the preparation of the extended plans as well as during their execution. Criteria for the efforts of the collectives should be attaining and surpassing the tasks defined by the October National Conference (1981).

The preservation and growth of socialist property means that the workers and employees, as its managers, should be utterly unrelenting in their opposition to all who misuse and waste it, they should participate actively in its further development and improvement. For this purpose, it is particularly important to make full use of all intensive factors and most of all, scientific and technical achievements, large-scale introduction of the best production experience, and increased education and training of the members of the collective, etc.

Clear theoretical formulations of the role of the workers collectives as managers of socialist property are available. An improved economic mechanism and the Basic Positions of the Party Concepts on the New Labor Code are available. Now it is important that people become aware and conscious of these formulations so that they can be applied in practice in everyday life. In other words, the workers collectives should function as actual managers of socialist property. As stressed by Comrade Todor Zhivkov at the Ninth Congress of Bulgarian Trade Unions, "The point is to create such conditions and such an organization, such an approach should be used, so that millions of people in our country--the working class, the agricultural workers, the intelligentsia--should be directly involved in the management of the economy, and the social and cultural processes for the building of socialism." By implementing their increased rights, as well as their responsibilities as managers, the workers collectives should make their contribution to the development and increased efficiency of production, for their own sake and for the sake of the country.

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STROUGAL URGES ELIMINATION OF CAUSES NOT SYMPTOMS OF PROBLEMS

Prague SVET HOSPODARSTVI in Czech 22 Mar 83 p 1

[Text] The joint session of both chambers of parliament of the Federal Assembly which, on 16 March 1983, was discussing the report on compliance with the programmatic announcement of the CSSR Government concerned itself, in addition to a comprehensive look at current progress of the state and economic agencies, with emphasis on the basic question of the research and development.

In his speech, Comrade Strougal emphasized that "compared in real prices, the volume of foreign trade has not increased at all. And if we want to increase our exports, we must beat out our competition--push them out of the marketplace. Of course, this cannot be used as an excuse for the fact that export of nonsocialist countries is the weakest link in our plan fulfillment."

He [Strougal] thus frankly pinpointed the most important cause of a serious problem of our enterprises in their effort to sell their products on international markets, whether in CEMA countries or elsewhere in the world. The excuses that the competition is better, works under more favorable conditions, or that it is more ruthless are simply not acceptable in the international trade arena. The route to increasing the CSSR position in world trade (within the past 10 to 12 years our share of the international market has dropped by one-half) must begin primarily as an idea in the minds of our top management; in their competency to understand what is and what is not a stream of innovations, what are and what are not world standards, what can or cannot be advantageous in terms of national economic production. Only such an outlook can open the way to a realistic evaluation of our own production and research capacities, to a realistic evaluation of the work of the individual, and to an effective organizational changes; but also to a real hunger for technology, and to a permanent search, verification, and rapid introduction of the latest research and development findings into technological improvements, construction, production organization, as well as into the structure of the whole economy.

At the current stage it is irrelevant how many "technically advanced" or "prime quality" products the enterprise of the VHJ can show (even though the prime minister's presentation also called our attention to the necessity to continually replace the most diverse administrative evaluations by a stronger economic pressure, that is more effective pricing, credits, and wage

allocations), the only thing that counts is the actual position in the world markets. That is to say, the extent of a realistic benefit derived from the use of the research and development: the innovations, which will lead to greater revenues from the foreign market, yet will not become an excessive burden from the view of resource consumption (energy, materials, and labor) or as a danger to the environment.

The sciences will not become a production force only thanks to the plan, directive, or a conference. The research can show its power only if we cannot proceed another step without it, when the organizers get to understand its full potentions. That, of course, does not mean to have the knowledge; to "chase" the sciences for use in statistics and reports, but to live with it; to see exactly the place of need for new technology; to be able to ask the right questions of the scientists and researchers; to know how to estimate the larger framework of the task which will only bear fruit perhaps in five, perhaps in ten years.

The current top-of-the-line world standard is born of uninterrupted innovations. At the moment of starting the production of a new product, the drawers of the designs should already contain innovations to this novelty and the scientists should already carry the concept of a completely different product in their minds. This process cannot be halted (in many cases we cannot even catch up) only to be taken advantage of, we must join this process permanently and not only once in a while. This is the kind of approach that the government, with the support of all members of the Federal assembly expects.

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CSSR'S TRADE WITH THIRD WORLD DESCRIBED

Prague RUDE PRAVO in Czech 26 Mar 83 p 6

[Article by Jindrich Lacko, Federal Ministry of Foreign Trade: "We and the Third World: Our Share in This Prospective Component of World Trade"]

[Text] The Third World--more than one of us, upon hearing this term, conjures up photographs of starving children, recalls the frequently published data about low food consumption in some African and Asian countries, reminds himself of the past and of the heroic struggle of the peoples of Africa, Asia and Latin America for national liberation and the breaking up of colonial empires. All of this is true. Equally true, however, is the fact that developing countries as a whole belong to the most dynamic part of the contemporary world from a political, demographic, and economic viewpoint.

Let us remind ourselves that more than 100 countries of Asia, Africa and America make up the group of developing countries. They form a part of the world with tremendous differences in the level of economic and social development. One finds here certain Arab countries with a per capita national income greater than that of the USA, along with countries that have asserted a place for themselves in the most demanding markets of the world with their consumer goods and electronics industries, and which have inundated stores in Western Europe and the USA with their products. The developing countries also include countries which belong among the largest world exporters of meat and grain, but also countries which are dependent on the monocultural production of cocoa, tobacco, jute, sugar and other agricultural crops and products and must import all other foods, and countries with very high mortality rates for children as well as adults.

The position of the developing countries in the world economy significantly and substantially changed in the course of the seventies. Formerly obedient suppliers of raw materials to capitalist markets became aware of the economic power given to them by their natural mineral wealth, and they began to speak out for a better place for themselves in the world. Initially crude oil producing countries, and later producers of other materials began to obtain, thanks to higher prices for their exported raw materials, increased resources for the satisfaction of their needs and the development of their domestic economies.

The sharp growth in world raw materials prices, especially that of crude oil, was a shock for most of the capitalist countries, and substantially deepened the problems of their crisis-plagued economies. The increase in crude oil prices (which rose 20 times between 1970 and 1980) meant on the one hand a huge influx of tremendous wealth into these countries which possessed oil, and on the other hand a worsened position for those countries which must import crude oil for their energy generation, chemical industry and transportation requirements. At the end of last year it was necessary to export roughly three times as much copper, lead, zinc, and cocoa, four times as much jute, and fully ten times as much sugar as in 1975 to pay for the same amount of crude oil.

It is therefore logical that many countries, in an attempt to maintain their pace of development and to solve the constant problems caused by the deep crisis that had arisen in the capitalist economy, did not protect their markets with the result that inflationary trends in their economies reached staggering levels. With the gradual worsening in the prices for some raw materials the indebtedness of the developing countries also increased, and has reached overall a level estimated at 600 billion dollars. Several countries, in order to pay off these foreign debts and the interest on them, should be paying more each year than they earn from exports on an annual basis.

An Important Area

Despite these unfavorable economic trends it remains a fact that the developing countries as a whole (and especially certain countries among them) remain a very interesting and progressive element in the world economy, an element controlling a substantial portion of the world's natural wealth, an element which is developing and investing in itself, an area attractive not only for its often huge markets, but also as an area which wields considerable political force in the contemporary world.

Evidence of this is the growing significance of the so-called nonaligned movement, the members of which are to a decisive extent developing countries. In the implementation of its foreign trade policies, Czechoslovakia as well approaches its relations with the developing countries from these perspectives.

Commercial relations with developing countries are an important and indispensible component of Czechoslovak foreign trade. And as the importance of developing countries in the world economy increases, so too does our trade turnover with these countries increase.

The increasingly broad scope that relations with developing countries are finding in our foreign trade policy is indicated by the fact that last year alone more than 50 important documents were signed with individual countries in this grouping altering the scope and conditions of mutual trade and creating the conditions for the operation of foreign trade organizations. An important feature of our trade ties with individual countries is that they are developed on the basis of mutual advantage

and a respect for national and economic sovereignty. In this respect, these relations are different from the predatory expansionist policies of the multinational capitalist monopolies which, in penetrating developing countries, seek above all the easy acquisition of high profits by exploiting natural wealth or taking advantage of cheap labor.

Economic cooperation with developing countries brings Czechoslovakia not only a number of important raw materials, agricultural crops and food products, but also finds expression in the offering of many very interesting products that the developing industry of specific countries produce that are of high quality and, often, carry a favorable price.

Orders for Engineering Industry

On the other hand, the Czechoslovak national economy frequently contributes to a large extent, through foreign trade organizations, to the industrialization of specific national economies, thereby assisting in the development of a domestic processing industry so necessary for the economic independence of developing countries. Our expertise lies above all in the area of the construction of turn key capital investment projects, deliveries of machinery and equipment which is world renowned and proven in operation. This is true regardless of whether one is discussing electric power plants, oil refineries, cement plants, sugar-processing plants, complex textile plants and machinery, leather processing plants, or other industrial factories.

That this often involves large contracts is evidenced by the fact, for instance, that over the past 20 years we have exported more than 200 turnkey projects to Arab countries, among them 17 electric power plants, 20 chemical factories, 90 water treatment facilities, 19 textile plants, 20 mills and 20 radio transmitters. Similarly, Czechoslovak producers may pride themselves on the successful implementation of construction contracts for electric power plants in India, Argentina, Brazil, Mexico, and in other countries.

Desirable Partners

Of the developing countries, some of the largest trade partners of the CSSR include the Arab states, among them Iraq, Syria, Libya, Algeria, Egypt and Lebanon. Czechoslovak exports to Arab countries since 1975 have more than doubled and we now export to these countries more than half of our exports to developing countries.

Trade with Asian, non-Arab countries has also been developing rapidly. Favorable conditions for its further development currently exist primarily in India, Iran, Turkey and Burma. In terms of our exports, the high percentage of machinery deliveries, which make up almost three-quarters of our exports, is favorable. This percentage could be bigger still, if we would always be able to make use of possibilities offered us for cooperation, and in the areas of industrial cooperation which are opening for us, for instance, in India. Aggressive politico-commercial negotiations

with countries of this area are bearing their first fruit in the form of an interest in Czechoslovak capital equipment, turning machinery, and in the development of cooperation in the economic area.

Latin American countries, despite their current economic difficulties, are very interesting trade partners for Czechoslovakia. Trade with Argentina, Brazil, Venezuela, Peru and Mexico is, to be sure, less than it was in the late seventies and early eighties, but remains significant. We import important raw materials from this region, such as iron and manganese ores, nonferrous metal ores, leather, wool, coffee and cotton, for which we pay with exports of turnkey projects, energy generation equipment, printing equipment and other machinery products.

In accordance with the general principles of its foreign trade policy, Czechoslovakia devotes priority interest in its commercial ties to those developing countries in which the people have adopted a progressive orientation to their development. These countries are the primary recipients of Czechoslovak technical and economic assistance, and these countries are the first to have their requests honored for the dispatch of Czechoslovak experts. In cooperation with the Soviet Union and the other socialist countries, our foreign trade enterprises and our experts are participating actively in the industrialization and building of the economies of, for instance, Afghanistan, Angola, Ethiopia, Mozambique, The Peoples Democratic Republic of Yemen, and in Nicaragua. Even though the volume of trade and cooperation with individual countries does not yet correspond to the importance and level of political ties, agreements have been signed and a framework created for the favorable development of cooperation.

The attempt by Czechoslovakia to develop its commercial ties with developing countries is, then, based not only on the pertinent inter-governmental documents. It finds its expression as well in the increasing deliveries of Czechoslovak products, in increasing numbers of expatriated experts and in increasing numbers of students and experts from these countries who are increasing their education and professional qualifications in Czechoslovakia.

Czechoslovak foreign trade organizations are finding increasing numbers of suppliers in the Third World and are seeking other ways of expanding cooperation with partners in developing countries, cooperation which would be beneficial and advantageous for both sides. One of these ways is through the development of joint ventures and industiral cooperation. There should certainly be more examples such as the tractor assembly plants in Iraq, India or Burma, or the joint factory for the processing of furs in Afghanistan.

The Third World, with its huge and as yet unutilized economic potential not only requires this kind of increased effort, but appreciates it as well, and such conscientious cooperation will bring success both to Czechoslovakia and its national economy.

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LONG-TERM PROSPECTS FOR NUCLEAR ENERGY OUTLINED

Leipzig ENERGIETECHNIK in German Vol 33 No 3, Mar 83 (manuscript received 12 Nov 82) pp 84-87

/Paper by Dr Dieter Herrmann, economist; Eckhard Krepper, physicist; Dr Beate Reetz, engineer; and Prof Dr Dieter Ziegenbein; all of the GDR Academy of Sciences, Central Institute for Nuclear Research, Rossendorf; presented on the occasion of the Fifth International Long-Distance Heating Conference in Kiev, USSR, 7-10 September 1982: "Strategic Aspects of the Economic Priority Setting of Nuclear Heat Sources"/

/Text/ 1. Introduction

The useful energy generated in the GDR is used 60 percent for room heating and thermal processes in a temperature range below 250°C. This heat demand quantitatively has the greatest weight in the useful energy balance; its requirements for the exergy of the energy media that are used for it are relatively small compared to other forms of useful energy. In the past, a number of factors have caused a low level of centralization for the generation of heat, in comparison to the generation of electrical energy. These factors include: the territorial distribution and the differentiated seasonal demand for maximum power, the high investment costs of heat transportation systems, and the available simple solutions for decentralized heat supply based on fossil fuels. The increasing requirements as regards convenience, working productivity, and environmental protection could be met as a trend by using more and more high-grade useful energy media for heat generation.

Triggered by the severe price rise for petroleum and other primary fossil energy media, worldwide efforts are being undertaken to cover the energy demand for the future. These also include, and not least of all, the demand for heat. These energy demands are to be covered without high-grade primary fossil energy media. The energy economy of the GDR will have to orient itself primarily on increased utilization of domestic raw brown coal and nuclear energy. If it is considered here that the resources as well as the economically reasonable annual production quantities of brown coal are limited, and that furthermore, the use of coal in the materials business must be increased, the use of nuclear energy in the long term appears as an inescapable necessity not only for the generation of electricity but also for the generation of heat.

In contrast to the nuclear generation of electrical power, there is little national or international experience available as yet for the nuclear generation of heat. Because of technical and economical peculiarities of nuclear heat generation systems, the ideas that are traditional in classical heat supply installations cannot be transferred so easily to nuclear systems. Strategic considerations concerning the subsumption of nuclear heat sources in the national economy must therefore consider the specifics of nuclear heat generation systems as well as the resultant consequences for the development of centralized heat supplies.

2. The Special Features of Nuclear Heat Sources

Various possibilities suggest themselves for generating nuclear low-temperature heat, possibilities which can be implemented now and in the near future:

a) Coupling heat out from large pressure suppression nuclear power plants (KKW):

   With a total KKW power of 3 to 4 GW_e (about 9 to 12 GW_{th}), about 500 to 1200 MJ/s of heat power can be furnished at the site of the KKW.

b) Coupling heat out from nuclear heat-power plants (KHKW): With a double-block system totaling 2 GW_e (about 6 GW_{th}), 1800 to 2000 MJ/s will be the maximum heat output.

c) Nuclear heating plants (KHW) which produce heat exclusively:

   Up to now the only industrial projects which are in the phase of practical implementation are the double-block systems of Type AST-500 in the Soviet Union, with an installed total power of 1,000 MJ/s.

Numerous considerations and projects for creating nuclear heat-power plants and nuclear heating plants with considerably less block power have not yet reached the degree of maturity which would promise, in the foreseeable future, a broader economic utilization under the conditions of industrially developed regions.

For safety reasons, the inclusion of nuclear heat sources within the territories which they are to supply will scarcely be considered within the foreseeable future.

Nuclear heat sources, including the necessary transit layouts, require higher specific investments than conventional systems. These must be compensated by lower operating costs and in particular by lower fuel costs, as well as by higher use times. Only thus can nuclear heat power attain economic equivalence or superiority. It follows from this that the nuclear sources at first can be used economically only as base-load systems, and the future price increase and scarcity of fossil fuels will be the decisive propelling force for the introduction and expansion of nuclear heat supply. Another special feature results from the fact that, in the near future, only water-cooled reactors can be considered for heat generation. But their economically reasonable heat-media parameters are relatively low. This influences the possibilities and routes for furnishing heat energy for technological purposes. Finally, it should be noted that the nuclear heat sources

will be closely linked with the overall system of nuclear energy in the national economy, a linkage which is established through the nuclear fuel cycle. There are direct interactions between the expansion of nuclear heat supply and the solution of the problem of fissionable material in nuclear energetics.

3. Nuclear Heat Sources and the Development of Long-Distance Heat Supply

The public long-distance heat supply in the GDR has received a significant impetus in connection with government housing construction programs that have been conceived for a period of two decades. At the present time, its total heat output is about 10,000 MJ/s. Since 1970, the number of long-distance heat-supplied residences has more than doubled. This growth results primarily from the complex new residential construction in metropolitan areas. This progress is remarkable even on international scale and will continue in the coming years. But regardless of this, there are some basic problems in the inclusion of nuclear heat sources within the public long-distance heat supply:

- Despite the concentrated erection of large new building areas and the rapid rate of new construction, the growth of the demand for heat is small, compared to the output capabilities of nuclear heat sources.

- The heat generation capacities based on fossil fuels, which have been installed in the public heat supply, are relatively new or have recently been constructed because of the necessary replacement of heating oil. Their general shutdown does not appear suitable in the foreseeable future.

- The maximum heat output of existing long-distance composite systems currently exceeds 1,000 MJ/s only in a few supply centers. However, nuclear sources already offer a heat output of this order for covering the base load.

From these boundary conditions, two basic conclusions follow:

- To cover the heat demand which is growing step by step, conventional systems based on fossil fuels, that is based on raw brown coal under the conditions of the GDR, will also continue to be significant in the future.

- The effective introduction and utilization of nuclear heat sources requires the expanded utilization of nuclear-generated low-temperature heat beyond the communal heat supply.

An expansion of the use area of nuclear low-temperature heat, in the medium term, is possible only by its inclusion within the industrial heat supply system. The heat supply systems of industrial enterprises and other installations at this time make available a heat output exceeding 20k000 MJ/s. The converted annual heat quantity in this area is about three times that which was used for the communal heat supply. An analysis of the territorial distribution of industrial heat supply systems which are operating mainly in insular fashion, shows that, by combining them into regional systems with the inclusion of communal consumers, the preconditions for the tying in of nuclear heat sources can be created. Such a development is also favored by the age structure of existing industrial heat

generators. The requirements of many technological heat processes as regards the type and the parameters of the heat media are problematical for the utilization of nuclear heat sources to cover the industrial heat demand. The tying-in of industrial consumers within the nuclear heat supply systems presupposes reconstructions in the user area with the objective of facilitating, to the greatest extent possible, the supplying of technological processes on the basis of hot water between 150°C and 180°C, which are flow temperatures typical in the public heat supply system. The following possibilities suggest themselves to cover the heat demand of those remaining technological processes where the use of steam is unavoidable:

- The continued supply of these selective processes by steam generators based on fossil fuels over a longer period of time.

- The generation of secondary steam from hot water and its subsequent parameter increase by thermal compression, in such systems in which there is a small steam demand compared to the heat demand based on hot water.

- The supplying of large consumers of process steam by special KHWs or also by KHKWs.

Figure 1 shows the efficiency, in terms of energy economics, of secondary steam generation and thermal compression in comparison to the direct utilization of electrical energy. The complete follow-up utilization of the heat medium by the heat consumer was presupposed. Here the heat medium is used in the low-temperature range up to the recycling temperature of $t_R = 70°C$ (1).

4. Nuclear Heat Sources and the Substitution of Fossil Fuels

The introduction of nuclear heat sources makes severe demands on the investment power of the national economy. The starting point here must be that, before implementing a nuclear heat supply, all economically reasonable measures of efficient energy application must be exhausted. At the same time, the introduction of nuclear heat sources is a measure for the substitution of fossil fuels by nuclear energy, and thus cannot be regarded in isolation from other possibilities of nuclear energy utilization. In many countries, about one-fourth of all primary fossil energy media is currently being used for generating electricity. In the GDR, more than one-third of the domestic brown coal which is produced is used for this purpose. The release of these quantities of fuel by the deployment of nuclear power plants will generally be less expensive and thus have priority compared to nuclear heat supply. By implementing the heat-power coupling, the capacities which are created for generating electricity can simultaneously also be used to furnish heat, and the utilization of primary energy can thus be improved. In this case, only specific surcharges are to be accounted to heat generation. Presumably, these will be smaller than in the case of separate heat generation.

In the GDR, the essential restrictions for this route of nuclear heat supply are the following: On the one hand, the expansion rate of the nuclear generation of electricity will be limited and, on the other hand, only a few high-density centers exist which could utilize the heat outputs for base-load coverage of the magnitude

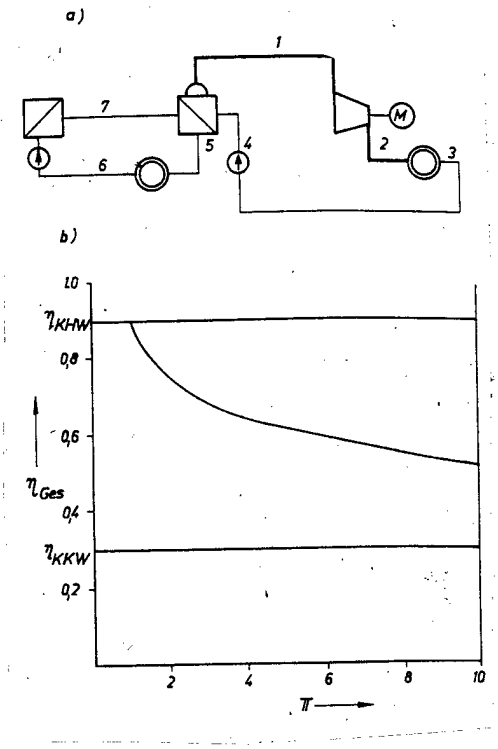

Figure 1: Basic Circuit Diagram (a) and Efficiency η_{tot} of Primary Energy Utilization (b) in the Case of Secondary Steam Generation and Thermal Compression, in Dependence on the Compression Ratio of the Steam Compression $\pi = p_2/p_1$ With η_{KWH} the Efficiency of a Nuclear Heating Plant, η_{KKW} the Efficiency of a Nuclear Power Plant

Explanations:
1 - 2 Compressor, driven by electrical energy from a KKW
2 - 3 Steam consumer
3 - 4 Condensate pump
4 - 1 Evaporator
5 - 6 Follow-on heat load in the low-temperature range
6 - 7 Heat supply in the nuclear energy installation

that is offered by pressure suppression KKWs or KHKWs. Regardless of this, the exhaustion of this limited but economically significant potential to replace fossil fuels deserves high-priority consideration.

Nuclear heating plants with large block power (AST-500) will require only a slightly higher investment per released unit of fossil fuel than KKWs or KHKWs. On the other hand, the specific investment costs for a nuclear heating plant with a block power of only 100 MJ/s, starting from the degression coefficients that are typical for nuclear installations (2, 3), will be greater than those for the

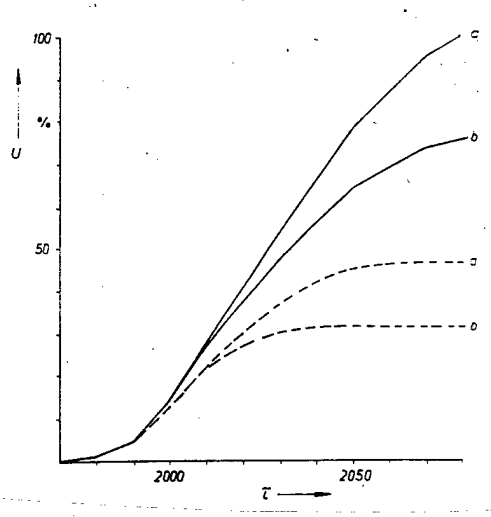

Figure 2: Time Development of the Integral Natural Irranium Demand of a Nuclear Energy System

--- Exclusively for generating electricity

—— To furnish electrical energy at low-temperature heat

a) With a constant load factor for all KKWs

b) With a load reduction of the LWRs in favor of a heavier loading of the FBR

AST-500 by a factor of 2 to 2.5. For the nuclear heat supply through nuclear heating plants, therefore, those areas will be of special interest which cannot be considered for coupling heat out from KKWs or KHKWs, but which are suitable for heat outputs of 500 MJ/s (monoblock AST-500) or 1,000 MJ/s (double-block arrangment) in the base-load area.

Analyses show that, in the GDR, at least 10 regions have a relatively high density of heat demand, and thus the erection of large KHWs and the expansion of heat-transit layouts to supply neighboring cities and industrial installations will require much lower investments than the construction of an equivalent number of smaller systems.

Besides, there is a number of isolated heat consumers with a demand below 500 MJ/s. These consumers can be supplied on a nuclear basis either by nuclear heating plants with small block power (about 100 MJ/s) or by using nuclear-generated electrical energy in combination with heat pumps. On the one hand, the required specific investments are very high in both variants and, on the other hand, the associated potential for releasing fossil fuels is small. Consequently, nuclear solutions for these areas will have a low priority in terms of their early implementation.

5. Nuclear Heat Sources and the Problem of Fissionable Material

Up to now, the problem of procuring fissionable material for nuclear heat sources was left out of consideration. But, similar to petroleum, natural uranium is a limited energy resource. Because it is worth transporting, it also tends to be a global energy source. Consequently, the basic starting point must be that natural uranium will be available to cover a growing need for fissionable material only for a limited time and to a limited scope. In the case of nuclear generation of electrical power, the basic paths for solving the problem of fissionable material have already been indicated in the past through the introduction of fast breeder reactors. By expanding the application area of nuclear energy to the generation of heat, the problem becomes more complicated.

Internationally it is estimated that, by the beginning of the coming century, fast breeder reactors will be used to an increasing extent. In this way, the nuclear generation of electrical energy can grow in the future, essentially without a growing demand for natural uranium. However, the already existing thermal KKWs, KHKWs, and KHWs, as well as the KHWs yet to be constructed, will continue to use mainly natural fissionable material. As was already observed in previous studies (4), the future reduction of the current demand for fissionable material in existing thermal reactors shows the greatest consideration in the solution of the problem of fissionable material, especially if there is a simultaneous expansion of the nuclear heat supply. One basic path in this direction is the displacement of thermal systems in the middle-load range by base-load coverage through linked FBRs. Figure 2 shows the effect of such a displacement on the development of the integral demand for natural uranium.

When KKWs or KHKWs are used for the nuclear generation of heat, similar conditions prevail. Through the implementation of the heat-power coupling, fissionable material is from the very beginning used more effectively than in the case of separate generation. Furthermore, at the sites of thermal KKWs or KHKWs, FBRs will also have to be used for the combined generation of electricity and heat. Analogous to the generation of electrical energy, so also in supplying high-density areas with heat, a linked operation of fast base-load systems and thermal medium-load systems can be implemented in the long term. For heat consumers outside the high-density centers, where thermal KHWs will be used as a first step, such a subsequent completion of the heat supply by FBRs to take over the base load and to displace the thermal systems in the medium-load range is much more complicated but cannot be excluded in principle.

6. Conclusions

The development of nuclear long-distance heat supplies must have a significant role in the long-term replacement of primary fossil energy media. Nuclear heat sources have special technical-economic features, especially their increasing investment costs with reduced block power. Thus, in comparison to conventional heat generators, they impose more stringent requirements on the degree of centralization of the heat supply systems.

The implementation of a nuclear long-distance heat supply which will be effective in energy-economic terms depends strongly on the preliminary work and activities is the area of conventional heat supply, especially heat transport and distribution.

The complexity of introducing and developing a nuclear heat supply presupposes a long-term conception for solving the energy-economic problems of a country. For the GDR, the use of various types of installations can be foreseen, whose deployment will be subject to a time sequence, corresponding to the prevailing requirements for the release of fossil fuels.

Starting from the present state of knowledge, the following development stages can be regarded as probable:

- Expansion of existing long-distance heat supply systems and tie-in of existing insular networks within a territory, integration of industrial and communal

heat consumers, connected with a trend towards standardizing the heat-medium parameters for the heating processes in the low-temperature range.

- Shutdown of decentralized heat generation systems, or their reconstruction with the objective of taking over heat-load coverage in the complex heat supply systems or the coverage of heat processes with steam at higher parameters.

- Heat delivery from KKWs or KHKWs on the basis of thermal reactors, for base-load coverage in high-power heat demand centers, combine with the creation of heat transit systems.

- Construction of nuclear heating plants with reactors of the type AST-500 at locations which are unsuitable for the erection of KHKWs. The sites for KHWs of high output should be chosen so that the heat transport expense is minimized.

- Development of low-power reactors for covering the heat demand in supply areas of small capacity which, due to their territorial boundary conditions, cannot be connected to high-power nuclear heat sources or transit systems.

- Displacement of heat delivery from nuclear power systems based on thermal reactors from the base-load range to the medium-load range, to the extent that a heat-power coupling can be implemented in KKWs with FBRs and to the extent that their location permits existing heat transit systems to be coupled in at reasonable expenditure.

A path for developing a nuclear heat supply, which is primarily based on the deployment of systems with large-unit power, is favored by socialist conditions of production and ownership.

FOOTNOTES

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3. Sochaski, R.O.: Candu-OCR Power Station - Options and Costs, AECL-6436, WNRE Pinawa, Manitoba 1980 (Canada).

4. Herrmann, D. and Krepper, E.: Some Strategic Aspects of Nuclear Heat Supply. Kernenergie (Nuclear Energy) 25, 1982, 1, pp 1-6.

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SED SCIENCE CHIEF ON WAYS TO IMPROVE BASIC, APPLIED RESEARCH

East Berlin EINHEIT in German Vol 38 No 2, Feb 83 (signed to press 13 Jan 83) pp 129-135

['Science in Our Society' feature article by Prof Dr Hannes Hoernig, member, SED Central Committee; chief, Science Department, SED CC: "On the Position and Responsibility of Science in the Social Reproduction Process"]

[Text] Among the most important tasks in fulfilling the 10th party congress resolutions are the acceleration of scientific-technical progress and the more rapid application of new science data in practice. In his concluding speech to the fifth Central Committee session, Erich Honecker reiterated that the GDR could all the better assume its place in the effort on behalf of the vital questions of our time the more it is being strengthened all around. And there is no domain in social development, in the consolidation and strengthening of socialism, where the requisite performance improvement could do without sound scientific work understood in a complex way. Especially in the economy, the highest standards are demanded of science and its productive efficacy. To that end, Comrade Erich Honecker, said, we have to "invest effectively our great store of knowledge, experience and dedication."*

The most efficient utilization of the GDR working people's high educational potential is of the greatest importance. "Our country's most precious potential is the labor capacity of over 8 million working people."** Between 1971 and 1981, e.g., the proportion of technicians and master workers in the socialist economy's total work force rose from 49.2 to 62.2 percent. The number of college and technical school graduates climbed from 761,700 to 1,455,500 in that period. Such a high skill level has to express itself in a faster science effectiveness in production. That is the most important prerequisite for a constantly rising labor productivity, economic performance improvements and the further development of creative, responsible work by all working people.

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*"Aus dem Schlusswort des Genossen Erich Honecker, 5. Tagung des ZK der SED," Dietz publishing house, Berlin, 1982, p 24.

**Ibid.

Satisfying the expectations placed in science makes the highest demands on its performance improvement. A circumspect and steady policy has created all prerequisites for satisfying these high demands. That is true as much of the planned development of colleges and technical schools, their training and research potentials, the development of science academies and the forming of efficient research institutions in industry as of the constantly rising material and financial allocations for science and technology. They rose from M 4.2 billion in 1970 to M 8 billion in 1981. In the universities and colleges alone, total basic assets climbed from M 3.6 billion in 1971 to M 7.2 billion in 1980. For 1983, the national economic plan has set aside M 9.3 billion for science and technology.

This continual development impressively expresses the conformity between socialism and science. Like socialism, science is essentially progressive and focuses on the advance of knowledge. The practical utilization of its data in socialism is aimed at the control of nature and the improvement of men's living and working conditions. If it, on the other hand, falls under the control of a reactionary system that is hostile to progress, such as imperialism, science is blocked by the barriers of the imperialist profit system and misused, against its proper humanistic purpose, for inhuman ends. Lenin has underscored that "only socialism can rid science from its bourgeois fetters, its subjugation by capital, its slavish ties to the interests of filthy capitalist lucre."*

The classic authors of Marxism-Leninism have often commented in detail on the increasing role science plays in economic and social progress. Karl Marx, e.g., pointed out the importance to society of a concrete and practical utilization of science data, when he wrote, in the "Principles of the Critique of Political Economy": "To the extent, however, that large-scale industry develops, the creation of real wealth becomes less dependent on working time and the quantum of labor invested than rather on the general status of science and the progress of technology, or the application of this science to production."**

In this Marx always looked at the whole science system, the interactions and dependencies among the various disciplines, the unity of natural sciences, technical and social sciences and their relation with social practice. And in a letter to W. Borgius, of 25 January 1894, Friedrich Engels underscored this dialectical unity. He wrote: "The political, legal, philosophic, religious, literary, artistic and other development depends on economic development. But they all also react to one another and to the economic base. Not that the economic situation is the cause, solely active, and everything else only a passive effect. But it is this interaction on the basis of the ultimately always prevailing economic necessity."***

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*"Speech at the First Congress of the Economic Soviets," "Werke" (Works), Vol 27, Dietz publishing house, Berlin, 1960, pp 407-408.

**Dietz publishing house, Berlin, 1953, p 592.

***Marx/Engels, "Werke," Vol 39, Dietz publishing house, Berlin, 1986, p 206.

Our party's science policy relies on such realizations. In his 10th party congress report, Comrade Erich Honecker explained: "With the continued shaping of the developed socialist society, the responsibility of science and all scientists to society is growing. In the same measure society's responsibility is growing for developing and perfecting science and using its data."*

Scientific-Technical Progress Calls for Tapping All Reserves

New dimensions in our development also call for new and higher achievements by science. Investing the science potential in a concentrated manner in realizing the basic demands of the economic strategy and gaining more and better products from available raw materials, material and energy call for new and original methods and ways in research and new forms of application. To that end it is necessary to structure the plans for basic research, science and technology and their application through unified management and control documents. Neither the potential nor time must be wasted through inadequate correlation and any uncontrolled juxtaposition between research and application.

It has become an indispensable economic precept to develop most up-to-date products at high speed and, in parallel with it, while applying most up-to-date scientific data, to ensure their efficient production and sales, especially their export. The reference the fifth Central Committee session made to the importance of the time factor in the economy applies to scientific work without any reservation. Yet it means a violation of the time factor if a well researched lead is lost through any tardy application to production. All partners must pay more attention to the science-technology-production cycle. In cutting down the time frames for working on research themes, in accelerating advanced academic education, and in assigning the graduates proper as to their training noteworthy reserves can be found of which a purposeful use must be made in research intensification and personnel training.

To that end, the stable cooperation and practical relations with the combines and enterprises that have evolved in recent years must be systematically extended and fostered as the ripened new conditions and possibilities of the combines allow, so as to make faster headway in research, from deciding on themes to joint elaboration and practical application, whereby rapidly to provide concrete contributions to fast economic performance improvements.

The universities and colleges greatly share in the responsibility for the development and shaping of the combines' research potential by preparing skilled personnel and participating in the elaboration of feasible research conceptions.

The concrete forms of the research management process also must be adapted to the new dimensions. Because the highest technical and ideological demands are made on the knowledge and intention of each and every scientist and the critical-creative atmosphere in the collective, the greatest importance attaches to specific forms and methods in management and in controlling the process of scientific work for the sake of optimum potential utilization.

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*"Bericht des Zentralkomitees der Sozialistischen Einheitspartei Deutschlands an den X. Parteitag der SED," Dietz publishing house, Berlin, 1981, p 87.

The initial defense, e.g., proves indispensable for research. One of the most frequent causes of quality losses or schedule delays in research is an inaccurate assessment of the initial situation. For that reason, an initial defense has to state clearly the current national and international status, the increase in knowledge expected, the available and the developmental potential, the necessary relations with the practical field and the anticipated benefit of the results sought. Combined in a unified conception, the necessary decisions can be made on this basis and concrete tasks may be set down, and the entire research process can be managed in a complex fashion. Tasking Workbooks (Pflichtenhefte), properly used, then become an important management and control instrument.

There are concomitant measures which in addition have proven helpful which, mainly by means of science debate, often affect the ongoing projects, make possible assessing intermediate results, and this way permit a control and inferences about the research process. This also includes making a more extensive use of such proven forms of scientific work as science conferences, discussions of experts, consultations with the partners in the practical field and with likely users, partial publications, discussions in science journals and the like.

The importance of the final defense of research results is undeniable. Then it mainly is a matter of evaluating the research outcome frankly and honestly in terms of the measures set by the 10th party congress. All courteous recognition of mediocre results blocks the road to the top achievements of the future. Greater efforts are thus needed to disclose concretely which factors promote and which factors block performance, for the sake of higher creativeness, and for the sake of a stronger concentration on tasks that arise from the economic strategy and science development as such.

These questions are of special importance to basic research which must be regarded as the basis for the science-technology-procuction cycle and is the most important source for accelerating the scientific-technical progress. Wholly in this sense we must understand and still more effectively enforce the orientation Comrade Erich Honecker gave in his conference with the SED kreis first secretaries in 1982, when he said: "Mathematical, natural science and technical research on fundamental problems, engaged in on the long range and according to plan, is what we regard as crucial for new developments and for the production of tomorrow and the day after tomorrow. No myopia must be allowed in this field. Neglecting basic research would sooner or later inevitably lead to lagging behind world standards and to economic losses."

Experiences have shown and results have confirmed that long-range basic research and the theories and discoveries resulting from it lead to qualitatively novel and, often, diversified solutions in techniques, technology and production. Among the typical features of such research also is that from the practical use made of its data new questions and impulses arise for advancing the basic research itself.

To find anything divisive between basic research and the practical, productive utilization of science data would be a mistake. What matters is the

comprehension, planning and management of a unified research process. Lead or explorative research then is permanent research along the prevailing knowledge boundary for the purpose of growth in knowledge and a deeper penetration of the laws of nature and society. There a subject matter is never complete. Critical is the ability and willingness of the researcher to use new insights as early and fast as possible in practical terms. That can function only in a unified research process ranging from a fundamental growth of knowledge all the way to a fast and effective utilization of new data, especially in production. Institutional or area boundaries cannot and must not play a role in this. Mainly those results are needed that raise the productivity of entire processes onto a higher level and efficiently affect the entire economy. Such results primarily lead to genuine top positions in products and technologies with high economic effects. The highest level research results and the constant improvement of scientific-technical practice remain decisive.

Some examples shall show what we are talking about: After modern physics in the early 1960's had discovered the laser effect, various applications for it opened up after a relatively brief period in communications electronics, material processing, testing techniques, surgery and other technical fields. These research data are gaining increasing importance for the development and application of microelectronics. In spite of that, many fundamental matters in laser research are still not settled.

For over 20 years basic research has been going on in interface and thin-sheet phenomena. Along with it, scientists are watching out for making practical use of what is already understood. That led to economically effective results in the development of coating procedures and installations by which one can prepare layers as hard as diamonds.

The processing of such and other basic and strategic tasks has not made us ignore the objective conditions, the necessary and the possible. Rather, in most instances we managed to organize the work in such a way that useable intermediate results were achieved which could rapidly be put to use. Essentially, it always comes down to gaining better control over the dialectics between gaining knowledge oriented to the requirements of science and of our society and a benefit-oriented utilization and dispensation of knowledge.

A higher grade of management and planning also is necessary to get a better effect still from the differentiation and integration of the scientists, taking place throughout the scientific-technical progress, toward the solution of complex objectives. There is a close dialectical relationship between the acceleration of scientific-technical progress and the interdisciplinary cooperation among natural, technical and social scientists.

Great reserves continue to be available for scientific-technical progress, for gaining top achievements, by putting interdisciplinary research under better control. Results of a high rank, that would greatly benefit our republic, are possible only through a closer cooperation and better coordination of the research in various disciplines. Such cooperation simultaneously also positively affects the research speed, fertilizes one's own discipline and often leads to new insights and solutions of principle. Important advances have been made wherever the competent scientists have used all chances for their own training as a precondition for their cooperation.

Additional reserves can be tapped by making better use of available funds and means, the good material-technical base that is available. A cutback in equipment imports ought to be combined with the task to give all users access to the technical equipment in universities, the GDR Academy of Sciences and industry.

Furthermore, our own efforts should be greatly boosted in building science equipment. Equipment development has always been an integral part of scientific work. Anyone who does research at the peak of his science discipline and wants to keep that lead is not likely to rely first and foremost on the equipment commercially available but will engage in developing his own equipment and thereby lift the reproduction of his own working conditions onto a higher level. Building one's own scientific devices is not a demand caused by any sort of emergency but a basic concern of research. By means of commercial equipment only mediocre achievements are possible on the long run. In experimental research you cannot purchase a ticket for world standards. Here the unity of research and the construction of science devices increasingly determines the nature of scientific work. Therefore it must be ideologically prepared and shored up in terms of performance and correlated in good time with the potential producers.

Science and Practice in Inseparable Unity

There is a remark by Karl Marx which is more and more being confirmed in our times, to the effect that "when the production process becomes science application, science, conversely, becomes a factor, as it were, a function of the production process."* That interaction increasingly assumes a new quality. While in the past the cooperation was confined to solving specific construction, technological or economic tasks, now the focus is placed on the complex handling of whole technological processes, production sectors and machine systems.

Fine results in the cooperation between science and production are attained wherever, relying on contractual accords and stable cooperation relations, a solid relationsship of trust has formed between the combines and the academies and colleges, where one closely cooperates, from elaborating long-range R&D strategies to turning research data over to practice, whereby the research potentials are intertwined and made highly effective. That stimulates on both sides an efficient, initiative-rich and total utilization and development of the science potential and assignments of college and technical school graduates in line with their proper qualifications.

The technological seminars (Technika) that were established as science programs at universities and colleges and the Academy of Sciences in recent years with support form industry have proven the most effective forms for combining science with production. In selected scientific and economic priority areas they are making essential contributions, through combining basic with applied research, to a rapid and multivalent utilization of the data in the economy and continued training and advanced training. By training whole application collectives they help reduce the application time frames considerably and improve the technical skill levels of the personnel.

*"Critique of Political Economy (1861-1863 Manuscripts)," Marx/Engels, "Complete Works," 2nd section, Vol 3, 6, Dietz publishing house, Berlin, 1982, p 2060.

Due to the distribution of capacities, the further extension of cooperation cannot primarily be a matter of quantitative development but must amount to qualitative improvements of relations. In particular, the cooperation between science institutions and practice in coordinating their long-range work directions and all their research with its application must be further developed at the earliest possible moment. A high sense of social responsibility, creativeness, a wealth of ideas and deep insight into the political and economic requirements of our time are expected of all who are involved in it.

Ideological Clarity and Scientific Achievement

Questions of efficiency improvements in all sectors of public life greatly are matters of ideology and socialist morality. Performance motivation and political motivation are inseparable. In this sense, political-ideological work is aimed at deepening the realization that the all-round strengthening of the GDR is imperative for further raising our people's material and cultural standard of living and, with it, the most important contribution to the safeguarding of peace. That is the crucial starting point for motivating all associates in the universities and colleges and all researchers toward high achievements in teaching, research and studies.

Their agreement with party policy becomes manifest in the inferences they draw for their personal performance development and in their creative initiative toward achieving and maintaining top positions. It mainly comes down to the realization that the continuation of the main task course demands an extreme performance readiness from each and everyone.

Special importance in making total use of all reserves attaches also in scientific work to doing away with unjustified performance disparities. Here on must with greater rigor face the requirements of scientific progress and come up with results leading to new theoretical insights of great economic and social worth. We must resolutely oppose any contentment with mediocre performance. It is characteristic of scientific work always to take what one already knows as the point of departure for new knowledge. One must focus on maximum performance because the mediocrity of today will tomorrow mean backwardness hard to make up for.

We should therefore more strongly emphasize in our political-ideological work that each significant scientific success is first and foremost the outcome of hard and skilled work by the scientists and all associates themselves. This is work that is informed with party-mindedness and a sense of responsibility, skill and dedication, honesty and ambition, humility and the willingness for risks.

Creative performance includes entering scientific and technological virgin territory. That will always entail a risk that is publicly acceptable. It is up to the scientists and their partners in the practical fields to practice in the research process the acceptable risk as a component and condition, consequence and characteristic of scientific-technical progress. That spirit must also more strongly be infused into the education and training of the new generation of scientists. Striving for high personal achievements and tapping all efficiency reserves belong together.

A thorough clarification of these matters, integrating specific problems with the concern of our overall party policy, and supervision over the most significant tasks call for the attention of the party executives in the science institutions.

Under party organization leadership, the research plans and projects have responsibly been checked. By concentrating available capacities and funds, the cooperative use of the material-technical base and the targeted use of theses and dissertations deadlines for important research projects from the science and technology state plan were significantly advanced. A seamless application of data in practice was contractually agreed on with the partners in industry and agriculture. Fine results were achieved at the same time in substituting for imports from the nonsocialist economic region by our own equipment developments and the manufacture of research materials.

An atmosphere of combative dedication and initiative always develops in science collectives where party organizations thoroughly analyse the situation and derive and realize inferences for their management activity from it. The greatest successes in the development and utilization of science are achieved for the good of socialist society where communists are heading the collectives and their personal example rates as the criterion.

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NEED FOR S&T WORKERS' ATTITUDE CHANGE, RECOGNITION STRESSED

East Berlin EINHEIT in German Vol 38 No 2, Feb 83 (signed to press 13 Jan 83) pp 136-142

['Science in Our Society' feature article by Dr Gerd-Rainer Radtke, economist, Institute for Political Economy of Socialism, Academy of Social Sciences, SED Central Committee; and Dr Heidrun Radtke of the same academy: "Develop Readiness and Capabilities to Master Scientific-Technical Progress"]

[Text] How the most recent scientific-technical accomplishments enter men's lives, create new opportunities to ease work, raise production, and help tap new sources for economic and social progress is fascinating to see. How well we manage to get ahead in critical areas of scientific-technical progress and produce top achievements that can stand up to the incorruptible measures of the international level ultimately controls our efficiency gain and also, largely, how we implement the main task under the altered conditions of the 1980's. It amounts to practical evidence for "how socialism can master the gigantic new productive forces for the good of the people. Develops them in such a way that even under the altered foreign economy conditions we, in view of the exacerbated international class conflict, successfully carry on our economic and social policy. That is what counts."* Solidly placing our economic growth on scientific-technical progress and fully utilizing, mainly this way, the reserves of our intensively expanded reproduction require still greater results from science and technology, more extensively using the working people's wealth of ideas, and mobilizing their creativeness and commitment.

Wealth of ideas, inventiveness, thinking in engineering terms--those are characteristics that largely depend on the social environment and conditions and, of course, on diligence, intention and striving. Reviewing our scientific-technical achievements with an eye to their originators, researchers, inventors, and innovators shows that such characteristics are the outcome of persistent and purposeful efforts in all domains of life in our society, including the science and technology development at colleges and universities as much as that of the innovator movement in the labor process and the promoting of technological open-mindedness among all working people. Cultivating

*Comrade Erich Honecker, "Bericht des Zentralkomitees der Sozialistischen Einheitspartei Deutschlands an den X. Parteitag der SED" (SED Central Committee Report to the 10th SED Congress), Dietz publishing house, Berlin, 1981, p 50.

the significant scientific-technical traditions of our people in the broadest sense of the word not only furnishes us sound foundations for it but also presents a permanent commitment and impulse to us. This all the more so because the growing demands in the continued shaping of the developed socialist society, notably the ambitious goals for growth, more than ever require generalizing what has proven itself rapidly, facing new questions, and seeking more efficient ways. It has already penetrated our consciousness that under socialist conditions the scientific-technical progress constitutes no social scourge.

The working people have found out themselves how science and technology accomplishments promote social progress. What matters today is to develop the capabilities and attitudes that are imperative for taking an active part in the effort to speed up scientific-technical progress and in independent, original work in the technical field. That includes an unbending will and a pronounced readiness to come up with achievements as much as a skill in scientific-technical work. So we must use every opportunity to transform the socialist order's affection for technology into the working people's thoughts and actions which for their own sake has to be further strengthened as a performance orientation.

To Stimulate Performance Dedication and Attitudes.

We possess an excellent potential for the higher speed of scientific-technical progress needed in the form of a performance readiness and initiative by a highly educated working class and intelligentsia. Performance dedication and attitudes are more than ever absolutely necessary today for science and technological development. They also constitute a high value in terms of the goals of socialism and contribute to personality development.

Performance readiness and initiative to master the scientific-technical progress are expressed in many different ways among us today. They are attested to by the many prudent ideas about socialist rationalization in all sectors of our economy, the introduction of microelectronics and robot technology and the well-nigh explosive rise of advanced education among working people within the last 5 years as well as the constantly rising number and higher utility factors of inventions, patents and innovator proposals. That includes, as was stated at the 5th SED Central Committee session, "such achievements as the 65-percent increase of top products up to the end of September (Authors: 1982) and the fact that by means of research and technology 10 percent more manpower could be assigned to other tasks than in the previous year."*

Behind it ultimately one always finds the readiness and energy of working people from all classes, strata and social groups, especially also of the young people. Especially the socialist social order can develop such readiness in a targeted fashion and use it appropriately in the overall social interest. On the basis of the political rule of the workers class and the public ownership in the means of production, socialism always places the achievements of science and technology ever more effectively at the disposal

*Comrade Hermann Axen, "Aus dem Bericht des Politbueros an die 5. Tagung des ZK der SED" (From the Politburo Report to the Fifth SED Central Committee Session), Dietz publishing house, Berlin, 1982, p 38.

of men, while long-range planning of social development increasingly facilitates controlling scientific-technical, economic and social process in their unity.

Nevertheless, much that was enough thus far in the working people's commitment and initiative no longer suffices for a rapid acceleration of scientific-technical progress and rigorously elevating its degree of economic efficacy. Questions are emphatically being raised about how far one succeeds everywhere in struggling for top achievements through extraordinary commitment at the right time and the right place, independently spotting propitious developmental trends in new products and technologies, and getting an optimum full capacity use out of highly productive machinery and installations.

The scientific-technical progress today makes demands on the working people that call for a high degree of energy, independence and personality dynamics--mainly regarding their training skills and their deliberately focusing on the higher yardsticks that have to be applied to scientific and other labor results. Members of the scientific-technical intelligentsia not rarely face the task to find new ways in the production and methods development for GDR top products with courage, exceptional diligence and tenacity, and also with enthusiasm and elan. Production workers face the necessity to adjust flexibly to new working conditions or get set for different activities. The readiness for it and the retraining that goes with it are generally well developed. Problems arise often, however, in the willingness to make big changes in one's personal and working and living situation--perhaps because the preparation for it was not sufficiently circumspect or "only" because it is not so easy to give up familiar habits. Such changes come, e.g., through going into shift work or changing to a different work collective. Nor does the new technology make exclusively for easier work or for more mental-creative activities, though that may be its predominant tendency. Even in the most up-to-date automated solutions new and unaccustomed stress may arise in part as, e.g., in microscopic work in electronics. Here the attitude and readiness to do one's job, in the overall social interest, even under less attractive working conditions play a great role.

Diverse as the demands the scientific-technical progress makes on all individuals may be, they always call for the dedication of the whole person, for much effort and conscious energy. Not simply adapting oneself to new givens but taking a hand oneself in actively determining the thrust of the changes that have become necessary--from there, after all, to a large extent arises the working people's readiness deliberately to face the prevailing requirements of the scientific-technical progress. Therefore it is of special importance that workers take an active part in preparing, e.g., rationalization measures and that their ideas are taken into account directly.

Generally speaking, for an improved effectiveness of science and technology diverse reserves can be tapped by, primarily, further developing specifically socialist modes of thinking and conduct. Responsible handling of resources, receptivity to criticism or also proposals on improving the working efficiency of the collective, an earnest consideration for the effects of one's own work on the work of others or of the user--this sort of performance attitude is in

some work collectives still too much held to the level of mediocrity so that the performance thrust can thereby not be effected that is required as the fundamental condition for successfully carrying on the main task course. Quite elementary characteristic attitudes like diligence and discipline also gain in importance at work; this especially under modern production conditions because there a minute of wasted labor time makes much more of a difference than in traditional, and that also mostly means less productive, machines and installations.

Under what conditions does the working people's performance readiness turn into permanent, normal behavior even under difficult labor situations? How can one bring it about that positive work attitudes achieved in the outcome of particularly relevant situations and campaigns will get set and permanent and not be forgotten again later? A basic prerequisite for it lies in permanently orienting the personality toward work performance or performance in general. Value judgments are relatively stable awareness factors that express the most general purposes in life; in that capacity they rate as a sort of action program for structuring one's personal life. Performance orientation forms in a lengthy process in which a personality actively comes to grips with his overall social living conditions; important building blocks for modes of behavior which only later, on the job, come into evidence, are thus already laid during childhood and youth. From this results the great responsibility socialist society has to form and stabilize a performance orientation in all phases of life, and especially at an early age, through an age-relevant realization of the performance principle and the conveying of specific models and ideals. In the performance principle as a basic social developmental principle and an organizational and distribution principle in socialism, our society has the decisive basis for an active, deliberate and voluntary performance readiness in that performance gains social recognition. To make this perceptive to everyone--precisely here it is where valuable chances are often still squandered. E.g., are young people everywhere given a sufficiently concrete picture about their expected requirements and performance in their future working life? Are performances not often judged too superficially and not measured and honored too little in terms of actually produced results of learning and labor? How is such an attitude still tolerated in some pupils' and students' collectives where diligence is ridiculed as "bucking for success" and one settles for a minimum of learning?

What mainly matters is a relatively early and purposeful preparation of our future workers for the high demands their future jobs will make on them. This requires making especially the young people aware of that the most important thing for their securing and enriching their material life and for their developing and maintaining themselves as personalities and strengthening their own sense of worth is their own work performance. It is exceptionally important to convince them of the idea that their performance counts not only in the sense of elevating the material and cultural standard of living of each, but also as a contribution of each to strengthening our economic efficiency for the protection of peace, socialism and, hence, his own life.

Performance orientation must still much more be connected with this sort of sociopolitical awareness. This requires, especially for young technicians and engineers, providing a deeper understanding of the connections between

their own work and the implementation of our economic strategy, which includes the political bearing it has on the class conflict with imperialism, whereby to develop the unconditional resolve as a personal contribution to it as a motive for performance behavior. General, personally casual insights into the need that socialism gain a higher capacity are of little use; what counts is the willingness to make an active contribution to it. Guiding everyone's insights into the social action requirements calls for converting the general open-mindedness to scientific-technical progress that does exist among us and has its source in our social security into enthusiasm for innovations and intolerance toward routine and indifference to scientific-technical modifications.

Promotion Through Challenge

The manner in which everyone is truly challenged in the labor process is what in fact permanently influences performance orientation and performance readiness. Not only does it reinforce the experience that society needs one's own labor achievement. It makes for pride in what one has accomplished and the satisfaction to be able to prove one's capabilities through work, to be able to test oneself and resolve intricate tasks, which is a large impulse particularly to scientific-technical work. Karl Marx has said about the self-realization of the individual that free, creative work always means the suspension of rest and constantly surmounting obstacles to realize certain goals.*

Especially coping with difficult situations and its social recognition provide that sense of worth and self-assurance that are needed in scientific-technical work to seek ambitious solutions and make courageous decisions for obtaining top achievements in world market standards. With respect to that, R&D associates are often still far too little challenged. Many of them even think they are underutilized, as sociological surveys show. But only where high demands are made will performance readiness develop. In some combines, e.g., it has become the rule to let designers take part in negotiations with potential buyers of their products, which confronts them directly with the demands made on their own performance and raises the level of the demands they themselves make on peak achievements.

Yet higher demands must not only be made on the scientific-technical level in the more narrow sense. Many engineers in research institutions can develop technically interesting solutions which are not necessarily also economically the best and most efficient variables. On the world market, however, only those innovations count that make for good sales and permit above-average savings in resources. That, e.g., requires of research to contribute to the development of export products that bring in maximum foreign exchange and to develop from the outset specific innovations for specific markets. For this increased economic efficacy of science and technology the scientific-technical intelligentsia must get better prepared. That includes, as Comrade Kurt Hager demanded before the party secretaries of the GDR colleges and universities, combining thorough specialized training with economic knowledge pertinent to practical concerns.**

*"Principles of the Critique of Political Economy," Dietz publishing house, Berlin, 1953, p 505.
**Cf. NEUES DEUTSCHLAND, 2 July 1982, p 2.

Similar tasks present themselves also for the development of performance readiness among production workers. Circa 81 percent of the working people in the GDR has completed vocational training, more than 70 percent of all working people, due to our party's purposeful educational policy, attended the general education polytechnical secondary school. That is a tremendous potential, a "golden treasure," that has to be used fully for that all working people gage their performances against what is possible by means of scientific-technical progress and make total use of their performance reserves.

Performance readiness and initiative prosper best through doing things together in the work collectives, comradely cooperation and mutual help, and through conveying work experiences. We must therefore go on fostering such accomplishments and carry them on in the growing generation. Yet this by itself is no longer enough today. To improve the tempo and economic efficacy of scientific-technical progress, we have to have a critical work atmosphere. For the fact is that performance readiness here not seldom means the courage to criticize deficient performance or to take issue with discipline violations. Only in a creative climate can conscious commitment to innovations and enthusiasm for ambitious scientific tasks grow. More than thus far, therefore, the performance criteria and norms for cooperating must not be brought to the collective by the manager from the outside, as it were, but each member of the collective himself must have a part in setting them down.

Qualifications for the Scientific-Technical Progress

High scientific-technical results leading to products that are easy to sell, material and energy saving technologies and innovations, a stable control over modern production techniques, in addition to a definite readiness for performance, call for fine technical skills. Time and time again the question is being raised how the socialist society enables the working people to come up with scientific-technical top achievements, and how throughout all phases--from training and education via advanced training all the way to the concrete requirements in the labor process--all the attitudes and knowledge are provided that are imperative for coping with innovator processes.

Among the elemental prerequisites for successful scientific-technical work doubtless is the ability to recognize problems and solve them creatively, to be creative. The needed lead for intensively expanded reproduction depends on original scientific solutions, results high in inventive substance, and innovative developments, hence on approaches that are definitely creative. It is erroneous to think that mediocrity in a creative approach can solely or primarily be surmounted through effective economic stimulation. The ability to act on one's own is formed throughout a lengthy developmental process and can deliberately be affected by society. To make headway here does not require any new and additional tasks, any new organizational forms. What matters instead is to stimulate creative thinking and imagination in the everyday educational and training process and heighten the ability for constructive criticism, which leads us ahead. One is still too little aware that the edifice of science can never be complete, that science is waiting for every capable young person, and that raising questions and testing things have not only in the past had a decisive share in the advances of science and technology.

Still today, scientific-technical work needs original thought, departure from encrusted schemes of thought and action. Many inventions have been made because someone said to himself things could be done better and more efficiently in different ways.

Closely linked with that is the task to foster and further develop technical, engineering-type thinking and approaches. To the extent that science and technology come to play an ever more important role in the life of society, understanding technical and technological connections commands a scope thus far not known. Especially in this field the most favorable preconditions have been created by the streamlined socialist educational system and the prudent and purposeful advanced training given the working people. Yet the know-how for the enthusiasm for scientific-technical projects ought to be focused on more in the experience exchange in all fields of training because that, after all, sets the switches for the scientific-technical personnel of the future.

Of special weight for forming a new generation of scientists and technicians furthermore is "to make still much more of all opportunities for spotting gifts and talents at a good time, developing them purposefully and encouraging them systematically."* In championship sports we manage the selection and the training for those with special gifts well. The current and even more the future efficiency requirements of the economy require, in analogy with sports, contesting for a growing number of gold medals for world standards in science and technology as well. Aggressively reacting to the adversary's competition, seeking to do better in many ways in science and technology and be tops in the world in certain fields--that means class struggle today and amounts to a great obligation and responsibility to bringing up a new generation. With all the big access to topnotch education, the socialist society has the crucial preconditions also in the scientific-technical field for assuring everyone of every chance to develop his abilities.

So that the good work done in training and education will make all the difference economically, it must be extended and perfected by prudently assigning the young scientific-technical personnel and by drawing them purposefully into solving ambitious research tasks. To that end we must with the greatest care select the most suitable personnel for the fulfilment of certain tasks. Though considerable advances have been made, it still calls for great efforts and thought effectively to control this process that so frequently decides the success in personnel work. A routine type of guidance of graduates sometimes, without checking in detail whether they are in fact well suited, is of little benefit to society and does not help an individual to find his place in our life.

Closer cooperation still between industrial research facilities and colleges and universities clearly broadens the field of opportunities for selecting suitable graduates with a high degree of certainty and familiarizing them early with the problems of their future work. At the same time it has turned out to be a fact in the work of many industrial research facilities that

*Comrade Erich Honecker, op. cit., p 98.

wherever the premises were set for the highest scientific and inventive achievements of young researchers, commensurate results were achieved. That is not astonishing, as the history of modern natural sciences and technology, after all, knows many examples that show that relatively young scientists and engineers have come up with important inventions and discoveries. The average age of important inventors and discoverers at the time of their major achievement has been around 35; more than one-third was not yet beyond 30 years of age.*

Especially today the point is to lead enough capable young scientists and technicians purposefully up to the focal points of science and technology and hand over to them high targets of scientific and economic responsibility. There still are many graduates that are not fully challenged. Lengthy breaking-in periods, filled with routine activities, not only cut down the performance readiness of young engineers and researchers, however, but set signals for the rest of their lives that are socially undesirable. Routine activities and indifferent tasks on the side-tracks of scientific-technical progress can ready no one for high creative achievements. Rather, the breaking-in period must set the conditions, through very hard demands, for fully recognizing and promoting the actual abilities of the young and their suitability for research. To the extent that our economic growth depends more and more on high achievements in science and technology, the readiness and ability of the working people to cope with scientific-technical progress is gaining a weight of the first order for continued social development. There are without doubt extensive reserves in this field. They have to be tapped in such a way that they become effective, more than they have, as impulses of the scientific-technical revolution for our intensively expanded reproduction.

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STEEL COMBINE DIRECTOR ON RESEARCH, PRODUCTION SPEEDUP

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['Science in Our Society' feature article by Dr Manfred Drodowsky, engineer, general director, VEB Hermann Matern Strip Steel Combine, Eisenhuettenstadt: "Time Saving Through Rapid Transition"]

[Text] To get more of an effect from all available material and intellectual potentials primarily means turning science and technology into a more powerful source of the current performance growth and, at the same time, ensuring the requisite scientific-technical lead for the intensively expanded reproduction of the future. As in all other metallurgical combines, the initiatives of the working people in the Hermann Matern Strip Steel Combine, Eisenhuettenstadt, therefore are aimed at securing the required performance growth by ever improving control over the scientific-technical innovator process and, in particular, by developing refining metallurgy. In order to meet all future market demands this way and achieve high efficiency, it is necessary to set new challenging goals for our scientific-technical work. And the time factor also has to be given more weight, as the speedup of the entire reproduction process, after all, deserves central attention. Whether a new product is worthwhile economically, that depends on how long it takes to develop it, how fast it can be put into mass production, how long the production takes, and the time it reaches the market. "Time saving is not a matter of a few percentages but of multiples,"* Comrade Erich Honecker asserted at the fifth SED Central Committee session.

High economic results by way of refining also in our combine calls for concentration on top achievements in science and technology and their rapid transition to production. In concrete terms this means:

--Product quality must be further improved. That is a task of high economic importance because our combine, handling 74 percent of the crude iron produced in the GDR and as almost the sole producer of cold-rolled and surface-refined sheets and strips, supplies more than 1,800 enterprises. The more our combine succeeds in more enhanced refining of available raw materials, the better

*"Aus dem Schlusswort des Genossen Erich Honecker, 5. Tagung des ZK der SED" (From the Concluding Speech by Comrade Erich Honecker--Fifth SED Central Committee Session), Dietz publishing house, Berlin, 1982, p 27.

the prerequisites become for the processing industry greatly to reduce its metal consumption and improve its own product quality.

--Highly efficient technologies have to be introduced much faster. When the average gauge is reduced in the cold-rolling of sheets, more of them are produced. Specific steel consumption can thus be reduced between 10 and 12 percent up to 1985. Of economic significance also is the introduction of the oxygen conversion method and continuous casting when, according to plan, the converter steel plant in Eisenhuetten Combine East comes into operation. In comparison with the current technology, energy consumption will then be reduced by 28 percent per ton of steel semifabricates, material consumption by 13 percent, and labor productivity is increased by multiples.

--It becomes more important to use domestic raw materials and energy sources and to develop and apply new procedures and technologies in energy source substitution, e.g. by using brown coal high temperature coke dust as extra fuel in the furnaces and by intensifying secondary energy production.

Concentration on Focal Points in Scientific-Technical Work

For 10 months we have been concentrating a large R&D potential on the twelve efficiency controlling major tasking areas of the combine. We are resorting to the initiative "Ideas, Solutions, Patents" for it to achieve a higher level of scientific-technical work. Originated by the working people in the Frankfurt/Oder semiconductor plant, that initiative is aimed at performance goals in the development, use and economic utilization of the scientific-technical progress exceeding the measure and target set thus far. That movement makes high demands on the political position of all involved. It means, after all, measuring oneself implacably against the international state of development and examining to what extent the target and result of the work comply with the economic requirements. This calls for honestly assessing within the collective the material-technical reserves available for performance improvement and exploring what performance growth can be made possible through the personal commitment of each. It calls for and promotes the risk readiness of the researchers, developers and designers, of the technicians, innovators and rationalizers.

"Ideas, Solutions, Patents" aims at concretely setting down the major tasking projects that have to be taken care of to ensure the necessary scientific-technical lead for the combine's future performance growth. This speeds up the transition processes, improves the efficiency of existing technologies and the product quality, and closely involves the solution of the tasks in the construction of means of rationalization with its production of industrial robots and devices in that periphery. In using this very initiative, we have let ourselves be guided by that an efficient scientific-technical effort presupposes deriving concrete requirements from clear conceptual developmental lines in the combine and calls for the unity of scientific-technical and economic requirements. The basis for determining our combine's major tasking projects therefore was a research report prepared jointly with scientists of the GDR Academy of Sciences. That was supplemented by the research trends derived from the combine's R&D plan and the concepts for assigning industrial

robots and microcomputers. All ongoing scientific-technical projects were subjected to an economic analysis, in the outcome of which those projects were dropped that did not serve the solution of the major tasking projects set down.

High demands are going to be made in the years ahead on the scientific-technical work if we consider that the required performance growth up to 1985 must by at least 90 percent be accomplished through enhanced refinement of metallurgical raw materials and products. By means of new ideas, solutions and patents the researchers, engineers and innovators therefore seek to raise the proportion of top achievements by at least 50 percent in introductory and quality tasks of the science and technology plan, and by at least 60 percent in the new ratification of the tasking workbooks (Pflichtenhefte), so that the profit from patents will double and the benefit from giving out licenses will triple.

These major tasking projects are being taken care of by realization collectives that are made up of specialists belonging to various sectors in the enterprise. They include in their work many innovators and working people, even apprentices. There is, e.g., a realization collective, "setting the robots," which has 11 members and has another 90 working people take part in the effort. This led to success by rapidly applying the scientific-technical progress. Let us take one example: In view of the thriftiest handling of blast furnace coke required, the collectives in R&D and in crude iron production were faced with the task to find ways for using industrial coke in the blast furnace process. The collectives got into this task with great elan. Trials for working out the technological procedure were carried out at short shrift. Holding expenses down, they made this economically highly effective.

A High Efficiency Gain

To all collectives working within the framework of "ideas, solutions, patents," the following applies: The requirement and the form of this work compel cooperative efforts which, far beyond the scope of a normal research program, set down as binding and in very great detail the responsibilities of all members in R&D, technology, production and sales, where everyone then assumes his clearly delineated responsibility. In party activists' conferences and show steward plena, on intensification conferences and in master workmen's consultations, the political concern of the initiative and its objectives were therefore explained, and it was also explained how performance growth and intensively expanded reproduction hang together and why economic growth presupposes higher efficiency. They conferred on the role of the time factor and the high demands for creativeness and performance by the collective and each individual, required for strengthening our republic in view of the exacerbated international class conflict. So it became possible to evolve a cohesive campaign position of the entire enterprise collective seeking a speed-up of scientific-technical progress and to enhance its own confidence in its capacity.

It did not go smoothly. Many doubts had to be dispelled. When the realization collective in charge of developing a universal robot set posed the task to start testing the prototype after a 5-month development, there were many

who thought it impossible to meet that deadline because of problems and risks, because of the difficulties in component procurement and processing. Yet the realization collective did not let itself be deterred by it. Hot discussions ensued about how to do it, variables were critically examined--and the outcome was that the task was solved with success. Now new questions have to be answered, because 37 different applications for the various models of this robot are under discussion in our combine, and new efforts are needed to bring it all about.

That the concentration of the intellectual-creative potential on major tasking projects and the involvement of broad circles of working people in taking care of it lead to results that far surpass the action radius of the combine itself, has also been demonstrated by the realization collective in surplus sheet production. It tackled a materials economy task of economic significance in producing from the available raw material more cold-rolled sheets and strips and thereby improved the input/output ratio of the final product without impinging on its quality. If in cold-rolling 127.38 square meters of sheet at a 1-millimeter gauge are produced per ton, one gets at a 0.9 millimeter gauge 14.16 square meters more, for all that.

Many problems had to be settled in all this because a gauge reduction for sheets and strips brings it about for many users in the processing industry, e.g., that tools, designs and standards have to be modified. Coping with such processes calls for intensive cooperative efforts with the customers, and for the involvement of ASMW (Standardization, Measurement and Commodity Testing Office) and the steel consultation authority, to surmount difficulties and reservations. The TGL (GDR norm) for cold-rolled sheets and strips had to be expanded at once. But the success speaks for itself. In 1981, with the same base material, we produced already 3.4 million square meters more of sheets and strips, and 1982 also provided similar effects.

In drawing up a balance-sheet today we may state that this approach which was marked decisively by the purposeful development of the initiative, fighting spirit and sense of responsibility of the working people, has speeded up scientific-technical progress. Altogether we brought it about by means of the initiative on "ideas, solutions, patents," that a work force of circa 2,500--scientists, technicians, project planners, designers, and the employees in the construction of the means of rationalization and in the future areas of application--together are seeking a rapid production effectiveness of new scientific-technical data. The forming of model collectives has a great deal to do with this. They got special support from combine management, but exceptional accomplishments were demanded of them. Their example has challenged other collectives to follow in their footsteps.

We have garnered rich experiences since we concentrated the combine on major scientific-technical tasking projects. They confirm it was correct to direct innovator processes with purpose and organize comprehensive political mass activity on the basis of a clear campaign position by the party collectives, which all serves to speed up scientific-technical progress. The results, which are speaking for themselves, confirm the remark from Comrade Erich Honecker: "We have all it takes to achieve a high economy through modern technology."*

*Ibid.

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SIGNIFICANCE OF INTERDISCIPLINARY BASIC RESEARCH EXPLAINED

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['Science in Our Society' feature article by Prof Dr Reinhard Probst, candidate member, SED Central Committee; rector, Otto von Guericke Technical College, Magdeburg: "Basic Research Today--Efficiency Tomorrow: On the Utilization of the Economic Potential of Otto von Guericke Technical College, Magdeburg"]

[Text] The economic strategy issued by the 10th party congress in a clear conception has fully explained both the growth of social production and a fundamental science requirement. Considering that the possibilities of our scientific-technical revolution have become the chief reserve for the performance growth and efficiency improvement of our economy and that we are investing the by far largest part of our country's science potential in bringing those possibilities to realization, it is a task of the highest priority clearly to outline the social, especially the economic, demands made on the development of our science potential, its structuring, expansion and utilization. Our party has made a big point of the fact that rigorously carrying on the main task course--particularly under the fundamentally altered reproduction conditions of the 1980's--poses the high demand not only to keep in step with the scientific-technical revolution that is growing in speed and range worldwide, but to gain ground, too. Therefore it is all the more important to assess this process of the scientific-technical revolution as soberly and accurately as possible in order to determine on that basis the chief trends that will best conform to the givens and requirements in our country in the present and future and take account of the increasingly closer linkage between the GDR's economic and science potential and that of the USSR and the other CEMA countries.

These main trends, as relevant to our society, were decided on by the SED Central Committee Politburo after thorough discussions with leading scientists in the various disciplines. They were set down in research conceptions such as those on the long-range development of basic research in mathematics and the natural sciences and on selected technical trends, which have formed the basis of our work since 1976.

As developments in recent years have shown, this long-range determination of the basic research trends has had positive effects. It became possible further to expand the basic research potential and concentrate it on priorities whereby--through the use of the advantage of planned development that is characteristic of socialist society--academic research was still more solidly integrated in the overall potential. From the vantage point of our college it can be confirmed today that in this manner research has become more concentrated and purposeful, interdisciplinary research has made headway, and the cooperation relations with science partners and combines have increasingly become closer and more viable.

No special proof is needed surely for that the long-range conceptions, to yield maximum effects, require in a special way constant checking against realities so that we can react fast to any visible new processes, tendencies, insights and requirements. Our college therefore has used great care in constantly testing and specifying our tasks, as derived from the main trends decided on, in basic research in mathematics, natural sciences and technical basic research for a five-year plan period--e.g. on the development and use of microelectronics and digital and nondigital circuits, on ADP, the improvement of the technical level, and the development and use of industrial robots. By following up the third SED Central Committee session, our college has reexamined its research tasks for 1982 and the objectives of our 1983 research plan. By still more strongly concentrating our basic and applied research on priority tasks, by forming interdisciplinary research communities that include industry, and by other measures in science organization, it will become possible to achieve higher performance goals and briefer processing periods. Thereby a larger scientific-technical lead can be created for such economic priorities as
--the rationalization and automation of production preparation processes and the production and automation of the products of heavy machine construction and installations construction through microelectronics, the use of industrial robots and ADP;
--the development and further development of efficient processes and techniques for the refining of raw and working materials, including coal refinement; and
--a greater materials and energy economy.

Application-Oriented Basic Research--Starting Point for Original Solutions

The concentration of capacities in our college on such priorities, in line with our party's economic and science strategy, presupposes a clear position on basic research and a high commitment to it. Through a targeted and application-oriented basic research, which makes up an essential part of the research done at our college, new knowledge is being produced through a creative process and questions are being settled that arise during technical development, while the economic and social aspects of the scientific-technical progress are always to be taken into account. In the process of clarifying fundamental problems, basic research constantly raises new questions, it being the point of departure for original solutions and achievements in auspicious fields of science and technology. Thereby data are elaborated that produce the modern technology and production of tomorrow. Many insights, discoveries and inventions originating in basic research have revolutionized scientific-technical and economic developments and are opening up new dimensions. So one has to be

cognizant of the fact that today's basic research plants the seed for each scientific-technical top achievement we need as prerequisite for new products, processes and technologies up to the end of our century.

Even though the place value basic research holds for modern, efficient production and effective technologies and products has now long been taken for granted, it is not always granted the place it deserves in industrial research, as our research cooperation has determined. Under pressure from scientific-technical problems of the day, the basic research tasks for the technology and production of tomorrow are being set aside there at times or handled with reduced capacities. Yet acting that way means, figuratively speaking, throwing good money after bad because everyday scientific-technical problems can be settled relatively quickly by a low investment of costs and time when an adequate mental lead has been ensured through solid, branch-specific basic research. And it is not merely a matter of a cognitional lead. It is characteristic of basic research that it challenges and fosters the creative thoughts and actions of scientific-technical personnel, stimulates their imagination, and sharpens the view for the scientific requirements that have to be derived from social development. So it ignites various impulses for considerations and decisions that reach far into the future and can crucially affect technology and production.

All this underscores that our party's clear orientation to a systematic development of basic research, expressing its high responsibility for the well-being of our people and the future of our country, amounts to a high moral obligation also for those who do research and teach at our college. In no other way, in fact, can one talk of actively shaping the future and can the efficiency and growth problems that have evolved be solved. How can new products tomorrow be manufactured, e.g., with high productivity and low in costs if the mental lead for future developments is lacking? Would we not with great likelihood program into our industrial products, through neglecting basic research, their not being saleable later on the world market, with a reduced national income becoming inevitable?

Natural science and technical basic research still remains of great benefit to society even when partial results are quickly turned into new procedures, technologies and products of high economic effectiveness. The unity of teaching and research, theory and practice, which is part and parcel of a technical college, emphatically supports such aspirations and therefore also always urges the convertibility of partial data. That of course presupposes close cooperation with the partners in the practical field. That makes for a solid basis for constructive cooperation which furthers the technical-economic development of the enterprise as much as it benefits the education, training and skills of the students and the staff at the college and the advanced training for the combine personnel.

Research Data of Economic Value

In conformity with our party's economic strategy, application-oriented basic research at our college pays great attention to materials research, which affects all economic sectors. Scientists at our college have for many years

been working on defining the tensile strength of polycrystalline materials, the interconnection between stress, material characteristics and the microstructure, and the testing of material features, by technical physics methods. In the scope of this research, special attention is given to tensil strength and uninjurious material testing. These scientific accomplishments were initiated by the national prize laureate Prof Dr Ernst Schiebold and are carried on by his disciples and so, since the technical college was founded 30 years ago, basic research on materials and solid state physics has been going on. By developing procedures for rating the quality and reliability of technical products, explaining the mechanisms of tears and fractures in metallic materials, and improving the solidity and toughness features of metals and so forth, these researchers were able to accomplish recognized scientific achievements and considerable economic results.

Tasks in assessing the features, use properties and refining of materials are an essential component of most technological and product-oriented research tasks or touch on them so that the research on materials is increasingly interested in them. This explains that at present basic research on materials is gaining an increasing importance for reliable technical solutions of the materials economy tasks of tomorrow.

But high expectations are placed also in that kind of research for handling problems on the agenda today. That includes the development of efficient devides and facilities for property testing. Together with making better use of the testing equipment we have and through close socialist cooperative efforts together with the combines, we are trying very hard, by building efficient devices that can be used in industry, to improve the availability of devices and their aggregates for research and industry. The more complex scientific-technical requirements call for making a better use here of the experiences of such science disciplines as physics, electronics, thermodynamics and ADP and expanding the R&D collective by including specialists from those disciplines.

As exceptionally useful to our economy those results of long-range basic research have turned out to be the efforts of which in 1976 led to the setting up of the "nondestructive material testing" methods and diagnostic center at our college. It attests to the recognition of its scientific achievements of course that many combines have approached that center with so many requirements that our college with its capacities can hardly handle them all any longer. To us it is therefore all the more important to exhaust all science cooperation opportunities--up to cooperating within the CEMA framework--to gain time and further economic benefits.

For nondestructive material testing, science cooperation is of special importance, with the Moscow Energy Institute, for instance. It is aimed at developing or perfecting complex methods for nondestructive testing of metals. In the outcome of this cooperation a testing device was developed which is at present the smallest defectometer in the world. The successful testing of this device and its fine performance under industrial conditions have induced us to ventilate possibilities for manufacturing other test models.

We may also mention our cooperation with the United Nuclear Research Institute in Dubno, which permits our scientists to carry on investigations in neutron physics on the structure of condensed matter on a channel of the new impulse reactor. Such basic research is also an important basis for developing new material testing methods. They permit designing further construction lines in the scientific work in solid state physics, material testing or tribotechniques and make us gain data which promise considerable results in our materials economy. These examples underscore how important international scientific-technical cooperation is both in basic and applied research, for immediate economic benefits as well for promoting a new highly qualified science generation.

High Technical Knowledge and Impassioned Commitment

The higher research requirements raise many questions about the structure of substance in the further training and advanced training, which we are not going to discuss at this point in any detail. In general, what counts here is, in line with our economic strategy, to provide the students, e.g., with the most up-to-date science data on the automation of production preparation and producing sectors by means of microelectronics and, in connection with providing such instruction, instil in them the firm resolve to apply their knowledge and skills even under the toughest conditions for the sake of society. That obligates us to work with the students and the new science and technology generation in such a way that their intellectual potential is made use of and their whole personality is challenged. By offering them chances to excel and setting high goals even while they still study, they gather experience and come to comprehend ever more profoundly that the socialist society, which offers them rich opportunities to develop their personality, has every good reason to expect of them diligence, an eagerness to work, and a full personal dedication to creative achievements. This makes the close cooperation between the college and socialist practice, and the involving of students and the new science generation in basic and applied research, indispensable for education and training. This promotes working creatively in the sciences with all the high demands made on the sense of responsibility, endurance and reliability. Particularly by their direct involvement in research the young people come to understand better the change going on in techniques, technological processes and the economic structure, which is going to speed up further in the 1980's and which compels them to keep learning throughout their whole lives--especially in basic research--and never to settle for what they once learned. Many noted scientists, researchers and technicians--reviewing their lives--have confessed how much their own research drive, their scientific zeal, even their personal inclinations, were formed by the models set by their teachers, who would encourage them and, at once, demand the most of them. Aware of this responsibility as college teachers, we seek to turn studies, science candidacies and assistantships into testing grounds for capabilities and, e.g., make graduate projects ever more substantive. More than 90 percent of all graduate projects at our college deals with research problems, roughly 40 percent of that, with matters of basic research, and 60 percent, with applied research. We set great store by fully exhausting the various chances a college has to do interdisciplinary research. This, naturally, calls for solid disciplinary science work, for the ability to cooperate, and for the readiness for collective efforts.

That precisely those characteristics are most critical to making research productive and are becoming ever more important is something that right now all those are finding out who are creating at our college, in the research community for "autonomous production structures for low-service operation," together with representatives from the heavy machine construction combines, strategies for a gradual automation of mechanical production. That research is marked by an increasing fusion between mathematical and natural science and technical-technological basic research and social science research. From a snappy transition of its data into production a high benefit results: a considerable boost in labor productivity with working conditions improving, a release of manpower and a greater reliability of technological processes. Handling this complex research task makes high demands on the selection and assignment of all associates and on the level of disciplinary research and interdisciplinary cooperative work. Solid research activity in the various science disciplines (disciplinary research) alone provides the intellectual lead and, thus, the most important precondition for being able to undertake in the first place the complex research problems and the necessary combining of scientific-technical personnel within a research community.

The great importance profound technical training and education for socially committed actions have for future top achievements in science and technology underscores the need and significance of appropriate purposeful political-ideological work, especially of effective party work. This work mainly fulfils its purpose when the economic and scientific objectives are clearly understood as well as the personal performance requirements resulting from them, when the awareness and political steadfastness of each individual are strengthened, and when the communists--be they students or college teachers--set examples in their collectives by what they do there, because that greatly controls the contribution each will make to solving the tasks our society faces. The quality of the party's political leadership activity at the college ultimately is found in how great its contribution is to boosting our country's scientific-technical potential, and how much the personnel that evolved from it meets the challenges of the scientific-technical revolution by means of practical achievements as well as in basic and applied research.

* * *

A survey of important achievements by mathematicians and natural scientists (the analysis took account of 61 mathematicians, 136 physicists, 91 chemists and 173 biologists and physicians; giving us a total of 461 scientists) brought out that almost one-third of these scientists had started their first important project already at the age of 30. For almost three-fourths, the start was made at the age of 40. This gives us an average age of circa 36.

Completion of the first important projects according to age-groups:

Age	Number	Percent
up to 30	134	29.0
31-35	86	18.7
36-40	84	18.2
41-45	71	15.4
above 45	86	18.7
Totals	461	100.0

Two-thirds completed the first important contribution by the age of 40. (Source: Helmut Koziolek, "Wissenschaft, Technik und Reproduktion," Verlag Die Wirtschaft, Berlin, 1981, pp 144 ff.)

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'TASKING WORKBOOK'S' IMPORTANCE AS S&T MANAGEMENT TOOL EXPLAINED

East Berlin EINHEIT in German Vol 38 No 2, Feb 83 (signed to press 13 Jan 83) pp 153-157

['Science in Our Society' feature article by Dr Herbert Weiz, economist, member, SED Central Committee; deputy chairman, GDR Council of Ministers; minister for science and technology: "The Tasking Workbook as Management Tool in Research and Technology." A translation of the official text of the Tasking Workbook Decree (Pflichtenheft-Verordnung), cited in footnote 2, is published under the heading, "Development, Production of Quality Consumer Goods Urged," in a recent JPRS issue of this series.]

[Text] High scientific-technical achievements are critical for a continued dynamic economic growth and an increased efficiency of it, and for a further deepening of production intensification, as called for by the 1983 plan targets. That has made it the centerpiece of management and planning in research and technology to turn economics still more effectively into the starting point and goal of scientific-technical work. Therein lies the key issue for scientific-technical work fully and completley to meet the economic strategy for the 1980's as explained by Comrade Erich Honecker at the 10th SED Congress. It means in particular deriving our R&D tasks consistently from economic requirements, concentrating intellectual and material potentials on rapid solutions for them, and making comprehensive use of the results.

Its urgency is underscored by that this year M 9.3 billion are set aside for science and technology and R&D has nearly 200,000 employees. Such important intellectual and material resources have to be invested with the highest efficiency. That is crucial to bringing the labor productivity growth rates more in line with the science and technology expenditures in accordance with the intensification requirements.*

Crucial is that R&D projects are from the outset based on goals oriented to the highest economic productivity of science and technology. The much greater criteria for boosting the labor productivity and reducing production consumption, for improving qualities, fulfilling export tasks and substituting for imports are therefore indispensable criteria for the development and

*Cf. "Aus dem Schlusswort des Genossen Erich Honecker, 4. Tagung des ZK der SED" (From the Concluding Speech by Comrade Erich Honecker, Fourth SED Central Committee Session), Dietz publishing house, Berlin, 1982, p 93.

introduction of new products, procedures and technologies. That is tied up with the task to increase the number of scientific-technical top achievements, refine domestic raw materials and energy sources with the highest effectiveness and enforce for machines, equipment and consumer goods a level on a broad basis that will help set progressive international standards.

In view of the tremendous development of science and technology and the great number of variables for solutions coming out of research, determining the tasks in accordance with these demands is extremely complicated and responsible. Every purposeful thrust toward new knowledge, new products and procedures--be it in the field of microelectronics, robot technology, biotechnology or chemistry--requires that one knows what one wants, where one wants to get, until when the innovation is to be realized--in other words: which benefit society is to derive from it.

This presupposes sound analytic-prognostic work and an accurate knowledge about the main developmental trends in science and technology. The results of comparisons with progressive international standards have to be taken into account more consistently, market analysis must become more rigorous, and we must uncover more production opportunities on the basis of domestic resources. That way one can make sure that gaining and utilizing science data is not left to chance and the R&D potential is concentrated on priority tasks, to maintain and expand our products' competitiveness on the foreign markets and speed up the formation of an efficient production and export structure.

Translating the economic performance requirements set down in the plans into concrete orders for the collectives in R&D, design and technology makes the highest demands on the management activity of the general directors of the combines. In this the tasking workbooks (Pflichtenhefte) have been found to be indispensable for years. Wherever one works with them expertly--from the preparation of tasks via their implementation and the use of the results--success will not fail.

As the social division of labor is further deepening also in research and technology, much time can be gained through good cooperation and organization in getting set for and enforcing technical innovations. That is why growing importance attaches to cooperative work among researchers, developers and cooperation partners all the way to production and sales. One must organize in good time the cooperation with the suppliers and derive the tasks for one's own construction of means of rationalization, e.g. for the development and construction of tools, devices and lessons, and must take care of the requirements in materially and technically securing the transition.

In this creative cooperation, the tasking workbook has a firm place; at an early stage in the game it must already function as a viable basis for controlling the division of labor processes in R&D and in the transition. Through the tasking workbooks, scientific-technical work becomes still more soundly plannable and the advantages of our socialist planned economy can better still be used and important performance reserves can be tapped thereby. For those reasons, the party decisions on making the planning and management of science and technology more expert (November 1981) and the subsequent legal regulations make so much of the role of the tasking workbooks.

An Ascertainable Growth in Efficiency

Through the mandatory use of tasking workbooks* in the economy, the management and planning of science and technology on the whole were adapted to the requirements for a speedup in the growth of efficiency. Advances toward a higher efficiency of science and technology achieved in 1982 are largely based on that.

In fully reviewing the circa 20,000 R&D tasks of the 1982 plan in the producing sectors, it was made sure that each task is based on a confirmed tasking workbook. Thus, through taking account of new possible solutions, the targets for the production and export effectiveness and for the cutback in material, energy and working hours could often be made more specific and, in part, raised considerably. At the same time, possibilities were found for that roughly two-thirds of the tasks can be brought to realization in no more than 2 years.

Far more than 4,000 tasking workbooks had to be prepared for the 1982 science and technology plans. The production results are to become effective in 1983 mainly and next year. To raise more rapidly the level and speed in the main trends of the scientific-technical progress, more than 300 tasking workbooks were prepared and defended for the economically most important projects under the science and technology state plan. They are responsible for that circa 90 percent of the introductory tasks in the 1983 science and technology state plan lead to top achievements. The tasking workbooks that are to be prepared in 1983 also must significantly help achieve the economic targets of the five-year plan and, in part, meet requirements going far beyond them, e.g. in the saving of energy, rolled steel, nonferrous metal and synthetics. It includes also gaining leads for the future procedural and products developments.

Altogether, these results reflect that thinking about performance requirements and about the input and output of each scientific-technical task is paying off ever better. Yet there are still inequalities in the status achieved. For instance, the fact that in 1982 merely 38 percent of the tasks outside the state plan in industry and construction was aimed at top levels, suggests significant performance reserves which virtually remained unused even at the time that the tasking workbooks were being prepared. It is all the more important then that the combines, enterprises and science institutions turn the efforts for top achievements more still into the focal point of their political-ideological work. The managers are advised to meet high-level demands with an iron will and resolutely come to grips with signs of mediocrity. Their words of persuasion and their examples are exceedingly important so that the collectives become fully aware of the range of their tasks and identify with the heightened performance requirements.

A high R&D level and a broad use made of its data require more than ever a direct and personal influence from the general dicrectors of the combines. It is up to them to apply all the knowledge the combine has to drawing up the tasking workbooks and organize to that end the collective efforts of all sectors in the combine. Too often the main job in setting economic goals and implementation conditions is still left to the researchers. Too often it still happens that, because of inadequate correlation with foreign trade, export products are developed that do not fully meet specific market demands. One also finds that the determination of targets is in some places approached with too

*GESETZBLATT DER DEUTSCHEN DEMOKRATISCHEN REPUBLIK, Part I, No 1, 14 Jan 82, pp 1 ff.

much reluctance, the preassigned level is not attained, the angle is too narrow and the view not broad enough. During 1982, e.g., the Standardization, Measurement and Commodity Testing Office had to turn down circa 15 percent of the tasking workbooks for new commodities because their targets in part remained far below advanced international standards.

A higher economic productivity of science and technology inseparably depends on inventions, on patentable solutions. It has been found useful to orient to a high patentability even for the tasking workbooks' requirements. That means working out those fundamental technical problems or intrinsic value parameters that call for solutions which will surpass international standards.

Tasking workbooks are gaining increasing importance for the progressive cooperation between industry and the institutions of the GDR Academy of Sciences and the universities. Even if initially one may but explore what is feasible in the perimeter of technical utilization, it still is of high value to stake out the goal and the approach with sufficient precision even there, organize interdisciplinary efforts derived from it, and involve the users early in the game. To ensure a seamless transition of data from science to production, what has mainly been found fruitful is a coordinated proceeding by the collectives in the sectors referred to in sounding newly discovered procedural principles for their applicability and their conversion into concrete commodity and technology developments.

Also for the international research cooperation, clear targets and requirements and a prudent coordination of efforts are important. Our efforts are aimed at gaining time and efficiency in crucial areas of the scientific-technical progress for the economy by joining forces with the USSR and the other CEMA countries. Every day of cooperation reveals that truly great possibilities can be opened up through research cooperation and that conceptual clarity and high achievements of one's own are prerequisite to fully exhausting all potentials contained in it. And so it is of benefit to apply the experiences gained from tasking workbooks in our scientific-technical cooperation.

What Now Matters

An analysis of the experiences gathered through the tasking workbooks has led to some general conclusions. They are in substance aimed at elevating their role in the management activity of the general directors, making the work with tasking workbooks more skillful throughout, and strengthening the effect they can have on R&D achievements. It must be taken under advisement here that the science and technology contribution to solving economic tasks will be all the greater, the better one succeeds in combining the preparation and utilization of R&D data with the entire reproduction process. That calls for proper accounting as soon as requirements are assigned in turning maximum economy for the enterprise, the combine and the entire economy into the criterion for new scientific-technical solutions.

From this vantage point, improving the work with the tasking workbooks plays a central role in providing management and planning of scientific-technical work with expertise. This is indissolubly linked with enforcing decisive

innovator processes within the scope of state orders and with a task-related processing of central assignments for the sake of economic efficiency in research and technology. The tasking workbook obtains a special place value in drawing science and technology into the economic cost accounting in the combines, enterprises and science institutions and their linkage with the plan. A support and control activity by the competent central state organs also is of crucial importance to this.

For the further work, the following priorities are inferred:

First, the general directors must turn the tasking workbooks still more into a connecting link in transforming planning targets into scientific-technical tasks, into a decisive tool for high performance demands made on research and technology. The consequence of that is to pass in the outcome of the initial defense only on such economic and scientific-technical targets that meet economic efficiency requirements. That entails a favorable input/output ratio and a brief realization time frame that would not lag behind the internationally faster developmental speed. By demonstrating the cost/benefit ratio one must find out clearly in every given case that the work in the research and technology sectors will in fact lead to the requisite higher efficiency of the reproduction process. Thus the tasking workbook must effectively help speed up the time frame from research to sales considerably, in accordance with the demands raised at the fifth Central Committee session. "How long the development of a new product takes, how fast it is put into mass production, how rapid the transition of the technology is, how long production takes, and how long it takes for the product to come onto the market--all that decides its economic profitability."*

Second, a properly timed, comprehensive and, with it, rational preparation of the tasking workbooks must receive much more attention from the ministries, combines and enterprises. In the general directors' management activity, special attention must be paid to that the cooperation partners, particularly the users of the scientific-technical results and the important ancillary suppliers, as well as those responsible in the foreign trade enterprises, get involved in the effort even while the objectives are being worked out, whereupon they can make binding declarations on the targets during the initial defense.

Third, it must be enforced in general that the tasking workbooks become the basis for funding scientific-technical projects. "Scientific-technical tasks may be signed off on and funds may be released for them not until their economic performance goals are clearly oriented to the international market and productivity requirements,"** and an optimum cost/benefit ratio is anticipated. That is an indispensable condition for enhancing the economic efficacy of science and technology; account of that has to be taken in all phases of the research, development and transition process.

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*"Aus dem Schlusswort des Genossen Erich Honecker, 5. Tagung des ZK der SED," Dietz publishing house, Berlin, 1982, p 27.

**Comrade Hermann Axen, "Aus dem Bericht des Politbueros an die 5. Tagung des ZK der SED" (From the Politburo Report to the Fifth SED Central Committee Session), Dietz publishing house, Berlin, 1982, p 38.

Fourth, the tasking workbook must consistently be made the basis for the cost accounting for the task, for the real economic computation for the achievement obtained with regard to established targets and international standards. That also means that on behalf of a greatly updated production, the work with the tasking workbook has to be closely linked with preparing and implementing the plans of the combine or enterprise. The production volume of new products comes under central planning for the first time this year. The starting point for it, in particular, must be the targets of the tasking workbooks and the results of the final defense, which must assume the full authority of the plans.

Fifth, the tasking workbook is to be turned into the authoritative basis for the performance rating and the further enforcement of the socialist performance principle in the scientific-technical sectors. Placed in the forefront here is the application of target-related performance bonuses, above and beyond the salaries, for college and technical school graduates and additional forms of material and moral incentives, all in relation to preassigned targets and results achieved. Such incentives must be made dependent on criteria that will make apparent what the researchers' performance contribution has concretely been, and it must be recorded in the tasking workbook. That includes mainly the scientific-technical level that was to be attained, the improved exportability, and the cost reduction attainable. This then makes the tasking workbooks a decisive basis for the socialist competition in the research and development sectors.

The high expectations placed on the tasking workbooks will be met if the work with them gets fully integrated in the management and planning of science and technology and is done most rationally. That means ensuring a snappy preparation for them, and not permitting any formalism that might suffocate ideas or block initiatives. Taking healthy risks in setting down economic and scientific-technical targets is in the economic interest. Only in that sense then can the tasking workbook make a difference as a compass for high scientific-technical achievements and can it meet its function in concretizing the economic strategy of the 10th party congress.

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CLOSER AGRICULTURAL, INDUSTRIAL RESEARCH COOPERATION URGED

East Berlin EINHEIT in German Vol 38 No 2, Feb 83 (signed to press 13 Jan 83) pp 158-160

['Science in Our Society' feature report by Dr Bernhard Larisch, Institute for Agricultural Economics, GDR Academy of Agricultural Sciences: "Agricultural Science Focusing on Practical Application"]

[Text] In November 1982, a science conference was held at the Meissen College for Agricultural Production Cooperatives which dealt with the subject, "Tasks in carrying on the intensification of agriculture in the 1980's to increase production and efficiency and implications for agricultural-economic research, instruction and advanced education." Approximately 300 farm economists from the practical field and from research and instruction, party workers and representatives of state institutions conferred there on how agricultural-economic science together with technical, technological and natural science disciplines, and in close cooperation with the practical field, could still more effectively foster the intensification process in agriculture in conformity with the economic strategy of the 10th party congress.

The strategic orientation to the main trends in intensification also calls for revolutionary ideas in agriculture and the foodstuffs industry, for practical actions aimed at a much more productive utilization of the material funds created in recent years, of the intellectual potentials and the experiences of the best workers. Thus the conference devoted great attention to solutions aimed at "using better what we have" and achieving "above all greater yields on the fields and a higher performance in the stables for the efficiency improvement needed in the 1980's."* The measures for it are set by the resource-saving type of our intensively expanded reproduction. Especially important is that

--animal products are produced primarily on the basis of our own fodder production and on all natural acreages crops--mainly grain, potatoes and sugar beets--of high intensity are produced;

--farm production is increased with reduced resources in absolute figures, especially important energy sources;

*Comrade Erich Honecker, "Bericht des Zentralkomitees der Sozialistischen Einheitspartei Deutschlands an den X. Parteitag der SED" (SED Central Committee Report to the 10th SED Congress), Dietz publishing house, Berlin, 1981, p 71.

--the basic assets economy is noticeably improved to counter the reduced basic assets quotient effectively and gradually improve the ratio between production and one-time expenditure; and
--through a higher materials, energy and basic assets economy, the cost/benefit ratio improves and farm production increases faster than the production funds to be invested.

All proposals for solving our agricultural economic problems thus have to be gaged against how through a full use of the natural resources and of all qualitative growth factors farm production can be increased per unit of acreage. The question is how they can help tap reserves by surmounting performance differentials among socialist agricultural enterprises, devoted to a high fodder economy low in losses, an effective reproduction of stocks with the least losses, and a high utilization of agricultural raw materials. With it, research results have to be rated in terms of how they help the further strengthening of the class of the cooperative farmers, the spreading of cooperative democracy, the consolidation of its alliance with the leading workers class, and the further perfecting of rural socialist production relations, and contribute to the further strengthening of our republic.

Last year we brought in the thus far largest grain harvest in the history of our country. If we want to supply our population stably with foodstuffs more and more on the basis of our own crop production, however, we must further increase our yields and expand our grain acreage. Gaining expanded grain acreage, in turn, depends on raising yield averages in all other crops. We must at the same time increase our fodder concentrate volumes by using more sugar beet and turnips and simultaneously reduce the use of concentrate for livestock feed in making total use of every opportunity of using coarse fodder high in energy concentration.

Among the large reserves for the necessary boosting of yields is an improved utilization of the material-technical base of our agriculture that was created in recent years. Notably an increase in the basic assets economy calls for new solutions from farm economy research. For the sake of a more effective basic assets reproduction, the basic assets structure has to be improved in that investments are placed primarily for maintenance, rationalization and reconstruction. Maintenance becomes more important so as to modernize basic assets and prolong their working life. A very uneven wear and tear of mobile and stationary equipment calls for meaningful bases for decisions by which one can determine whether further maintenance should be combined with a rationalization process or whether all rationalization opportunities are already exhausted and the only feasible reproduction lies in replacement. The intensification process, in principle, is concerned with perfecting available basic assets by means of socialist rationalization in such a way that they facilitate the use of labor, material and energy saving procedures and thereby conform to increasing efficiency requirements.

Improving the cost/benefit ratio and boosting the agricultural contribution to the national income call for reducing the specific, and partly also the absolute, production consumption in years ahead. Future solutions, at the same time, must focus on reducing, through comprehensive rationalization, the expenditure in live labor per unit of product. Farm-economic research--as the

conference affirmed-- must still more purposefully illuminate the inevitabilities in the dynamics of the reproduction process in socialist agriculture. In this one can rely on significant results such as analyses of the linkage of agriculture with other economic sectors, justified variants for changing the structure of crop and livestock production, and suggestions for improving the cost/benefit ratio.

The clear focus by the 10th SED Congress and the 12th Farmers Congress of the GDR on rigorously improving the energy economy--as the conference demonstrated--has led to the first perceptible results. But the results do not yet satisfy the economic requirements. For that reason the conference pointed out still other ways for energy saving production and labor organization, discussed matters of optimizing transports, and devoted great attention to the elaboration of such consumption norms for fuels and other energy sources that take into account the technological processes on the fields and in the stables and the transportation that belongs to it. They also discussed the need for more precise guidelines for differentiating allocations of fuel contingents, in conformity with production achievements, in the bezirks, kreises, LPG's and VEG's. An energy economy in all crop and livestock production sectors also calls for closer cooperation there with methods research and for a broader application of process analyses from the energy economy point of view.

Resolving all these intensification matters is closely linked to further specifying the criteria, goals and directions in the gradual transition to industrialized production. Much like the natural science and biological specifics of this process in agriculture, the consequences resulting from material-technical possibilities have to be analyzed still more extensively. It means that technological processes must resolutely be adapted to the soil, crop and livestock requirements, and this in such a way that a high raw material production with increasing effectiveness is ensured.

The intensification process and the further perfecting of the social production organization also require that in increasing production and its efficiency the advantages of horizontal as well as vertical cooperation are still more resolutely used because, after all, a rational combination of the productive forces in the unified agricultural reproduction process occupies a key position for attaining the needed economic and performance growth on the basis of available resources.

More and more intensification is affected by the improvement of proportions as between crop and livestock production. All the more important it is then that the cooperation councils meet their growing responsibility for structuring a unified reproduction process and do what they can in making better use of their legal bases and pursue more definitely the paths pointed out in the resolutions of the 12th Farmers Congress. The conference conveyed rich experiences about this, especially on how one can obtain great efficiency in the economic relations among the cooperating LPG's and VEG's and how the shared responsibility for a higher performance level is assumed in the LPG's, the VEG's and within their cooperation.

The conference has clearly ascertained that the intensification, the further steps toward industrialized production methods, largely depends on how scientific-technical progress is brought about by means of available natural and economic resources. More attention must be paid to the economic effectiveness of the results of scientific-technical progress, and it must more thoroughly be determined what the time frames are during which new scientific data are to be introduced and broadly applied. To reach the highest efficiency, the cooperation between farm and industrial research has to be deepened.

It also was asserted at the conference that a better utilization of the scientific-technical potential in the teritory must be placed under unified management. Practicable proposals were worked out for it aimed at further perfecting the function and working method of the scientific-technical centers under the bezirk councils and at greater efficiency in the consultative enterprises. Turning them into an effective network of consultation and scientific-technical services will help the LPG's in speeding up the transition of scientific-technical progress into production. Accurate computing, measuring and weighing more and more becomes the focal point in the socialist economic activity in the LPG's and VEG's. Proven principles and regulations of socialist industrial management are enriched with new proposals and ideas as set down, e.g., in the handbooks for brigade chiefs. Also for a production and labor organization adapted to concrete site conditions, which is essential for the inner stability and solidity of the LPG's and their economic capacity, industrial management research has already worked out foundations recognized in practice--e.g. the principles for forming brigades. Now further conceptions are needed that take more account of the territorial givens, the location of village markings and production sites, the crop rotation, acreage distribution and transportation routes. Needed also are sound scientific proposals on how the LPG's own responsibilities can be strengthened so that they will make the industrial reproduction process and their cooperation more effective.

In response to the great attention the conference paid to inducing the concern for increased yields, performances and high efficiency in the enterprise and on the cooperative level, materials were submitted for the application of production and efficiency promoting forms of compensation. Their application is to go hand in hand with preserving still more what has proven itself and applying the methods of the best units everywhere, so that this way the production and efficiency will be further improved. Experience exchange and performance comparisons are most effective when, proceeding from comparisons, the causes for uneven results are established and, in consequence, the best working methods are introduced. Then a noticeable support from state management, the cooperation partners and other enterprises always pays off. One benefit of the discussion of performance comparisons was the treatment given to the concrete questions of efficiency rating, methodical procedures, scientific precision, and the simple handling of performance evaluations and comparisons. A system of basic parameters was submitted for rating the efficiency of cooperation.

All in all, the conference has helped effectively in explaining the status of theoretical knowledge about intensification in agriculture, deepening the insights into the objective requirements for the further implementation of our party's economic strategy, and elucidating the great responsibility on the part of agricultural sciences for further improving the production and efficiency of our agriculture.

5885
CSO: 2300/211

PERFORMANCE OF NEW ROBOT TECHNOLOGY DATA BANK REVIEWED

East Berlin EINHEIT in German Vol 38 No 2, Feb 83 (signed to press 13 Jan 83) pp 211-212

['Information' report by Ingolf Barth, engineer, chief, Central Industrial Robot Data Bank, Research Center for Machine Tool Construction, Karl-Marx-Stadt; and Prof Dr Erich Paessler, engineer, program director for industrial robot research at the same Research Center: "On the Data Bank for Robots." A translation of the official text of the 25 August 1981 order on the establishment of the data bank, cited in footnote 2, accompanied by an interview on the subject with Manfred Horner of the same Research Center, is published under the heading, "First Data Bank for Industrial Robots Established," in JPRS 79494, 20 Nov 81, EAST EUROPE REPORT: SCIENTIFIC AFFAIRS No 722, pp 9-13]

[Text] "We have all it takes for a high economy through modern technology," Comrade Erich Honecker affirmed in his concluding speech at the fifth Central Committee session and offered this example: "Let us take as auspicious an area as robot technology. By late August this year, 17,862 robots had been introduced to production. More and more new and improved types of robots are being made for different tasks. They are already increasingly being produced and introduced as the crucial connecting links for automating entire production processes. This new quality makes apparent what is now needed."*

To get rapidly beyond individual models is what is needed today. To find complex technical solutions by which we are ensured of an efficient use of the not exactly cheap robots within the briefest time frame and of a great easing of labor for the working people is an ambitious task for our entire economy. For that, an active experience exchange between designers and users, for the good of a high economy, an effective control over the time factor, and expert management decisions are indispensable. Not to leave such an experience exchange to chance is an effort in which the Central Industrial Robot Data Bank in the Research Center for Machine Tool Construction in Karl-Marx-Stadt has been engaged for over a year.

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*"Aus dem Schlusswort des Genossen Erich Honecker, 5. Tagung des ZK der SED," Dietz publishing house, Berlin, 1982, p 27.

Its concern is to make substantial data available to the specialists for getting set for robot technology and for further designing and improving the robots. This avoids the wasting of resources, because of duplication, for instance. The needed decisions can of course not be taken from, but made much easier for, managers who have to decide on the use of robots in their sector; we have, after all, now the experiences of more than 900 robot users' collectives for the benefit of all who prepare and implement industrial robot employment in the GDR. Each collective that starts using an industrial robot learns while doing so, surmounts obstacles, implements its own ideas, and uses results and experiences already available. The proper data in the robot data bank is only accessible, however, if all collectives store their information on industrial robot techniques in the data bank, as has been legally decreed.*

The Data Supply

The data bank stores information about industrial robot techniques in the GDR, based on the experiences of the developmental and users' collectives in our economy as well as those data that are derived from an analysis of the international state of robot technology.

The data collected in the GDR on already developed, produced and used industrial robot technology includes data on the mode of construction, the handling, the working space, the driving force, the pickup, the axle movement, the control and the programming. To facilitate working with the data bank, the design, technological and economic data are entered on a printed form to be analyzed; the technological data relates mainly to describing the instance of utilization. The economic and social information contains, among other things, data on the growth of net production, the saving of working time, the release of manpower, the cutback in jobs and investments. But this includes also information on the periphery of the robots.

But the most efficient use of robots under our conditions also requires, along with the analysis and dissemination of the best examples in our own country, an international comparison of this advanced technology. Therefore we constantly expand and update the fund of data on international developments. For that, the data bank resorts to the science and technology documentary research system in the Machine Tool Construction Research Center which has collected the most important technical information on industrial robot techniques for some 10 years. By means of the circa 7,000 stored references, all essential developmental trends are displayed, the use of industrial robots in the crucial industrial countries can be adequately surveyed and be made accessible by means of some brochures and special catalogue pages on industrial robot technology.

*GESETZBLATT DER DEUTSCHEN DEMOKRATISCHEN REPUBLIK, Part I, No 27, 15 September 1981, pp 334 ff.

Reporting and Research Duty

The performance capability of the data bank depends of course on being intimately familiar with the continual growth in industrial robot technology. It is all the less understandable then that the intention to cooperate with the data bank is not appropriately developed yet everywhere and there are enterprises and facilities that develop, construct or use robots which yet do not always live up with the proper care to their reporting obligation. On behalf of as simple and rational a procedure as possible appropriate reports to the data bank of the Research Center are made when development begins (when the tasking workbook is confirmed), when production starts (including the special manufacture of means of rationalization), and when the industrial robot technology goes into operation (because prior to that technical modification often still are needed for a project).

Along with the reporting duty, all enterprises and facilities have been given the obligation to do research. To pass on developmental tasks, the tasking workbook must indicate that the researchers, scientists and development engineers at the data bank for industrial robots are informed about the state of the art.

The Benefit

Such a procedure is all the more necessary because with the growing demands made on the data bank its outlays are growing and it is absolutely necessary to rationalize. It also is economical, considering that through the work thus far nearly 1,000 operations in our economy have already been stored. That amounts to 50 independent process-specific and process-flexible robot types with their appropriate peripheries and pickups and to 950 technological operational instances. We have processed thus far 700 orders for information from 30 economic sectors. Duplication could thus be avoided and developmental data could be reused.

The data bank however also maintains direct relations with enterprises that have done well with the use of robot technology. Such experience exchange on the use of robots can significantly speed up their operation. That also applies to detail solutions like variants in robot pickups, sensors, rotational and linear units and, above all, solutions of parts of the prefabricated machine parts system, about which the Research Center makes information available when asked to do so. All this helps overcome the still to be differentiated abiding by economic operational norms, reduce the one-time expenditure in releasing manpower, get a higher capacity use out of this technology, and raise the degree of multi-machine operations.

"Economic success requires getting beyond individual examples, projecting the total automation of whole production sectors and enterprise departments, organizing the technical process for it and using robots. We expect some such solutions will be completed within a year and possibly still earlier."*

The staff at the Central Industrial Robot Data Bank in the Research Center for Machine Tool Construction in Karl-Marx-Stadt does what it can to realize this success.

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*"Aus dem Schlusswort . . .," op. cit., p 28.

RECTOR OF ECONOMIC UNIVERSITY WEIGHS ROLE OF INFRASTRUCTURE

Budapest FIGYELO in Hungarian 31 Mar 83 p 3

[Article by Dr Ivan Berend, rector of Karl Marx University of Economic Sciences: "Economic Stabilization and the Infrastructure"]

[Text] Is it possible to stabilize the economy and at the same time to develop the infrastructural branches at the same rate as before? Is this perhaps one of the real contradictions of our present economic life?

Economic stabilization usually means an economic policy to end, within a relatively short period of time, an economic disharmony; in any event, such an economic policy is of a temporary nature. Development of the infrastructure is a part of long-term economic strategy, and as such it is a prerequisite for, and a result of, balanced economic and social development.

Strategy attempts to grasp the set of conditions for, and the results of, the economy's development, and in this respect it is a basic condition for harmony, and hence also for a balance, between the infrastructure's development and the development of the economy and, of course, of society as well.

Characteristic of the growth path that ended in the late 1970's was that industry and the construction industry were the driving branches, and their growth rates were always higher than the average. In terms of growth rates, the most significant gap occurred between industry and the nonproductive infrastructure. This is evident from Fig. 1.

The beginning of the 1980's represents a turning point: the function of industry, in its traditional structure and with its traditional technology, as the "driving" branch is in the process of ceasing within the foreseeable future. The infrastructural branch has developed at a faster rate than the growth rate of industry or even the average growth rate. A forecast prepared within the framework of long-range planning already anticipated the alternative under which the development of the infrastructural branches in the 1980's and 1990's will be faster than the average rate of economic growth.

The economic strategy is evolving of an alternative under which the stabilizing effect of the infrastructural branches increases, to a certain extent they generate also demand-stimulating effects and thus determine a significant part of the rate of economic growth. In spite of its importance, however, development of the infrastructure cannot be equated with economic strategy, but it is an important element and condition of the latter.

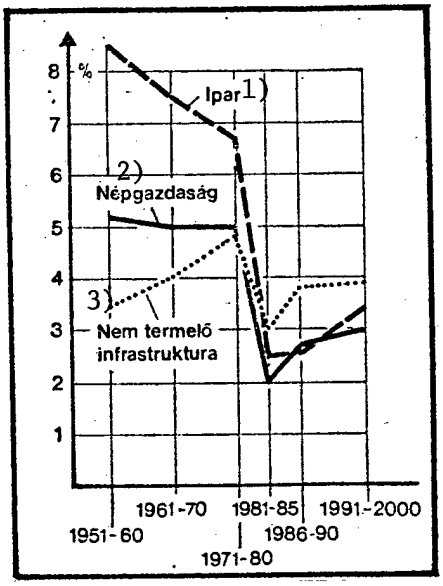

Figure 1. Rate of economic growth and its change (average annual rate, in percent).

Key:
1. Industry
2. National economy
3. Nonproductive infrastructure

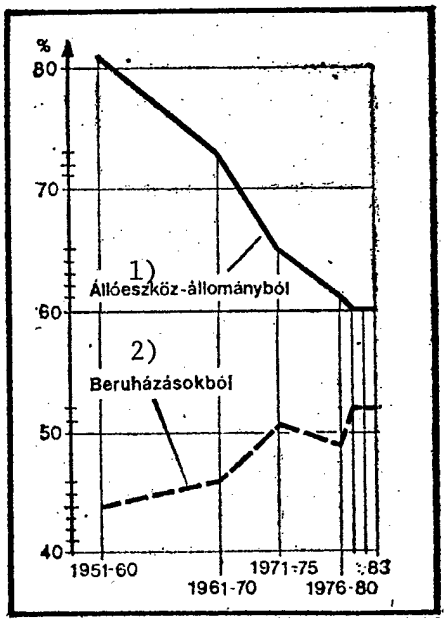

Figure 2. Infrastructure's share (national economy jointly = 100 percent).

Key:
1. Of stock of fixed capital
2. Of investment

Switching the economy to its new growth path is "infrastructure-dependent" in two respects. The investigations and research conducted over a period of years, and facts that increasingly convince everyone show that the network and activity of the infrastructural organizations are underdeveloped, which is hampering economic growth, structural changes and the economy's efficient operation, and is making more difficult the improvement of living conditions and the supply of the diversifying demand for services. And it is likewise a fact that the production organizations, under the pressure of circumstances, often are operating also duplicate infrastructural capacities (for example, in transport, in the telephone networks, and in recreational and sports facilities). These economic organizations are renouncing the advantages of truly efficient networks that can operate only on the scale of entire society.

The investigations also show that the network of services is not a passive factor of economic and social development, rather its accelerating or decelerating set of conditions, depending on whether this network is developed or underdeveloped in comparison with the economic potential. A modern network, so to speak, "pulls" the entire economy behind it.

Earlier views held that development of the infrastructural branches' networks was a result of economic development and therefore belonged in the sphere of

distribution; and since "it is possible to distribute only what has been produced" according to this line on reasoning, the infrastructure's "trailing-type" development was elevated to the rank of a "virtue."

I do not wish to prove in detail that it is worth producing only what has a demand, and therefore consumption in itself reacts on the growth and structure of production. However, the service activity of the infrastructural branches not only reacts on production but is also a specific condition of production, although a condition that can hardly be quantified. It is obvious that without transportation, communication and particularly informatics that employs modern electronic means, without well-organized "inventory-efficient" trade, efficient management of water resources, etc., there can be no production, and hence no surplus income available for distribution.

Development of the infrastructural branches is an essential condition for switching the economy to its new growth path. In the stage of development of the intensive and innovative type, the application of advanced machinery and technology plays a key role. These requirements multiply the importance of the human factors and attach greater value to work of good quality and to receptiveness to new technology. The development of such traits presupposes a higher cultural level, education and vocational training, but also health care, good transportation and trade, civilized working conditions at the workplace, and civilized conditions in general, an important element of which is better housing conditions. Civilized work requires civilized workers.

Thus, development of the infrastructural network is a specific condition of the new type of economic growth. Therefore, looking back into the historical past, the so-called "trailing development of the infrastructure" is not a strategy that can be employed in the future.

Development of the infrastructure influences sensitively also the development of living conditions. Parallel with the transformation of the consumption structure, the infrastructure assumes a decisive role as an instrument of the civilized spending of incomes and savings, and of more diverse consumption. Also from a tactical viewpoint, the development of the infrastructure and the role of services are a factor that improve society's sense of well-being. In the present situation, unavoidable measures aimed at restoring economic equilibrium necessarily limit the growth of the consumption of goods and services. Therefore an economic policy gains in value, not only strategically but also tactically, if it gives preference to infrastructural services as measures that improve living conditions, but not at the expense of material consumption, nor as its substitute.

Development of the infrastructural networks can and must be given preference under the conditions of restoring external economic equilibrium and stabilizing the economy. In particular, the infrastructural branches are less import-intensive than the branches of material production. The cumulative content of imported materials per unit of final consumption is between 7 and 14 percent, and this proportion is relatively high (19 percent) only in transport and communications, because of the high energy consumption.

In industry these proportions are generally between 30 and 46 percent, and there is not one branch of production where this coefficient is lower than 20.

The proportion of import within investment is likewise substantially lower in the infrastructural branches than in the productive branches.

Admittedly, the infrastructure contributed less toward the expansion of export than the productive branches do. In spite to this, we have not exploited by far the possibilities of exporting services. Such reserves are, for example, in exporting intellectual effort or in increasing foreign tourism.

Rising employment in the infrastructural branches is a worldwide trend. The proportion of employment in the sphere of services more or less expresses also the level of their development. In the economically developed countries the proportion of employment in services is 50 to 65 percent, whereas in Hungary it is barely 40 percent. And if we take into consideration that in Hungary the output in services is much lower than in the developed countries, then this structural lag is even greater.

In the past the development of the infrastructure in Hungary was restricted by a shortage of manpower, because industry and the construction industry siphoned off the entire increase of the labor force, and most of the manpower migrating from agriculture. In the future this restriction will not limit the development of services, and long term it even seems advantageous if manpower migrates to the infrastructural branches from the branches of material production in the narrower sense, particularly from the competitive ones, in the interest of improving labor productivity.

One of the contradictions of manpower management is that the qualitative level, measured in terms of formal education, is substantially higher in the infrastructural branches, while average earnings are practically the same as in the material branches of production in the narrower sense.

An economic strategy that gives preference to the development of the infrastructure encounters two problems that are difficult to solve: the budgetary constraints on investment and on the operation of the networks.

The net capital-intensity of nonproductive infrastructural activity is four times higher than in industry, and 1.7 times higher than in the case of productive services. These proportions will not change significantly even in the long term. Although capital-intensity is a ratio whose numerator, namely the infrastructural output, is underestimated considerably, the high capital-intensity is nonetheless a fact that must be taken into account.

The limited investment possibilities are critical especially because we are at the crossroads. The processes that evolved over the past three decades will either continue or must change significantly.

The diagram in Fig. 2 clearly shows that for 34 years the infrastructural branches' share of investment has been smaller than its share of fixed capital. Therefore the service network's share of fixed capital has systematically declined. Up to 1980, the share of investment continuously approached the share of fixed capital. As a certain consequence of the sharp decline of the level of investment in the 1980's, it seems that this share was maintained only by the rise of private investment.

It is undeniable that in the present situation it is difficult to maintain the stock of fixed capital in the infrastructural branches, and even more difficult to increase it. Due to the high proportion of construction within investment, the infrastructure's share of investment does not have to match its share of fixed capital in order to maintain its stock of fixed capital. A 52- or 53-percent share of investment would be sufficient to maintain the infrastructure's present share of fixed capital (60 percent of the total stock of fixed capital), provided the volume of investment does not decline.

Budgetary constraint is the other "hard nut" of an economic strategy that gives preference to the development of the infrastructure. Institutional income from budgetary resources covers 50 percent of the value of the output of infrastructural services, including 12 percent in the case of the productive infrastructure and 90 percent in the case of the nonproductive infrastructure. In the stage of stabilization and even thereafter, a budget-financed demand of such magnitude makes the expansion of services questionable. This is possible only if the net income of material production increases in both relative and absolute terms.

There is every indication that growth in the development of productive and nonproductive services will be faster than the growth of output in the branches of material production in the narrower sense. Within productive consumption there will be a slight decline in the demand for transportation and water, but there will be dynamic growth in the demand for communication, informatics, and for commercial, financial, trade, scientific and educational services. The share of services will increase also in personal consumption, and these objectives include also the expansion of the export of services.

Many people doubt that the activity of the infrastructural branches can be increased under the present system of budgetary relations.

The countries that embarked on the path to socialism thought that they would provide for the population most services of the infrastructural branches as free or quasi-free services. And this is what they did for a long time. In contrast with the differentiation based on wealth and income under capitalism, the socialist countries believed that, by making services free, they were realizing a basic institution of equal and just distribution, or of distribution regarded as such. Beginning with the 1950's, the practice also in Hungary was based on this principle. The constitution, too, guaranteed free education and medical care, and for a long time there was a definite effort to broaden this circle.

Later, the expansion of the circle of free services and the growth of their share stopped in Hungary and in the other socialist countries as well. Recognition of realities was reflected in the appearance of the first commodity and market characteristics within infrastructural services. These characteristics asserted themselves predominantly in industrial, construction-industry and personal services, and in the supply of housing.

The present system of regulation does not yet know how to properly handle the conflicting effects that the economic automatisms and the interest relations have on the infrastructure. Thus, parallel with the splurging on many services, there is unwise penny-pinching on others, disregarding the long-term losses. Against the free or quasi-free services on the one side, there are on the other side the

overburdening of the infrastructural networks, the overcrowding, the deterioration of the stock of fixed capital, and also unused duplicate capacities due to institutional divisions.

Over the long term, treating the individual types of services in a differentiated manner, we should strive to provide services that are really free in education and health care, in accordance with socialist society's system of values. In other areas such as cultural services, for example, it will be necessary to develop an economy of the mixed type. And in transportation and trade it will be necessary to develop further the commodity and market relations that have evolved gradually over the past decade. Here the functioning of commodity relations can ensure through social policy in a wider sense that socialist society's social relations will conform to its system of values.

1014
CSO: 2500/207

NATION TO UP PURCHASE OF ELECTRONIC EQUIPMENT, COMPUTERS FROM CEMA COUNTRIES

Budapest NEPSZABADSAG in Hungarian 24 Mar 83 p 9

[MTI report: "Hungarian Enterprises Will Import More Products Than Last Year From Socialist Countries; Goods Will Enrich Variety in Shops Also"]

[Excerpts] This year, according to the plans, ruble accounting imports from socialist countries will increase by 9.5 percent as compared to last year. An especially swift increase is expected in importing machine industry products; this will be 12 percent more than in the preceding year. Foreign trade is buying a number of new products which used to be acquired from other markets, usually for convertible exchange. It can be seen that domestic users now are giving more consideration to where they import from and for how much. At the same time, the offerings of socialist countries have expanded too. All this has prompted foreign trade to do more fundamental market research work than before in the socialist countries, mapping out the new acquisition possibilities. As a result of this a number of foreign trade enterprises have substantially expanded the selection of a few new import products.

This year new socialist acquisition sources have been brought into parts supply for the electronics industry also. In 1983 Elektromodul will buy more than 100 million forints' worth of integrated circuits and microprocessors from the Soviet Union alone. Semiconductors and various electronic parts will be imported from the DGR this year.

METRIMPEX recently imported new products for more than 3 million rubles, including various materials testing instruments, automatic control elements and other articles, from the socialist countries. Domestic industrial and organizational enterprises have bought small computers from the GDR for almost 1.5 million rubles. One computer each is in operation already at the Medicor Works and the Office Machine Technology Enterprise. Also from the GDR they have imported one million rubles' worth of gas meters for the Capital Gas Works and the National Petroleum and Gas Industry Trust. To improve domestic supply they have imported 500 electric typewriters from the Soviet Union and several thousand portable typewriters from Bulgaria.

8984
CSO: 2502/32

PHASE-OUT OF DIRECTIVE PLAN TARGETS BY GOVERNMENT CONTRACTS DESCRIBED

Warsaw RADA NARODOWA GOSPODARKA ADMINISTRACJA in Polish No 4, 21 Feb 83 p 26

[Article by Dorota Pietrzyk: "Government Contracts--A New Element of the Reform"]

[Text] The Council of Ministers decided to introduce to our planning and guidance system a new form, which is actually well known around the world: government contracts. The contract offers will be submitted in manufacturing enterprises by units empowered to do so by the minister of materials management and the minister of domestic trade and services. It is expected that contracts will be signed within a month after the Central Annual Plan is approved. This year the deadline falls on the last day of February. Central annual plans will contain a list of raw and other materials, consumption goods, and capital goods that can be covered by the contracts.

First Objective: Preferential Treatment for Most Needed Production

The present list, attached to the Council of Ministers' resolution of 30 December 1982, contains 31 items in the following three groups: raw and other materials, semifinished and other products for manufacturing, and market products. The first group includes chemical fibers (viscous, polyamide, polyester, and polyacronitrile), packing sheets, streetcar rails, and bearing products. The second group includes cables, fluorescent lamps, tires, nitrogen fertilizers, insecticides, streetcars, tubs, and sinks. The third group contains pantyhose, socks, stockings, knitted underwear, batteries, lightbulbs, soaps, and laundry powders. Altogether, the list covers products that equal about 3 percent of all industrial production.

A government contract may cover deliveries during the period of one year or over a period of many years in state, cooperative, and handicraft enterprises. Contracts may be obtained through bidding. The contract has to be accepted by ministries serving as founding bodies. It has to be composed according to the Civil Code and the 207/82 resolution of the Council of Ministers.

The enterprise that obtained a government contract is guaranteed supplies of raw materials, fuel, and materials needed for the contract production. It also has a priority concerning imports and supplies from the pool of

materials that are not earmarked for distribution. Furthermore, the enterprise is guaranteed easier access to investment and working-capital credits if it fulfills the contract. However, this applies only to moves aimed at increasing production included in the contract with a unit representing the government. The enterprise acquires also rights including the right to income tax deductions. Funds obtained in such a way are to be used for development.

Of course, if the contractual agreement is not fulfilled by the producer, he loses all his rights. If the acquired foreign exchange funds are not used for objectives for which they were earmarked, the producer has to either return them or their equivalent in Zlotys multiplied 10 times. Losses incurred in such a way are considered unjustified, which increases income tax.

Second Objective: Stimulation of Production

Thus, our reform acquired another specific executive economic element. This new element will replace such outdated and used up instruments as a directive, a command, and an indicator. Goverment contracts do not affect in any way enterprises' legally guaranteed autonomy. It is not obligatory to enter into contractual agreements with the government.

However, since government, state, contracts are very attractive for enterprises everywhere in the world, we can expect that our producers will also find them very attractive because of guaranteed supplies, access to foreign exchange, long-range and stable sales, and, let us not forget, tax deductions. Thus, it should not be feared that the idea of contracts will be rejected. Rather, the excess of those eager to enter into contracts with the government should be expected. The initial experience fully confirms this expectation. In both particular ministries and in "operational programs" there has been a tendency to put the largest part of production on lists covered by contracts in order to gain access to guaranteed supplies. However, this could have destroyed the whole idea of government contracts. The minister of materials management defended the short list, which makes it possible to achieve tangible results from opportunities afforded by supply priorities.

According to statements of experts, government contracts will have an effect of stimulating production and solving supply problems in the most important areas and cases. We need to clear the way for development and create conditions for correct functioning of economic sectors by supplying certain widely used materials and products of which there is a serious shortage such as storage batteries, tires, and fibers. Furthermore, government contracts are restricted to areas in which ensured delivery of chosen materials and products will improve the functioning of important aspects of the infrastructure, such as city transportation. That is why the list of products contracted for by the government contains streetcars and streetcar rails.

Third Objective: Structural Changes

Actions directed at determining real supply priorities and creating material and economic conditions for stimulating production pave the way for developing an effective instrument of accomplishing structural changes. Attempts to accomplish such changes were not successful in the past. However, this year it is hoped that the rate of production increase will be three times higher, i.e. about 13 percent. This expectation is based on the assumption that there will be about a 4 percent increase in industrial production. If this form of shaping production, which is experimental in our situation, is a success, it can be expected that it will be adopted more widely. Some products, which are now covered by six operational plans, may also be included.

A system of government contracts, which is now introduced, should also alleviate results of intrigues caused by serving particular interests in the area of sales of consumer and durable goods and products of which there is serious shortage. The intrigues consist in selling too much of the enterprise's production to its work force, keeping products within the voivodship's borders, and attempt to exchange one kind of goods for another. This is possible because the unit representing the government is the owner of the purchased production, and it can choose the way to dispose of it.

Thus, there are many indications that we are witnessing an effort to combine the autonomy of enterprises with the protection of important social and economic needs of the country, and to include in the reform economic "instrumentation." As usual, the success depends on effectiveness of specific organizational solutions, skillful drawing of contracts between units that submit proposals and producers, and honesty in awarding and registering preferential treatment, tax deductions, credits, and foreign exchange by the founding bodies, banks, and the Planning Commission. The value of every systems-type solution will be manifested in practical terms.

9959
CSO: 2600/615

MATERIALS MANAGEMENT MINISTER ADDRESSES THREE-YEAR PLAN TARGETS

Warsaw TRIBYNA LUDU in Polish 18 Mar 83 p 2

[Interview with the chief of the Materials Management Office, Jan Antosik, by Slawomir Popowski: "We Can Count Only on Thrift"]

> [Text] The section of the three-year draft plan referring to materials management is very tight. What can we count on in supplies of raw and other materials, fuel and energy until 1985? What do we have which we shall lack, and particularly what are the causes of the raw material difficulties we are experiencing? The chief of the Materials Management Office, Minister Jan Antosik, is responding to three questions in an interview for PAP.

[Answer] In 1980-1982 the level of production dropped throughout the national economy. Because of fewer export opportunities and from political considerations our imports of fuel, raw and other materials from capitalist countries were also restricted. In connection with this, the supplies which can be allocated for use in production are also more modest. At the same time the production capacity of our enterprises has remained at the former level or has declined at a rate slower than that of supplies of fuel, and of raw and other materials. Actually there was a great gap in supplies, limiting the increase in industrial production. In the course of 3 years (1980-1982), the drop in the production of many raw and other materials and in their imports from capitalist countries was so deep that it will be impossible to restore the level of their deliveries in 1979 or 1980 before 1985.

It is now anticipated that the increment in production supplies in 1984 and 1985 should be no less than in 1983. Here relatively greater increments in deliveries, of supplies from imports are assumed, including the capitalist countries. Thus, until 1985, we can count on a total increase every year in supplies of fuels, and of raw and other materials.

However, many problems will remain in association with the assortment structure of deliveries of materials produced at home and imported. For example, there will be a good supply of wooden and woodlike materials, paper and cardboard, and cement, but there will not be sufficient supplies of tires, storage batteries, dyes and paints. There will also be problems in supplying liquid fuels.

Improvement is also assumed in the so-called complementary supplies through the gradual levelling off of the particularly acute shortages, and parallel adjustments are assumed in the types and structure of production for reserves of raw and other materials which are at our disposal. To speak simply, this is a matter of a broader production base of raw and other materials, both our own and those imported from socialist countries.

[Question] In the three=year draft plan a great deal is said about the need to streamline the economy of raw and other materials, and of fuel and power, and it has even been stated that, without progress in this field, there will be no increase in production and the entire economic program will collapse. What do these things depend on?

[Answer] This matter is of primary significance, although it is not new. In 1983-1985 only half of the increment in production has an assurance of increased material supplies. On the other hand, a considerable part of the production increment must be achieved without an increment in the consumption of fuel, power, and raw and other materials. This is precisely the relationship between the increase in production and the national income on the one side, and the savings in material outlays for this production on the other. Nor is this a matter of thrift understood as a quantitative reduction in supplies and in the consumption of raw materials, other materials, fuels and power, but rather as producing more goods of better quality and necessary for consumers, from the raw and other materials consumed.

[Question] In the three-year draft plan a great deal is said about the goals and tasks of materials management, but considerably less is said about the instruments to achieve these goals. What activities are anticipated in this sphere?

[Answer] There is no doubt of the need and possibility of saving fuels, power, and raw and other materials. On the other hand the viewpoints and opinions on the subject of the amount of real savings are debatable. We believe that only varied and multidirectional activities can produce visible effects in materials management. It is important to limit obvious waste, but this is only part of the problem. The economic policy, technological progress, modernization of the production system, all of these are major instruments which can be used to obtain higher production per unit of energy, fuel, and raw and other materials consumed.

The arrangement and division of the factors affecting thrift in materials management vary. There are, for example, organizational, technical and economic factors, noninvestment measures and measures often requiring considerable outlays, immediate and long-term activities, and so forth. I believe that at present it is particularly necessary to differentiate these factors which are found in the area of enterprise decisions and, by means of economic instruments, to orient them toward thrift. Positive changes were made in this area in 1983, and we can mention a number of economic and financial principles which are turning the attention of enterprises toward systematizing their materials management.

However, this is not really the system, but rather elements of the system. It is still easier to increase profits by methods other than lowering costs, although these other methods are approaching their end.

It is also necessary to differentiate factors which should be used by the central authorities for progres in the consumption of fueld, power, and raw and other materials. This refers mainly to the investment policy and to the import-export policy, to the choice of our own priorities in supplies, to the creation of conditions for structural changes in production and to better utilization of the domestic raw material base. It is not necessary to abandon administrative decisions if the waste of materials and power results from the production of outdated, extravagant products. Standardization and quality control can also be used better for purposes of thrift.

In conclusion I would like to warn against the delusion that any action will bring immediate and great results in savings. Thrifty management of fueld, power, and raw and other materials is a process of profound changes in the entire economy. This is a long-term process with its history and substance embraced in the fact that the furutre of this process will be better than the past. It is possible, if we work systematically and economically if we adapt system-type activities.

6806
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MINISTER SUMS UP 1982 RECORD, PROBLEMS OF MARITIME INDUSTRIES

Warsaw RYNKI ZAGRANICZNE in Polish No 28, 5 Mar 83 p 8

[Interview with the director of office of maritime economy, Minister Jerzy Korzonek, by Hanna Szumowska]

> [Text] [Question] From the very beginning of last year, it was known that it could not yet bring satisfactory results in the sphere of our entire national economy; we were prepared for a long and arduous process of working our way out of the crisis. On the other hand, when it came to enterprises tied to the port-maritime turnover, it became generally accepted to believe that those enterprises have greater possibilities than others, and to rely on the recession. And perhaps this conviction is well-founded because, judging from the published preliminary estimates, in most cases the scheduled tasks for the enterprises were fulfilled, and even were exceeded. Apart from pure statistics, Mr Minister, how did the result of the work by our maritime economy turn out to be in your estimation?

[Answer] It is difficult to generalize and speak of the entire maritime economy, when specific problems and distinct working conditions existed in each of its branches.

Let us begin with those which fared worse--with the fleets that operated in a primarily complex and unprofitable situation, forced into a struggle on two fronts: internal and external. On the one side, it had to grapple with the results of the national economic crisis, with repercussions found, among other places, in the slackened supply of cargo from the Polish export trade. Fortunately, positive tendencies have already begun to appear in this segment. A definite growth in turnovers in the Foreign Trade Enterprise [PHZ] set in by sea, especially the export of coal and, consequently, the involvement of our fleet in the transport of Polish cargo increased. The struggles with the effects of a serious unfavorable economic situation in the world shipping market, manifesting itself in a marked drop in cargo charges, ruthless competition in the procurement of cargo, which was too small in proportion to the transport capacity of the global fleet, fared considerably

worse. All of these events weighed heavily and painfully on the financial outcome of our shipowners. As a result, although the volume of transport by the fleet was slightly greater this past year than the previous year, the value of its services proved to be slightly less than the bases that were planned.

[Question] A certain regression also occurred in fishing, since less was caught and delivered to the domestic market.

[Answer] But I must strongly emphasize that the results of this branch fared considerably better than we could have expected at the beginning of last year. After all, we were deprived of access of rich fishing grounds that could have brought us about 200,000 tons of fish. Thanks only to the skill and enormous mobilization of Polish fishermen, the damaging results of the U.S. sanctions were able to be minimized and we were able to close by midyear at only 10 percent less than in 1981. By considerably increasing the growth rate in the export of fish, fishing enterprises managed to assure themselves of essential foreign-exchange funds, so that during the last year we hardly had any signals from ships about problems of a shortage of foreign-exchange for the purchase of fuel, the settlement of port duties and the payment of other expenses, that not long ago still kept shipowners awake at night. I admit that, after all, a 46 percent growth in exports is not enough to be proud of, because the crucial goal of fishing should be to supply the internal market. Such activities were forced by circumstances. It cannot be forgotten that fishing, especially deep-sea fishing, operates under dependence on principles of self-financing of foreign-exchange. Thus it had to make a profit in order to stay alive.

On the other hand, the shipyard repair facilities are that branch which essentially did not feel the crisis. In the past year, their production capacities were fully engaged, fulfilling export tasks and working on behalf of their own shipowners. Obviously, they too did not experience a lack of various types of problems; they had many supply problems, foreign-exchange shortages and so forth but, on the whole, they came out quite well, increasing the value of their production by about 20 percent.

[Question] Was this not merely a result of the marked rise in cost of services by the ship repair industry?

[Answer] To a large degree, yes, but the fact that substantial growth in labor productivity occurred at the shipyards also cannot be overlooked. A level equalling the best--until now--of 1979 was attained in some plants. That is to say, the situation is completely atypical, and it is so not only in the martime branch but in the entire national economy as well.

[Question] We still have the ports left to discuss.

[Answer] There was a very distinct improvement here as well. Thanks to the increased turnover in Polish foreign trade, port shipments increased in the past year by 5 percent, nearly up to 38 million tons. To be sure, it is still a long road to the 60 to 65 million tons of goods which were passing

through our ports a few years ago, but the revitalization of their work was evident. By the way, I would like to mention how groundless the theory which appeared and was promoted in certain economic circles was, saying that it was necessary to fire people because the ports would not have anything to do. It was not considered that the drop in turnover affected mainly mass-production goods, for which shipping activities are the most mechanized; on the other hand, general cargo turnover decreased by a considerably smaller degree--and these are enormously labor intensive--while they grow in localized cargo. Because employment shrank by 5 percent in the last year, the real problem--a labor shortage--consequently arose.

As with other branches, the port branch had no growth potential since almost all capital expenditures continued to be suspended. The container base in Gdynia and the coal complex in Swinojusc turned out to be exceptions where work was continued--unfortunately, by reason of the construction enterprises, without greater successes. That is why even from these scant means, which the port administrations managed to acquire for their disposal, only 60 percent was used. An unquestionable comfort is the fact that the system of foreign-exchange allowances finally began to function, allowing a certain improvement in the supply of spare parts for existing port equipment. Because in order for the ports to be able to derive real benefits from this system, fundamental changes still have to be brought about in this system and the bureaucracy of the entire mechanism of its work must be reduced. The process of shopping is beset with difficulties at present and takes an outrageously long time. It is like this because, on the whole, small transactions enter into play, affecting a heterogeneous group of goods, and they are included by various storehouses which are not disposed for this type of activity that is marginal for them. Therefore, we are looking for far more effective solutions and are thinking about concentrating the supplying of all maritime enterprises in one specialized central martime supply.

[Question] As practice shows, the right conception of authorization of activities by the maritime economy is not at all so simple in reality, and this is not through any fault of those parties concerned. At least this is what the project to establish a Maritime Economy Bank shows.

[Answer] I will surprise you when I say that, on the question of the bank, the prospects for its settlement are already appearing. The final word and decision in this matter belong to the minister of finance. Therefore, if Minister Nieckarz holds the opinion of the former first deputy chairman of the National Bank of Poland, then our problem is solved.

[Question] Unquestionably, the most vital event of the past year was the adoption, by the CC PZPR Plenum, of resolutions on the issue of state maritime policy as well as the confirmation of the operating schedule of its fulfillment by the cabinet. In keeping with this, by the end of last December, a project of a 3-year plan of tasks for the maritime economy should have been prepared by your department. What is the state of advancement of this work, and could you, Mr Minister, present the main assumptions of this plan?

[Answer] The plan is ready. The Planning Commission, among others, was engaged in it. The enormous disproportion between the investment needs of the maritime economy and the actual state possibilities gave us the most difficulties with its preparation. Generally, the need of the maritime economy is for at least 50 percent more in financial means than it can obtain. These allocations would be used exclusively for covering the most urgent needs preventing depreciation of assets. In almost all of the maritime branches, the situation during this period has been simply disastrous. For example, over half of the fixed assets in the ports has been completely amortized, repair dockyards need about 20 billion zloty solely to maintain existing potential, and close to 140 billion zloty--but in the period before the beginning of the coming decade--should be spent on a program to modernize the liner fleet. In essence the question boils down not even to a lack of means, because they are worked out by shipyards and shipowners or ports alike. The problem consists of accessibility to the means. This is a dilemma that must be solved on the scale of the entire nation. And though the maritime economy is entered on the list of priority branches, which are to be first in line to receive investment means, I am afraid that we will have to wait for quite a long time before we will be able to deal with all of those in need.

As one of the most important tasks--and this has already been fulfilled since last January--we consider the creation of similar systems-type conditions for the fishing industry, which other food economy activities have, especially agriculture. The point here is to include enterprises from the fishing branch in the program to supply agriculture and the food industry in machinery, fixtures, transportation means as well as spare parts, and also to include them in a preferential rate of credits contracted by these enterprises in banks. We are assuming that, already in the current year, an increase in the supply of fish and fish products will occur in the domestic market. We intend to achieve this by intensifying fishing, by greater technical readiness on the part of the fishing fleet and consequently, above all, a shortening in repair time and also by tightening cooperation with our Soviet partners through, among other things, joining their services on fishing grounds. Obviously, in order to achieve this, we will have to get past thousands of lesser and greater obstacles along the way. Just a minor example: the shipyards are already on the edge of completely exhausting their production capacities and orders are being filled by sheer force. Under these circumstances, how can priority be assured to the fishing boats since shipowners of the commercial fleet are striving after the same thing and, furthermore, we want to expand the export of repair services.

This year we will strive especially strenuously to diminish foreign-exchange outlays in, above all, the fishing branches, but also in other branches. Furthermore, enterprises should look for more effecive ways of lowering their wholesale prices.

On the shoulders of the office rests the responsibility to settle completely all of the system issues which until now have not yet been regulated, hindering especially the work of enterprises in the shipping branch. Let us mention a paradox here. We are intensively developing forms of shipping partnerships; we already have a Polish-French, British, and Spanish one. The purchases of

ships are carried out on the princple of leasing--we exploit the tonage, pay in installments, and after a certain length of time the ships will become ours. Yet when this happens, a problem of the means to replace them occurs. Later, the shipowner, earning 1 dollar, sells it to the state for 86 zlotys; but buying supplies for the ship, in Balton for example, he must often pay twice what the worldwide prices exact and, at that time, that same dollar has cost him at least 120 zlotys. Shipowners, being subject to the rule of world market activity, cannot freely raise the prices of their services and balance the cost increases for themselves. Therefore, some kind of rational solution must be found for them.

[Question] Thus, all the attention of the office and maritime economy enterprises will be focused on the search for means to improve indicators of profitability in the probably still very unfavorable internal and external conditions. International experts do not see any possibilities of a return to a good economic situation during the first half of the current decade.

[Answer] We are counting on the fact that the recession might continue longer and its effects will be accumulating. Despite everything, we are not wringing our hand and, slowly but surely, we are climbing up the mountain.

[Question] Thank you very much for the interview.

9891
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VIEWS ON PROSPECTS FOR ECONOMIC EQUILIBRIUM AIRED

Nieckarz in Party Journal

Warsaw NOWE DROGI in Polish No 1, Jan 83 pp 14-23

[Article by Stanislaw Nieckarz, minister of finance: "A Difficult Road to Financial Equilibrium for the Country"]

[Text] The fundamental collapse of our country's financial situation occurred in 1981. The deciding factor was mainly the high wage increase forced by strikes as well as high increases of other public financial income which were not backed up by increases in production or labor productivity. In order to save the economy from total disorganization, a great deal of activity was undertaken between 1981-1982 aimed at eliminating the most serious causes of the collapse. However, this activity did not bring about any significant results. Therefore, many very difficult problems still remain to be solved--problems which are related to the current economic and financial situation and whose occurrence is to be expected in 1983. We must orient our socioeconomic policy and especially our financial policy toward solving these problems. This is of fundamental importance for the attainment of financial equilibrium in the country and for the assurance of conditions indispensable for economic growth and the gradual improvement of the population's living conditions.

Extent of Collapse of Financial Equilibrium

The monetary income of the population in 1981 was more than 27 percent higher than in 1980 with an 11 percent drop (according to fixed prices) in industrial production and a concurrent serious drop in labor productivity. Even if prices for goods and services rose 21 percent at that time, the disparity between the population's financial income and the supply of goods and services was, nevertheless, very great. The growth of public funds (savings and cash) surpassed 280 billion zlotys whereas during years when the situation on the market was relatively good, it amounted to 20-30 billion zlotys. The underlying reason for this is that the public had nothing to spend their money on. Consequently, there occurred, among other things, a drastic worsening of supplies on the market, a large increase of funds without backing in goods and a collapse of enterprise profitability as a result of cost increases.

I should think that there is no need to convince anyone of the extent of the collapse concerning supplies on the market and the depletion of stocks since everyone of us has had the opportunity to become convinced of that personally. However, as far as the collapse of enterprise profitability is concerned, it is worth noting that generally the revenues of enterprises from sales were 6-9 percent higher than the costs which they incurred. In 1981, however, they were approximately 2 percent lower than the costs. High wage increases without backing in increased production and labor productivity and a decline in the degree to which production assets are utilized resulted in that on the whole in 1981, enterprises were unable to cover their costs with sale revenues, i.e. they incurred losses in the amount of approximately 180 billion slotys. Such development of the situation resulted in that the state budget was forced to lay out more funds for enterprise activity than it received from them in the form of various taxes. Consequently, budget expenditures were approximately 280 billion zlotys higher than current revenues.

The serious collapse of the country's financial equilibrium occurred despite boosts to the economy with large foreign credits, which caused our debts in socialist countries to rise 1.7 billion transfer rubles and in capitalist countries--3.5 billion. Thus, commodity relations with foreign countries were at that time still a factor which lessened the tension of the economic situation. However, they [commodity relations] were unable to prevent the severe collapse of the country's financial equilibrium, which attests to a serious disturbance between 1980-1981 of the fundamental principles of its functioning.

Achievements and Complications in 1982

In the presented situation, the fundamental task of economic policy in 1982 was, above all, to remedy the financial situation of the economy's basic elements, i.e. enterprises. In the face of a lack of possibilities to significantly increase production and labor productivity as well as reduce costs, considerable price increases turned out to be necessary. Producer and retail price increases introduced at the beginning of 1982 caused the revenues obtained by enterprises from the sale of goods and services to be approximately 1.3 billion zlotys, i.e. about 9 percent higher than the incurred costs. In nominal terms, the financial situation of enterprises underwent significant improvement. However, this cannot be said about the nation's entire financial situation and particularly about the market situation as well as about balancing the state budget and the country's balance of payments.

In 1982, we continued to deal with a drop in the national income and a drop in production, although to a much smaller degree than in 1981. At the same time during this period, a high increase maintained itself in nominal wages and other public income as well as in budget expenditures for keeping up the nonproduction sphere, especially social and cultural services. For this reason, the state financial balance for 1982 as in 1981 continued to be balanced by a large increase in the issuance of currency which is attested to

by a significant increase of more than 390 billion zlotys in public funds. The inflationary growth of the issuance of currency on such a large scale becomes a serious threat to the functioning of the entire economy.

The nation's imbalanced financial balance goes hand in hand with an imbalanced state budget. In 1982 it closed with a deficit.

In 1982, the budget took over from enterprises approximately 60 percent of the revenue surplus over costs attained by them. A sum of approximately 500 billion zlotys remained at the disposal of enterprises for wage increases, for social purposes and for developmental needs. This created conditions for self-financing by a large majority of enterprises. However, it should be clearly stressed that this was attained through a high increase in prices and not through an increase in production and the lowering of costs. Enterprises appropriated funds obtained in this way for, above all, wage increases and to a small degree for financing development. It is evident from this that during the first stage of the functioning of the new economic-financial system, the majority of enterprises underestimated their developmental-modernization needs and their significance for wage increases in terms of the next few years.

Income deficits were lessened in a vital way by revenues from foreign loans granted to us by the Soviet Union in the amount of 93 billion zlotys for the purpose of financing the turnover deficit with that country. This had a very positive effect on alleviating tension in our country's economic and financial situation.

The lower-than-planned budget revenues were compensated in part by limiting expenditures. These expenditures were approximately 80 billion zlotys lower than had been planned. This is due mainly to the limiting of subsidies for enterprises and the introduction by the government of economizing undertakings. In many instances, it also turned out that appropriated funds are not being utilized due to supply shortages. However, this does not change the fact that the state budget was weighed down in 1982 with very large sums of expenditures related particularly to surcharges on the continuing deficit prices of many goods and services as well as expenses for social and cultural activity and for social insurance.

From a financial point of view, the following fact is of vital significance: that in 1982 we attained the presented financial results and a production level which was only slightly lower than in 1981 with significantly higher exports to capitalist countries than imports from them. Consequently, trade turnover with the West comes to a close with a surplus in the order of 42 billion zlotys. This surplus is indispensable for maintaining the country's financial liquidity in foreign relations. Unfortunately, we must take reality into account from which it ensues that we can no longer count on anyone granting us credit on a larger scale. That is why, it is necessary to orient our economy to function for many years under conditions whereby import expenditures will be lower than revenues from exports.

In sum, it should be stated that despite an improvement in the financial circumstances of enterprise activity and in turnover relations with capitalist

countries, there still remain in 1982 difficult matters to be solved concerning balancing the budget and balancing the amount of currency with supplies to the market. The assumptions of the entire financial policy for 1983 have been geared toward gradually solving these problems.

Problems Facing 1983

Work carried out on the annual central plan has revealed that in 1983, the most difficult problem will continue to be balancing the public income with the supply of goods and services, supplying the country with the necessary raw and other materials from abroad as well as taking care of foreign debts.

In 1983, the state financial budget will again require balancing by way of issuing inflationary currency which will express itself by a large increase of public funds within a range of 300 billion zlotys. This is, to be sure, a smaller increase than in 1982 but in its assessment the fact should be taken into account, that this increase of funds is taking place after making allowances for initial assumptions which concern price increases on goods and services. These increases raise the mean growth index for retail prices in 1983 to 15 percent with an increase in public income in a range of 16 percent. This signifies that preserving even that degree of state financial imbalance, requires far-reaching disciplining of wage increases and increases in the remaining forms of public financial income. Any and all disruptions of the bond between price increases and increased production will lead to a further increase of issued currency without lacking and thereby to the intensification of inflationary processes with all of their negative socio-economic consequences (longer lines in front of stores and the flourish of the black market).

In 1983, we expect to obtain from the Soviet Union an amount of credits similar to that received in 1982. However, it can only decrease our difficulties in balancing our economy; it is incapable of eliminating them completely. We must also continue to expect the already mentioned necessity of systematically increasing the surplus of exports over imports in our turnover with capitalist countries. Every setback in the implementation of the accepted assumptions in this regard, will project quite severely on the country's payment capabilities and thereby on the size of the import of many raw and other materials which are important to our economy. The full implementation of export assumptions is, therefore indispensable even at the cost of the greatest effort on the part of the entire economy.

Foremost attention has been concentrated on maximizing revenues and on efficient budgetary expenditures for the purpose of creating premises for halting unfavorable trends in the shaping of financial equilibrium in the 1983 budget. This has made it possible to limit the budget deficit to approximately 151 billion zlotys. We are, therefore, stepping onto a difficult road of reducing the budget deficit and achieving financial equilibrium for the country. However, this road is made longer by great social pressure to increase spending for various social purposes. These

expenditures involve more budgetary funds than the amount of income which can be generated under current conditions. Unfortunately, many social and professional communities are incapable of accepting the fact that we are still living under conditions of a serious crisis.

Despite numerous economizing measures, it turned out that it was necessary to increase budgetary spending by 160 billion zlotys for 1983, therefore, 6.5 percent. The deciding factor here is the markedly social character of our budget which finances many important social needs from its fund.

The largest increase in spending falls to social and cultural activity. These expenditures are growing by approximately 65 billion zlotys, i.e. approximately 14 percent. This is caused primarily by such earlier decisions as: the statute in regard to the "Teachers Charter: including the decision to equalize the average salary for teachers with the average salary of engineering-technical workers. The implementation of the act regarding the establishment of a Fund for Cultural Development also entails a considerable increase in spending since the principles of its formation cause the budget subsidies for this fund to increase as quickly as remuneration for work performed in the economy as a whole. An important place is also held by expenditures related to the increase in the number of hospitals, kindergartens, and other social facilities whose functioning requires increased employment and budgetary funds to cover operating costs. A growing need for medical drugs in hospitals and for the insured also requires financing. It is obvious that the proposed high increase of spending for social and cultural purposes is still not sufficient to meet many important needs, however, we are simply unable to afford more and in reality that which has already been submitted to the budget for 1983 exceeds our economy's means. It is to be expected that in many cases, difficulties may occur in obtaining supplies of required goods and services with the money anticipated in the budget.

The state budget is being increasingly weighed down with investment expenditures. In 1983, they will increase more than 54 billion zlotys. This results from the necessity to finance central and other important investments from the budget. These are important investments because of social reasons as well as strategic concepts of economic development. The operation of facilities built within the scope of these investments cannot assure adequate profits for the repayment of investment credits. What this concerns mainly is communal, housing and transportation investments. Despite the increased expenditures, the budget will not be capable of fully financing all of the needs for these types of investments. All the investors must put in their utmost effort so that the investment costs will not be too high and that a major portion of them will be financed with the concerned enterprises own funds.

A significant increase in budgetary expenditures is caused by the amortization of certain bank credits and by surcharges on low credit interest. This concerns, particularly, expenses for the amortization of credits intended for the construction of cooperative housing which have increased more than 20 billion zlotys, i.e. 68 percent as well as expenses for the amortization

of credit for agriculture which have increased more than 10 billion zlotys or 40 percent. Important social considerations do not permit the transfer of the entire amount of building costs to persons receiving new apartments. They also do not allow a profitable rate of interest on bank credits. On the other hand, amortization of a part of the investment credits granted to individual farmers constitutes an important factor in the management by the state of these investments.

In 1983, the budget will continue to be weighed down with high surcharges on food whose retail prices do not cover the costs of procurement and processing. Expenditures associated with this will come to approximately 186 billion zlotys and even if they should be somewhat lower than in 1982, this will be mainly due to the fact that in taking into account trends which occur in agriculture, a certain decline in the level of procurement should be anticipated. Moreover, the budget will continue to add surcharges of approximately 29 billion zlotys to certain agricultural supplies and particularly mineral fertilizers, industrial fodder, insecticides and tractors. This indicates that despite the significant price increase carried out in February of 1982, the budget will continue to add considerable surcharges [doplaty] to the financing of consumption in order to counteract a larger price increase on food and certain agricultural supplies.

Surcharges on passenger transportation will also be high. Even after the carried out rate increases, these surcharges will exceed 60 billion zlotys. However, a more significant reduction of surcharges from the budget will apply to supply goods and freight transportation. However, this will not occur until after the introduction of the second phase of the supply price reform.

Expenditures for state administration, for the administration of justice and national defense will increase relatively insignificantly since only 6.6 percent.

In general, it may be said that in planning all the budgetary expenses, the following principle applies: that we must be frugal, even very frugal but we cannot be miserly. This means that we must restrain our spending there where it is not essential but we cannot hold back on expenses which are very important from a social or economic point of view. In particular, economizing measures cannot undercut the basic needs of the national economy's development. However, we must always remember that we are living in a period of an acute crisis and that we simply cannot afford to satisfy many, even very important needs. On the other hand, limited possibilities for the procurement of material goods result in that allocating money from the budget alone does not in reality take care of and cannot satisfy many important needs. In order to spend more, we must above all, produce more.

It is obvious in this situation that a great deal of attention was devoted to revenues in the work done on the budget for 1983. Numerous undertakings aimed at increasing budget revenues resulted in that for 1983 their increase may be estimated at approximately 250 billion zlotys, i.e. 11.2 percent. This enables the already mentioned reduction of the deficit to 151 billion zlotys. However, it is not enough to eliminate it.

In the assessment of such a structure of budgetary revenues, it should be taken into account that in 1983 we will be dealing with a moderate increase in the national income, since it will range between 2-2.5 percent and approximately a 4 percent increase in the case of industrial production. Under these circumstances, an increase in income of more than 11 percent ought to be considered very high. One of the essential conditions for the attainment of such an increase in income is to achieve improvement in efficiency of management. We anticipate that the mechanisms of economic reform will give greater results in the second year of its functioning. In order to lend stronger support to this process, we are even proposing a slowing down of the progress of income tax in the upper brackets of profitability as well as a system of tax relief including taxes due to the undertaking of preferred investment ventures. This is where we come face to face with numerous proposals submitted by enterprises. We are anticipating that tax reliefs will be conducive to production growth and thereby increase budgetary revenues. However, things will be very bad if the slowing down of tax progression will express itself not in production growth but in the acceleration of expenditures for wages. In such a situation, further intensification of tension in the market situation will occur.

In order to persuade enterprises to intensify efforts for production growth, above all, appropriate changes in the principles of the functioning of the State Vocational Activation Fund [PFAZ] are foreseen. These changes are aimed at building up incentive for increased production through a closer relationship between wage increases and increased labor productivity. In addition, it is anticipated that the burden of expenditure of the PFAZ will be dependent not on the increase in average wages but on the increase of the total amount of funds for wages. This ought to promote efficient employment, the lack of which is the principal drawback of the solutions existing until now and which stops the inflow of workers to many establishments where they are urgently needed because without additional employment, production cannot be increased. However, all of this results in that budgetary revenues from the PFAZ will still not be large.

Revenues obtained from the public and from nonsocialized farming present a separate problem. They have an important social significance even though they barely constitute 1.9 percent of the total amount of the state budgetary income. Their development necessitates the reconciliation of two tasks which are difficult to reconcile. That this concerns is the creation of a tax system which could promote further development of skilled trade and small private production. However, in accordance with the demands of social justice, this system must counteract the accumulation of excessive wealth and fortune which is not acquired through work effort.

The now-existing principles of the tax system did not inform adequately about the formation of the income of certain groups of high wage earners. That is why in 1983, the record of income will be expanded for tax assessment purposes. This is essential in order for taxes to be more closely tied in with the acquired income and is also a condition for carrying out a stable tax policy and thereby the stabilization of economic conditions for the functioning of skilled trade.

As far as changes in the levelling tax are concerned, they meet society's demands that all, and particularly high, income be included in this tax with a concurrent increase in the amount of income which is tax free in accordance with the current price and wage structure.

Work is also being done on preparing a reform of the land-tax which is collected from private farms. This tax which has not changed essentially in the past 20 years, does not in practice fulfill any of its functions. Changes in other taxes have also been prepared, namely in: inheritance and gift taxes, regional taxes and fees as well as treasury fees. Generally speaking, all of these changes are aimed at adjusting these taxes to the changing economic and social conditions.

In connection with numerous proposals in regard to reducing the assessment of taxes and fees which weigh down upon the public, it should be remembered that these taxes, although not very high, are nevertheless a factor which reduces tension in the market situation and restricts the issuing of currency without backing in goods.

The described structure of budgetary expenditures and revenues does not as yet assure a reduction in the budget deficit for 1983 to the previously mentioned amount of 151 billion zlotys. In order for this deficit to place itself within the range of the above-mentioned amount, it will be necessary to assume many additional undertakings for the total amount of 322 billion zlotys of revenue. This concerns the following matters in particular:

The gradual increase from the beginning of next year [1984] of the selling price of certain raw and other materials as well as price increases on the transport of goods according to the increase of production costs, and the gradual adjustment of these prices to world market prices. This will make it possible to limit, although not eliminate, surcharges paid from the budget on, among other things, rail transport and surcharges on coal.

The necessity of carrying out retail price increases in 1983 on certain market goods and public services should also be taken into account. The first of these increases, pertaining to passenger transportation rates, has already been implemented. These increases will lead either to the growth of budgetary revenues or to the limiting of subsidies for deficit production.

However, the scope of increases will not be as high as in 1982. Social considerations require that the scale of price increases be no higher than the growth of the public's financial income so that the real income of the public would not undergo reduction. For this reason, we must consistently oppose unsubstantiated price increases aimed at obtaining high profits which are not justified by increased production and the lowering of costs. Financial and price regulating institutions must intensify the control of cost and price structures. For this purpose, among other things, unsubstantiated costs and losses incurred as a result of various forms of inefficienty will be taken into account when income taxes are collected. All of this is aimed at creating a situation in which problems related to

shortages of goods on the market will be solved by, above all, increased production and to a much smaller degree by price increases. However, the implementation of this principle is possible only on condition that the growth of public income, as had already been mentioned, will be adequately justified by increased production and labor productivity.

Among other undertakings adopted in the state budget, it is also worth mentioning the earlier announced increase of insurance premiums from the current 33 to 43 percent of wages. These funds will be used for intended increases in pension and retirement pay, the so-called old-age pocketbook; for planned increases in family allowances and to cover compensation for families of employees of the socialized sector of the economy which is not covered by work establishments and which places a burden on the budget. Without this increase, the implementation of the reform of the pension-retirement system would cause a considerable deepening of the budget deficit.

Only the full implementation of the presented plans, without the further increase of expenditures, can permit a reduction in the budget deficit to the already previously mentioned amount of 151 billion zlotys. If these plans were not to be implemented, then the state budget deficit would amount to 460 billion zlotys in the coming year. Such a great deficit would cause the total collapse of the nation's financial equilibrium and would intensify inflationary processes which would lead to complete market disorganization.

In the presented situation, all additional proposals which are not included in the plan of budgetary spending for 1983, may be implemented only on condition that additional, realistic sources of income are found which would entail placing a burden on society. Otherwise, the implementation of even the most noble intentions will lead to the printing of currency without backing with all of its accompanying negative consequences. All of the current assessments of the prospects for the country's economic development in 1983, indicate the urgent need for finding ways of further increasing budgetary revenues over and above the plan assumptions and for reducing expenditures in order to limit the budget deficit to a minimum. The imbalanced economy and particularly supply shortages on the market as well as the trend toward price increases are felt very actualy by all of society.

Payments Situation

In accordance with the statute regarding socioeconomic planning, the Sejm adopted a resolution, for the first time, on the balance of payments for 1983. Payments and credit policies in foreign relations project in a very vital manner on the country's overall economic and financial situation.

Poland's payments situation shapes itself in a fundamentally different way in both foreign-exchange areas.

In the foreign-exchange area of socialist countries, a high level of trade turnover was attained in 1982. Commodity supplies from the Soviet Union played a particular role in this case. Last year [1982], this turnover closed

with a considerable deficit. The Soviet Union granted Poland additional credit equalling approximately 93 billion zlotys to cover this deficit. At the same time, this credit amount increased the budget income and, above all, it contributed significantly to the alleviation of our economic problems.

During the current year, the balance of payments in the foreign exchange area of socialist countries will continue to reflect the economic assistance received from the Soviet Union. We anticipate that owing to the new credit from the Soviet Union, we will be able to maintain a surplus of imports over exports in the amount of approximately 82 billion zlotys. Under these assumptions, our debt in socialist countries will come to approximately 320 billion zlotys* at the end of 1983.

The growing amount of this debt indicates the necessity for expanding the economy's ability to increase exports to markets of socialist countries.

In the foreign-exchange area of capitalist countries, the balance of payments in 1982 shaped itself under the influence of the "credit blockage" imposed on us, which limited our import capabilities and had a negative effect on production and exports. For this reason, revenues from exports to capitalist countries were 27 billion zlotys lower in 1982 than in 1981. The decline in imports was even greater--approximately 130 billion zlotys. Because of this, trade turnover with the West closed with a surplus of approximately 42 billion zlotys.

As far as the assumptions for this year's balance of payments are concerned, it should be stated that assuring both a proper balance structure and a sufficiently high level of turnover, are becoming matters of exceptional importance. This will also decide about our ability to provide for the national economy and about the gradual formation of premises for solving the debt problem. For this reason, the attainment in 1983 of an increase in export revenues from 412 to 470 billion zlotys represents a extremely crucial task. This is a minimal task if we are to take into account the fact that the planned increase of export revenues represents only a gradual recapture of the lost ground and a slow return to the level of revenues from 2 years ago.

The projected increase of export revenues will make it possible not only to develop a surplus in the balance of trade, in the amount of 59 billion zlotys, which is necessary under our present circumstances but also to increase imports from western countries. It is assumed that spending for imports will increase during the current year from 370 billion zlotys to 412 billion zlotys, thus to a degree which will allow for further improvement in the country's supply situation and growth in export production.

Development in the field of exports and improvement in the import situation will be supported by economic instruments. Exporters will be able to take

* 1 transfer ruble = 68 zlotys

advantage of special tax relief. The system of foreign-exchange allowances from exports will be retained in full for the financing of the import needs of export enterprises.

Matters related to the settling of our credit obligations to the West as well as the overall picture of our credit relations with this area constitute a particularly complex problem. As is well known, talks on the deferment of the repayment of our obligations and their refinancing with new credits, were unilaterally suspended by the governments of western countries for political reasons.

During last year, we were able to reach an agreement only with commercial banks, which we are implementing in full.

What will the situation look like in 1983?

Our debt at the end of 1982 amounted to 2,115 billion zlotys*. In the present situation, we are unable to bear the full cost of settling this debt. We must adjust the repayment of our obligations to our realistic capabilities. With this in mind, we are allocating approximately 160 billion zlotys for this purpose in 1983. The remaining part of interest requires refinancing. After taking into account the assumed repayment in 1983, our debt will increase another 255 billion zlotys i.e. to a total of 2,370 billion zlotys.

We are hoping that our creditors, with their own good interest also in mind, will begin to cooperate sensibly for the creation of conditions that would enable the finding of a solution to our country's payment problems instead of imposing various kinds of restrictions on economic cooperation.

We uphold our often expressed readiness to renew talks with all of our creditors. In these talks, we will propose the full normalization of credit relations and the desire to find long-range solutions which will take into account our plans for overcoming the crisis and projects for economic growth in the 1980's. Only through a recovered and growing economy will Poland be able to meet its obligations in the future. Let us hope that such an a approach will be met with understanding.

'ZYCIE GOSPODARCZE' Editorial Reaction

Warsaw ZYCIE GOSPODARCZE in Polish No 9, 27 Feb 83 p 16

[Commentary by S.C.: "Equilibrium"]

[Text] In the last issue of NOWE DROGI, there appeared articles by the minister of finance, Stanislaw Nieckarz, and by the director of the Institute of Materials Economy [IGM], Czeslaw Skowronek. These articles pertained to economic equilibrium on two crucial levels: financial and materials

* $1 = 86 zlotys

supply. Strictly speaking, these articles deal not with equilibrium but with the lack of it and the consequences resulting from this lack for true economic processes as well as for the process of implementing economic reform.

It is well known that the reform assumes that the relationship between economic organizational units (between respective enterprises and also between enterprises and consumers), will be implemented with the help of the money-market mechanism. However, the road to the implementation of this assumption is long. A significant part of turnover on the domestic market is conducted with the aid of the ration-card system and on the supply market--with the help of various forms of distribution. This is an outward expression of a lack of equilibrium. There occurred a disruption between the flow of currency and the flow of material goods and services. In simple terms, the fact that one has money does not at all mean that the necessary goods or services can be obtained with it. This concerns individual citizens as well as enterprises.

I will not enter here into ponderings on the subject of the sources of such a state of affairs, even though they occupy quite a lot of space in both articles. It seems more interesting to me to see how in the opinion of the authors, the situation shaped itself in the past year and whether there is a closer tie between these two flows. The answer to this question has a key significance for the further fate of the reform and for the gradual elimination of temporary solutions which have been forced out by the situation but which are not compatible with its ultimate form.

Minister Nieckarz asserts that last year, there occurred a considerable improvement in the financial situation of enterprises. Inasmuch as the revenues of enterprises from sales were approximately 2 percent lower in 1981 than their costs, then in the past year this revenue was already approximately 9 percent higher. However, this change was implemented primarily not as a result of an increase in production or labor productivity but as a result of increased prices. It is now wonder, therefore, that this did not also lead to a significant improvement of the state financial balance. This is reflected in, among other things, the budget deficit and the increased issuance of currency.

The state has taken over from enterprises approximately 60 percent of the surplus of revenues over costs. Minister Nieckarz feels a grudge toward enterprises for allocating a major portion of the remaining 40 percent of the surplus, which was supposed to serve self-financing, for wages and not for developmental purposes.

However, something should be added here. Thus, that enterprises have allocated even more money for the development fund than had been assumed initially. If in spite of this, funds for wages were increased at the same time and the required taxes were paid to the state, then obviously the solutions of the financial-economic mechanism made such actions possible. Naturally, understanding of the overall social needs may be demanded of enterprises, however, we cannot demand that they act against their own

interests and at the same time against the accepted rules of the game. Therefore, solutions of the economic-financial mechanism should be improved, above everything else, while making allowances in them for the fact that there is a lack of equilibrium in the area of supplies. This fact must have a substantial influence on the actions of enterprises.

Those who see a real chance for production growth will allocate large amounts for the development fund. However, the supply situation in a majority of cases does not create such chances. Director Skowronek asserts that an improvement in the supply situation did occur last year but only in a narrow segment of the economy; this pertains to coal, cement and lumber. However, in many areas which are closely tied to imports from the second payments area [capitalist countries], there occurred a worsening of the situation. The system of supply agreements between enterprises for a somewhat longer period of time (even if for a year not to speak of agreements for long-term supply deliveries) has also not proved itself, as yet. This too does not encourage enterprises to take on long-term developmental ventures. On the other hand, there exists strong pressure for the renewal of the old forms of distribution through branch ministries or provincial departments, when after all, in accordance with the made assumptions, this is not supposed to be organizational-unit distribution but objective distribution (not grouped into ministries or associations but into groups of products).

And finally, a matter about which, in principle, there is no mention in the two articles but which also influences the actions of many enterprises.

What this concerns is the situation on the investment front. In the face of a continually wide range of central investments and the allocation of the majority of funds for continued investments, enterprises as a rule have little chance to take on development tasks which require the expansion of a plant or machinery. It is very difficult to obtain credit for such purposes and even if one has the funds, it is equally difficult to acquire the necessary material or equipment with them. This too does not encourage the setting aside of a greater portion of profits for the development fund.

It appears, therefore, that a more thorough analysis of the factors which influence enterprise decisions is necessary since hasty evaluations may turn out to be inaccurate and may lead to ineffective actions. We must all still continue to learn about the reform (journalists as well!) those at the bottom as well as those on top.

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RAIL TRANSPORT GROWTH PLAN FOR 1983-85 EXAMINED

Warsaw EKSPLOATACJA KOLEI in Polish No 1, Jan 83 pp 12-18

[Article by Ryszard Godlewski: "Program of Railroad Transport Development for 1983-85"]

> [Text] In the last few years, inadequate capacity of rail transport was manifested in continuing deterioration of operation characteristics: increasing freight car turnover time--resulting from longer travel time and longer stays at loading stations, as well as service time; erosion of the regulatiry of passenger and freight transport; worsening utilization of tracks and facilities; and a large increase in the number of cars in poor technical condition and the related growth of the emergency index of railroad operation.
>
> Difficulties experienced by the national economy in general are multiplied manifold in transport, and, worst of all, in rail transport--which further aggravates a difficult situation.

For over 15 years, railroads have been operating in conditions of constant shortage of carrying capacities. Deterioration of the working conditions of railroads and the consequences of the situation have been repeatedly brought to the attention of supreme party and government authorities by the transport ministry. As a result, a great number of decisions, resolutions and programs were adopted, which, however, were never completely implemented, while the process of depreciation of all technical facilities of the railroads went on unabated.

Drop in production that occurred in the entire economy after August 1980 took the weight off transportation problems because of the unjustified feeling that in a situation of lower transportation demands the issue of modernization of railroad transport and its technical base could be postponed to later years. After the period of disruptions, however, there was a gradual increase of production, with a new rise in transportation; the transport potential of railroads again became inadequate.

Evaluation of the Situation in Rail Transport

The current situation in rail transport is due to diverse external factors --of a material nature, particularly problems with supplies, difficulties in obtaining sufficient numbers of personnel and inadequate productivity of the depreciated infrastructure and maintenance and repair facilities. Stopping continual degradation of the technical base of railroads becomes more difficult every day; unless decisive steps are taken, the further inevitable deterioration will soon result in a situation where the transport will become the major handicap to the economy's emergence from the current crisis.

The gap between the required and available carrying capacity of railroads results from insufficient carrying and traffic capacity of main transportation lines, poor technical conditions of road beds and electric locomotive line network, concentration of loading work, as well as general transport overload of Silesian rail infrastructure. Other factors are the poor technical condition of rolling stock, particularly freight cars, and inadequate conditions of railroad facilities involved in the maintenance of rolling stock and equipment, especially a shortage of materials, machines and tools for road bed repairs.

In Poland's rail transport, a decisive function is performed by the basic lines network, of a total length of some 12,000 km, where the bulk of rail operations occurs, and which must be adapted to large carrying capacities.

This network is overloaded and requires reinfrocement, particularly in the southern routes. An acute capacity shortage is felt in the lines from Silesia to Baltic seaports. The existing coal main--Tarnowskie Gory-Gdansk-Gdynia--is already used to its fullest capacity. The lack of another, parallel line in that direction creates tensions, most badly felt during periods of intensified traffic and during repair and maintenance work. This frequently leads to traffic disruptions.

Limited resources have prolonged the construction of the Central Main Railroad, expected to take over a portion of traffic from Silesia to Warsaw and the nation's center. For the same reason, modernization of Odra main, expected to have a large carrying capacity, is also dragging.

Heavily loaded are lines from Silesia towards Szczecin and Swinoujscie via Wroclaw and Leszno, as well as Tarnowskie Gory-Ostrow Wlkp. - Poznan.

Difficulties with carrying capacties are observed also in the east-west direction, especially on the Malaszewicze-Warsaw-Poznan-Rzepin direction.

Rail operation is made more difficult by underdeveloped rail networks in Silesia, particularly on branches connecting Silesia with the nation's economic centers. A basic factor limiting the traffic capacity of railroad ines is the poor condition of the road bed caused by many years of

backlogs in basic repair and routine maintenance. The backlog of basic repair is estimated at 6,000 km of road tracks, plus 3,000 km of railroad turnouts.

The traffic intensity currently requires an annual replacement of at least 2,500 km of track, plus some 1,600 km of road bed; bringing the system up to date thus calls for a major increase of the pace of road bed repair work.

The technical condition of rolling stock, particularly freight cars, is unsatisfactory. The technical parameters and average service life have been improving due to the introduction of new rolling stock and elimination of old cars. Yet, the intensive operation of railroad car equipment, damage to the rolling stock during loading and unloading, and switching operations result in disconcertingly high proportions of cars in disrepair.

The technical condition of rolling stock is predicated on the capacity of industrial and operational facilities of railroads. The currently available repair potential is inadequate both qualitatively and quantitatively. Industrial and operational facilities are obsolete and not adaptable for maintenance and repair of modern locomotive and railroad car rolling stock. A shortage of servicing space and a lack of modern machines, equipment and repair facilities is felt badly.

General Principles of Transportation Policies

In the past two years, the transportation situation in the country has been characterized by the demand for traffic of freight loads, accompanied by an increased share of rail transport in total freight traffic. This is confirmed by statistical data.

Table 1. Share of Total Freight Load Traffic Measured in Ton-Kilometers (percent)

	1979	1980	1982
Rail transport	74,6	74,5	78,7
Motor transport			
--public	5,5	5,8	5,2
--specialized	8,2	8,3	6,6
--enterprise	10,7	10,2	8,1
Inland waterway transport service	1,0	1,2	1,4

In 1980, due to increasing shortages of liquid fuel, restrictions for meeting the transport needs of the economy were lifted, eliminating the previously existing barriers and acceptance of certain types of loads for rail transportation. These steps and further striving of economic

units--in accordance with the mechanisms of the current reform--to cut transportation costs, resulted in significant switching of freight loads from motor to rail transport. Share of motor transport decreased also in delivery of freights to and from railroads. Among other things, this was due to limitation of the practice of supply of coal to centralized receiving points from where it was carried by motor vehicles.

Accessibility of railroads has also improved, after lifting of the requirement that customers follow the instruction of rational freight load directions. It has been recognized that bringing the freight sizes to a publicly and economically justified level should lie with the mechanisms of the economic reform.

Adequacy of these solutions is confirmed by the currently observed reduction of transport-intensiveness. The decrease of average load size, however, was accompanied by unevenness of the freight flow, detrimental for the railroads. This was caused by a drop in freight loaded on Saturdays and Sundays. Railroads have thus not felt the effects of the general reduction of freight transportation as other transport subsectors. Railroads are still working at the peak of their capacities, further limited by continuing amortization of the infrastructure and inadequate technical and material supplies.

In the principles of the transportation policy for the period of emergence from the crisis and stabilization of the economy, the following main lines of activity have been adopted:

--Preferred transportation by carriers with low unit cost or relatively low fuel and energy consumption.

This means, as far as possible and justified, switching from motor vehicles to rail and inland waterway transport. These two subsectors are characterized by favorable labor, capital, material and energy intensiveness.

In rail transport, preference is given to operation by electric locomotives, with simultaneous limitation of the use of diesel and steam locomotives.

In motor transport preference is given to public transport, which has higher stock utilization indicators. Transportation by specialized and particularly private vehicles all being limited.

--Channeling the possibly large outlays for capital repair and current maintenance of transport infrastructure to limit the continuing material amortization of the technical base, and focusing investment on elimination of elements restraining the carrying capacity of transport.

This involves intensified railraod and highway repairs, improvement of the technical conditions of safety equipment and switching facilities, as well as considerable increase in the number of repaired locomotives and railroad cars and enhanced quality of repair.

Emphasis is laid on introduction of electric traction at main transportation lines of railroads and development of the repair facilities of the railroads' technical base.

--In the area of economic-organizational activities, steps will be taken to make transport enterprises financially self-sufficient to ensure implementation of appropriate operation and development policies.

Development Directions of Rail Transport in 1983-85

Introduction since 1982 of new economic and financial principles and assistance by CEMA member nations, including supply of materials from them, are expected to bring about a livelier pace of material production and a gradual growth of demand for rail transportation. A growth of rail transport is thus anticipated, the rate of this growth being determined by the level of production of hard coal and such raw materials as sulfur, brown coal, as well as power production development. Besides the large increase of coal transportation, there will be an increase in the demand for rail carriage of such major freight loads as baked coal, gravel, cement, ore, products of metallurgical and engineering industries and artificial fertilizers. The traffic of agricultural produce and products is also expected to grow.

For maintaining the principles of liquid fuel economy, railroads will have to continue to take over loads previously carried by motor vehicles. This concerns primarily bulk freight loads carried to medium and long distances.

In accordance with the above conditions, the demand of the economy for transport of loads on standard track railroads will appear as follows:

Table 2

	1980	1981	1982	1985
Loads carried (million tons)	473.2	394.0	402.1	425.0
Transportation work (billion ton-kms)	134.5	109.6	112.0	120.5

Transit loads are a substantial part of transportation work performed by railroads. Their share in freight transport amounts to some 4 percent and is stable (million tons):

Table 3

	1980	1981	1982	1985
East-west	7.0	6.9	7.3	7.4
West-east	2.6	2.6	3.2	3.0
North-south	4.6	5.1	4.1	4.0
South-north	2.6	1.7	1.9	2.0
Total	16.8	16.3	16.6	16.4

Performing this transportation work requires maintaining and updating an appropriate system of rail lines and stations, particularly terminals.

In accordance with the international obligations undertaken in the CEMA Long-Term Cooperation Program Guidelines, work is conducted to introduce electric traction and reconstruct many of the existing railroad lines.

On the Berlin-Warsaw-Moscow line, electric traction will be introduced on the Zbaszynek-Rzepin segment, which closes the Terespol-Kunowice transit line. Traffic safety systems will be installed on Malaszewicze-Lukow, Siedlce-Warsaw, and Lowicz Gl.-Kunowice segments, and Lukow-Siedlce and Warsaw-Kutno segments will be reconstructed.

This will improve the technical paramaters of the line, increasing its traffic capacity and reducing the operating costs.

Electric traction will be introduced also on other international lines, as determined by the program of development of electric traction on the railroads.

Transit transport will bring foreign-exchange revenues into the state treasury.

From 1981, after a stable period, there has been an increase in railroad passenger transport (1980, 1,094 million passengers; 1981, 1,107 million; 1082, 1,103 million).

Passenger Transport

Transportation mobility of Poland's population is relatively high. It follows from the spatial distribution of the existing economic potential of the nation, development of major urban-industrial agglomerates and the concomitant migrational processes in the population caused by an increased average distance between places of residence and work or school, and development of various forms of tourism and leisure and the associated demand for transportation to vacation and resort areas, particularly at vacation season peaks.

The current growth of passenger transport was also induced by the difficulties with fuel and the resulting reduction of bus service and limitations of private motoring.

Despite the raises in rail fares, these tendencies are expected to continue in the next few years. The estimated increase of railroad passenger transport to 1,140 million passengers in 1985 thus appears to be justified.

In passenger transport by rail, much attention is given to commuter trains bringing people to work and to school. Continuing growth and universal use of these services (accounting for nearly 60 percent of

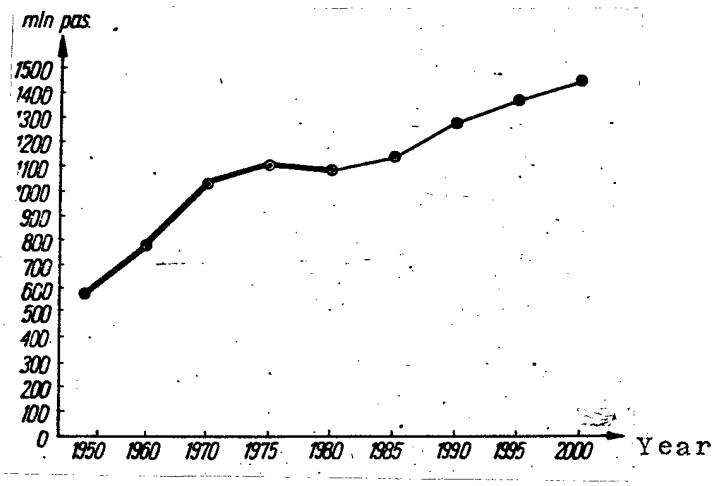

Fig. 1. Passenger traffic in 1950-80. Projected trends till the year 2000.

total rail passenger transportation) requires particular attention on the part of transport workers. Continuing improvement of commuter services is an important task of railroads. Besides the organizational problems that have to be solved, high quality rolling stock in sufficient amounts is required to meet this challenge.

Increased passenger traffic and the need for reserves and improved quality of services provided by railroads require the supply of new rolling stock with better design parameters. Introduction of new rolling stock for passenger transport in 1983-85 is anticipated at 1,374 passenger cars and 240 electric locomotive units.

It is crucial to produce in the nearest future and deliver to the railroads: • boxcars which have not been received by the Polish State Railroads [PKP] for several years, resulting in temporary difficulties such as the impossibility of complete and efficient transportation of grain, fodder, etc.; • electric locomotives of 850 kW for switching stations; • diesel locomotives of 880 kW with electric heating equipment for passenger trains; • diesel locomoties of 1,650 kW for servicing of passenger traffic; and • rail buses or diesel cars for servicing of commuter traffic.

Evaluation of the production capacity conducted earlier jointly with the rolling stock industry indicated that delivery of new freight cars in 1983-85 will amount to 16,000 units, including 7,750 boxcars, 106,700 coal cars and 2,760 units of other types.

In anticipation of the increase of demand for freight load carriage by rail, further increase of delivery of freight cars should be ensured.

Table 4. Delivery and Scrapping of Freight Cars
(thousands of cars)

	1975	1976	1977	1978	1979	1980	1981	1982
Delivery of new cars	13.4	13.5	12.4	13.0	10.7	9.6	5.5	2.9*
Scrapping from inventory	6.7	8.1	6.5	8.0	11.3	9.1	11.0	10.0*

*Estimated amounts.

Tracks and Structures

The repair of road bed services requires top priority. The scope of basic road bed repair should be increased to attain in 1985 annual replacement of 2,500 km of rails, 4,500 cross-ties and 48,000 tons of switches.

Plans envisage also increased repairs and routine maintenance of the electric locomotive lines network, and railroad buildings and structures.

Labor shortages and difficulties with finding workers for the railroads require increasing in 1983-85 mechanization of road work, particularly through partial import of modern machinery and equipment and launching production at factories of the Ministry of Transportation of new types of highly productive machines for road bed repair.

Performance of this work will require the delivery of necessary materials, including rails, cross-ties, switches, crushed stone and accessories. Enlarging productive capacities in domestic industry and, in particular, in the technical base of railroads to meet these increased needs is necessary.

In view of the current situation in the economy, it is anticipated that the development in 1983-85 will be concentrated on major and crucial construction projects, critical for maintaining the capacity and operative condition of rail transport. This means that the bulk of investment will be allocated for developing electric traction, restoring and enlarging the railroad maintenance and repair facilities, housing construction and completion of some major previously started projects.

Development of Electric Traction

Increased carrying capacity accompanied by reduced energy-intensiveness and costs of railroads can be achieved only by a faster pace of transition to electric traction.

By the late 1970s, PKP had a total of 3,872 km of electrified railroads. Between 1971 and 1978, electric traction was expanded to only 2,996 km, so that the average annual electrification rate was nearly 300 km, compared with 400-500 km stipulated by plans.

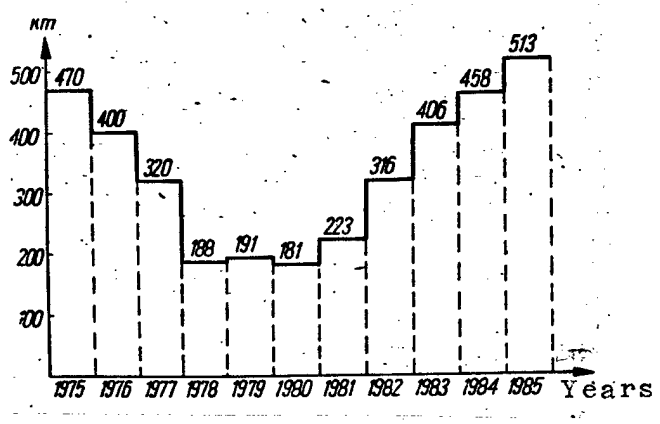

Fig. 2. Electric traction on PKP lines in 1975-85 (for 1983-85, electric traction is projected to be extended to some 1,550 km, that is, 173 km more than as shown in the figure).

The breakdown of electric traction development program of the PKP occurred in 1976. The plan for 1976-80 envisaged introduction of electric traction on at least 2,100 km, but the actual figure was 1,280 km, i.e., 820 km less. Restoration of the electric traction development pace attained in the past years to the level of 400-500 km annually follows from the need for eliminating steam traction by the early 1990's, improved working conditions of engineers and reduced use of diesel locomotives. Restoration of the pace of electric traction development will ensure meeting the electrification goal by around the year 2000.

Analysis based on economic calculations shows that electric traction development of railroads will yield large power savings. For instance, electric traction of 100 km of railroad lines currently serviced by steam locomotives will save 104,000 tons of coal annually, and, if it replaces diesel traction, 7,600,000 tons of diesel fuel. The goal is to introduce electric traction on 70 percent of railroad lines, i.e., some 17,000 km, which will concentrate some 90 percent of the entire PKP transport operation. Electric traction currently encompasses some 7,174 km of railroad lines, i.e., 29.4 percent of the PKP network.

Lines of the basic network to be the first be switched to electric traction carry the heaviest traffic load; it will result in eliminating from those lines powerful diesel and steam locomotives. Electric traction will also be introduced on lines which do not belong to the basic network but which are segments connecting electrified routes and ensuring operation efficiency and flexibility.

For 1983-85, some 1,550 km of railroad lines are to be switched to electric traction.

Improved Transportation Servicing in Silesia

Besides electric traction and developement of the operation base, plans envisage modernization of transit lines and terminal stations in Silesian Railroad District, as well as completion of the construction of eight terminals on the Zabrze-Kielcza-Fosowskie-Kluczbork line. Development and modernization of major switching stations (Niedob, Gliwice, Lazy, Tarnowskie Gory, Jaworzno Szczakowa) will be continued, including installation of line block systems and other modern railroad traffic safety units. In addition, due to suspension of the building of the Central Coal Port at Tychie, new rail systems will have to be built for transportation of the new hard coal mines at Czeczot and Piast.

A major task is planned construction of two pairs of tracks near the Katowice transport center on Zabkowice-Katowice-Gliwice and Katowice-Tychy lines. This involves improving passenger service in this major industrial area. The estimated cost of the project is expected to exceed 30 billion zlotys in 1982 prices. The technical difficulties to be surmounted in implementing this project in this heavily urbanized area suggest that it should be planned for 1986-90. Completion of the project will take some 10 years.

Railroad Operating Facilities

Uninterrupted operation of railroads requires an increased maintenance and repair capacity of railroad carshops and locomotive shops. To deal with current difficulties, the existing facilities will be modernized, and repair and maintenance service stations will be furnished with additional machines and equipment. In 1983-85, carshops are to be built in Gdynia, Poznan Franowo, Skarzyska Kamienna and Zajaczkowo Tczewskie; freight car repair shops will be built at Tarnowskie Gory, and passenger car repair shops at Warsaw-Grochow carshop. In the same period, locomotive shops will be built at Czerwiensko, Jelenia Gora, Rzepin, Debice, Gliwice, Malaszewice, Sedziszowo, Poznan Plewiski, Lublin and Zabrzeg Czarnolesie.

Meeting requirements for rolling stock repair calls for increasing repair potential of Railroad Rolling Stock Repair Shops [ZNTK] by way of developing and modernizing existing enterprises. Given realization of planned investments, achievement of necessary levels of employment and availability of materials and spare parts (both domestic and imported), the possibility of meeting the needs in rolling stock repairs in 1983-85 appears as depicted in the table on the next page.

Repairs of four-axle freight cars will increase from 25,500 cars in 1982 to 60,000 in 1990, i.e., almost 2.5-fold.

Before achieving adequate production potential, one must recognize a necessity of continuing inspection and routine repair of freight cars in carshops up to 20,000 cars annually, despite the fact that these installations are not technically suitable for repairs of this kind.

Table 5.

(%)

	1983	1984	1985
Diesel locomotives	69.1	78.4	89.4
Electric locomotives	82.6	84.8	85.8
Electric locomotive units	76.6	75.7	73.2
Freight cars	75.6	85.9	82.9
Passenger cars	94.9	100.0	100.0

Investment Development

Until 1985, modernization of facilities will include centralization of some 100 turntables annually, installation of automatic block systems on some 100 km of lines annually, installation of some 80-100 warning signalization facilities on railway crossings and laying some 400 km of power cables every year.

Modernization and development of stations and terminals started in previous years will continue, including the following stations: Warsaw-Praga, Lodz Olechow, Poznan Franowo, Lubin Tatary, Wroclaw Brochow and Krakow Prokocim.

Under the current financial conditions, railroads are incapable of carrying out all the necessary infrastructural construction. For this reason, financing from the state budget, as a central institution, is required for infrastructure development, including construction of new railroad lines, alternative and longer tracks, development of major stations, introduction of electric traction and industries involved in restoration and development of rolling stock repair facilities.

Employment

Employment situation on railroads is still evaluated as unsatisfactory, as it does not meet the requirements for fulfilling transportation and repair tasks and maintenance of railroad infrastructure. Despite intensive recruitment and training efforts, labor shortages continue in all services and are most acute in basic operation crews. The situation was particularly bad in 1981-82 due to reduction of work week and decline of employment, mainly because of earlier retirement on pensions.

Underemployment, as compared with the plan, constitutes some 32,000 openings, or 9 percent of total employment. Shortages are the greatest in train expedition teams, including traffic controllers, switchmen and couplers, and among switching and traction engineers. Railroads also experienced shortages of workers in track repair and maintenance and freight car repairs.

In order to increase the influx of workers to railroads, there are plans to develop vocational training in the system of the Ministry of

Transportation, conducting it in closer cooperation with the industry. On-the-job training and crash courses will be developed. Efforts will be made to improve the financial situation of the PKP employees (new wages and bonus systems), as well as improved conditions of work on the railroads as a result of appropriate technical and organization measures.

Efforts will be made for transfer of employees from other industries with excess of manpower and for stepping up voluntary recruitment activities.

The guidelines set forth in the program have been approved by the Government Presidium, and the basic problems have been resolved by the decision no. 43/82 of the Presidium of 6 December 1982, concerning efficient operation of railroad transport in 1983-85. It has been decided that short- and long-term improvement of conditions on the railroads will be further specified in the three-year plan for 1983-85. The ministers of the industries concerned have been obligated to ensure priority treatment of railroad requests for raw materials and spare components.

The portion of the plan to be implemented in 1983 is covered by current operation programs.

9922
CSO: 2600/639

ECONOMIC REFORM IMPLEMENTATION HIGHLIGHTED BY ENTERPRISE EXECUTIVES

Warsaw TRYBUNA LUDU in Polish 26-27 Feb 83 pp 3, 6

[Article by Wanda Zagawa, Ryszard Bilski, Marek Jefremienko and Jan Kraszewski]

[Text] For over a year, some TRYBUNA LUDU reporters have been making regular visits to five enterprises to check on the progress in the introduction of economic reform. We have been publishing their observations in a series called "The Tribune Covers the Reform." Readers of the series have had the opportunity to familiarize themselves with the problems, concerns and accomplishments of the following: the Myszkowiec Enamelware Factory [MFNE], the Radom RADOSKOR Shoe Factory, the URODA Cosmetics Factory in Warsaw, the AGROMET Farm Machinery Factory in Strzelce Opolskie and the UNIONTEX Defenders of the Peace Cotton Plant in Lodz.

Representatives of these five firms attended a meeting in our editorial offices at the end of January 1983 to share their experiences in putting into effect the reform principles of management. We proposed that those attending consider the following questions: What do you think has been the most satisfactory result of the economic reform? What troubles you and gives rise to doubts?

Andrzej Wroblewski from the Office of the Government Plenipotentiary for Economic Reform Affairs participated in the meeting. Here is an unofficial and necessarily summarized account of the discussion:

Profits, Losses and Subsidies

Edward Furman, head director of MFNE: "We take pride in the fact that after years of uneconomical management, in 1982 we began to manage with some measure of correctness, although many improvements are still needed. Ninety-five percent of our production is for the domestic market: enamelware, laundry equipment, galvanized and aluminum products and galvanized buckets, some of which we took a loss on.

"The prices for our products were fixed, and costs were rising, as is known. A plant workforce and management feel very bad when they are reminded at every turn that they are subsidized. It was not our desire to conduct economic

activity that was subsidized by the state. Sometimes we had to scramble for subsidies or lay claim to them, which was not pleasant either. When the subsidies did not arrive on time, the bank increased the interest payment."

Waldemar Poltorak, economic director of RADOSKOR: "The subsidy system is also criticized at RADOSKOR. Do shoes for young people have to be subsidized? I understand the purpose of subsidies, but not in such a form. Why should we subsidize shoes that are worn by those with higher incomes as well? Adults also wear youth shoes, which cost only 400 zlotys rather than 800 zlotys because of the subsidy, and the subsidy is not supposed to cover adult shoes. It does not cover them, but these people take advantage of it. Would it not make more sense to give the needy more benefits and to sell the shoes at the regular price?"

Edward Furman, MFNE: "We closed 1981 with a loss of 350 million zlotys and with a production value of 1.1 billion zlotys. It was an enormous deficit. As yet, we do not have the 1982 balance, but we expect a profit of approximately 300 million zlotys. We sold most of our products at contract prices. Of this 300 million zlotys, very little will stay in the plant. That is the way the tax system is. But at least we have the moral satisfaction that we brought the state a profit and not a loss."

Every Zloty Piece

Leszek Lewandowski, deputy director for production affairs at the Lodz UNIONTEX Defenders of Peace Cotton Plant: "In answer to the question about the source of our greatest satisfaction, I would say that it was due above all to the experimental wage incentive system (wages rose by 16.1 percent) that we did not pay a single zloty piece to the FAZ [Vocational Activization Fund], for this was not money that was wasted, but was covered in concrete production.

"We are paying for the production of specific amounts of yarn and fabric, with an appropriate remuneration for quality. During the second stage, we made the wages of foremen and employees of the auxiliary services contingent upon the results of the work of the spinners and weavers. This caused a marked increase of interest in the final results of the plant's production."

Franciszek Prochownik, deputy director of the AGROMET Plant in Strzelce Opolskie: "We have completed the first stage of the wage reform. Now we wish to move on to the second stage. We have introduced an incentive in the form of a departmental fund that is most important for non-piecework employees. For piecework employees, we also introduced a bonus. This matter was predetermined, and essentially the employee was already aware of how much he could earn. At present, we are working on introducing zloty piecework."

L. Lewandowski, UNIONTEX: "A factory cannot be a place of shelter, but unfortunately that is just what it often is for lazy people and for workers who do their jobs poorly. Before we introduced the new wage system, when the factory whistle would blow, the cloakroom was still full, and some people were still hurrying to work. Today many workers begin work a half-hour early or stay late. These are the facts, and the result of tying in work with wages.

They tell us that the system is working. That is why I would like to emphasize once again that every zloty piece that we paid out last year was covered in production."

Alfred Banach, economic director of the URODA Cosmetics Factory in Warsaw: "In structuring the market and retail prices we wanted to reconcile the interests of the factory and society. Since 3 January 1982, we have been selling our products at new prices that have increased on the average of 33 percent.

"We opened an awards fund for productive work and efficient use of time. While it is not a large sum (about 500 zlotys per month), it has produced results for us. The 3-day weekends that were causing havoc with the production process have dropped off considerably. Thanks to the introduction of this fund, whitecollar employment declined by about 11 percent in 1982 and bluecollar employment dropped by about 7 percent. We believe that this amount should be increased. Bonuses would act as a greater incentive here."

How Should Workers Be Paid?

A. Wroblewski: "We still do not have any ready answers in terms of incentives. Enterprises must find these answers themselves by trial and error.

"Relatively the most progressive solutions concern workers directly involved in production. Essentially this means restoring simple piecework methods. But we do not know how to have an impact upon the rest of the mass of workers.

"Recently I examined some sociological studies that show that most of those responding to a survey understood that social justice meant that one would get equal pay for equivalent work physically. For what and how much is an engineer paid who stands at a drawing board and does not really get tired?

Edward Furman, MFNE: "One hears on the mass media that at the end of last year wages were too high. Directors are criticized for not looking at things in perspective, for wanting to ruin enterprises and for only handing out money to people. But it was the government that created a salvo for some enterprises in the form of Resolution No 186.

"In 1981, the average wage at MFNE was less than 6,900 zlotys. On the basis of Resolution No 135, we raised this wage by 1,200 zlotys to exactly 8,137 zlotys. Percentagewise this is very high, but it is still less than the average wage in Poland. Besides, we must now pay a surcharge for the FAZ in the amount of 68 million zlotys. One can say: Did you do the right thing in deciding on a wage increase and in leaving almost nothing for development? We do not need new machinery today, since the machinery we have is not even used fully. On the other hand, we do have need of the stabilization of our people, to work and to increase productivity.

"In 1982, the increase in our labor productivity was over 8 percent and the decline in our employment was nearly 20 percent. I believe that these additional monies were well spent."

The Stabilization of Conditions

Waldemar Poltorak of RADOSKOR: "What troubles do we have in work? I am not convinced that a government plenipotentiary's office is indispensable. It is our impression that it belies the autonomy of enterprises. Let me give an example: we had a plan ready for 1983, and then one day the plenipotentiary came by and... we had to change the plan. RADOSKOR will have to share raw materials with other manufacturers. Meanwhile, counting on the anticipated and preliminarily contracted-for deliveries from our suppliers, we had worked out new footwear models and spent money on new tools.

"Retroactively binding regulations still get the jump on us. For example, the government order on subsidies that had binding force from 1 January was delayed in reaching us. How are we to honor it, since the shoes were already in the stores and some had already been sold?

"We have 30 factory outlets. Contrary to some opinions and advice, not only do we believe that these stores should not be closed, but we think that new ones should be opened. Since we have our own stores, our transport costs are lower and we have a better understanding of our clientele's needs: styles and sizes. We intend to lower our margin and our shoe prices. Women's short fur boots will be about 300 or 400 zlotys cheaper."

A. Banach, URODA: "The success of the reform rests largely upon the stability of economic solutions. Stable conditions and clear perspectives are important for every manufacturer, but especially for us. Please take into account that processing costs represent only 20 percent of total costs. A slight swing can take away the few pennies of profits that we make and cause a loss.

"My conclusion: the present principles of financing should be binding for not less than 2 to 3 years."

E. Furman, MFNE: "The 1983 principles must be made clear. We still do not know what sort of break we will get in our FAZ liabilities for a production increase--whether it will be 0.5 or 0.8--or who will be awarded these preferences. By what criteria will the ministry be guided in awarding these factors? These are things we should already know about in the enterprise."

Franciszek Prochownik, AGROMET: "What problems do we have? Our biggest problem is an unfortunate investment that was bestowed upon us in conjunction with the purchase of a license in the 1970's. We must repay the investment credit, the very high sum of over 100 million zlotys. The danger this year is that not only will we not be able to increase wages but also that we will not have the funds to replace machinery.

"I would like to recommend that former investments be included in costs, so that the credit may be deducted from profits before earnings taxes are calculated. It is an urgent matter and for us it is the question: to be or not to be.

Self-government

Jozef Maras, chairman of the AGROMET Employee's Council: "The self-government in our plant was elected democratically. We have a statute based on the law on the self-government and the enterprise and we have already come face to face with the limitations that emanate from the binding regulations on the operation of the workers' self-government and concretely, on the day-to-day operation of the employee's council. To illustrate this point I have here an issue of TRYBUNA LUDU, in which there is an interview with the chairman of the Sejm Commission for Employee Self-government Affairs entitled: 'The Third "S" Is Becoming More and More Universal.' In one statement Deputy Barecki says that under the present sociopolitical conditions, one cannot consider the success of the reform without the participation of the social element. This is his concluding statement, but elsewhere in his text he refutes the participation of this element. The first limitation introduced is the method of appointing and dismissing the director. In the law on the enterprise, this director is one of the organs of the enterprise. There is the self-government, the employee's council and the director. In practice, the system of interdependence between the self-government and the director in the enterprise is broken down. Thus, it is difficult to speak of self-government. It is necessary to add that the director must be selected in competition."

Who Decides?

A. Wroblewski: "Allow me to interrupt you. The practice of self-government is growing and there are already examples that the courts are refusing to register a director that is not appointed competitively."

J. Maras: "But a desideratum on this issue has just reached the Sejm, and in practice various things are happening. One court remarked on this and another did not. It was said that this principle would be binding for 835 enterprises. Now they are talking about 1,400 enterprises. Do we really have to have such a large safety valve?

"The next issue is the possibility of suspending the activity of the self-government (in my opinion it should be an employee's council) for a period of not more than 6 months if its activity is incompatible with the interests of society. We repeat over and over that wording should be clear and unequivocal. Each of us has a notion of what the interest of society is, but in a legal regulation this matter is supposed to be unequivocal. Another thing: who is authorized to make decisions? Is the founding organ, i.e., the minister supposed to decide whether we as a self-government are acting in the interests of society? If employee self-governments are under the direct care of the Sejm, then the Sejm or the court should decide.

"Then there is the issue of objections. We discussed this subject and concluded that practically speaking there are only a few cases in which we may make objections. We can quarrel with the director, but the regulation according to which the appeal of a director or employee council regarding a founding organ decision does not stop the execution of the decision is of a universal nature. The issue drags on. It should also be remembered that we are working under an obligatory system and thus we may presume that some objections may be taken as not in the interest of society."

An "Honest" Statute

"On the issue of associations--we discussed this issue at one of the meetings of the employee's council. We disputed whether we should pay in 10 million zlotys without having anything on this account as yet."

A. Wroblewski: "How much did you say?"

J. Maras: "Ten million. There are to be 23 enterprises in our association. That is 230 million zlotys, and we found out that the actual costs of running the association are much less. The discussion was very heated. If our plant were not obliged to belong to the association, then certainly there would be no discussion either of belonging or of paying in the money. Then there is the issue of the association statute. That job was tossed off rather quickly and some sort of statute was drawn up, but it gives rise to many doubts. In many cases people are quarreling over the statute on the enterprise self-government. There are no specific principles of operation. In the statute on the association, the council has the power to interfere too much in the work of the enterprise. I believe that the Sejm Commission for Self-government Affairs must verify or impose a draft statute, on whose basis the association council should prepare an honest statute. This statute must not contradict the statutes of self-governments in plants.

Ryszard Bialy, chairman of the Employee's Council at MFNE: "Why does the minister evaluate the self-government? That is not right. Regarding the production plan, we are discussing it now in the departments. At the same time it must be taken into consideration that materials supply is out of the hands of the self-government. We clear materials with the director and the management. The full efficiency of supply services must be guaranteed. The production plan for this year is developed on the basis of contracts made with coproducers by the trade director or the head director.

"Tax relief for export is in effect on for exports to the Soviet Union and the first payments area, but not to the area where we sold washers. What will the position of the council be for next year? It will be that we should stop sending washers to that area. It also rankles us that we have the production capacity, but we cannot use it because we are lacking connecting cords and motors."

A. Wroblewski: "With regard to the tightness of funds, the principle has been adopted of foreign-exchange credits only for export to the second payments area [capitalist countries], especially since we are most interested in exporting to this area from the viewpoint of the economic interests of our balance of payments, for this is where we have the greatest debts.

"The implementation of the principle of the so-called auctioning for the purchase of foreign-exchange for enterprises that do not export to the second payments area is in the preparation stage."

The reflections of the reporters who worked on the preceding article and took part in the preceding discussion may be expressed in the following points:

--Discussants are satisfied with some reform experiences. They did not hide the fact, however, that there have been too few positive experiences, especially by comparison with expectations, to allow them to recognize that the implementation of the reform is proceeding exactly as it should.

--Despite this, enterprises have not yielded to the more and more widespread practice of blaming the reform for the failure of economic policy. Their criticism is concrete and constructive in nature.

--Enterprises are disturbed by the repetition of old mistakes (a poorly functioning system of subsidies) by the economic administration and the sluggish elimination of barriers to autonomy.

--In demanding the indispensable revisions in the economic system, enterprises are also calling for these changes to strengthen the renewal process and to deepen the principle: the way you work is the way you get paid. That is why all changes should be made using the parameters and economic instruments that are appropriate to this particular reform.

--Improvement in the reform may not lead to too sudden, radical changes in the conditions of management. The new streamlined principles, generally speaking, should reward those that are more efficient and more diligent.

--The enterprises are awaiting greater stability to enable them to think and act in a better perspective and to undertake the indispensable modernization and investment activities.

--The reform is endangered by voluntaristic and unprincipled attempts to direct enterprises with the use of compromising command instruments. This is being done especially by the plenipotentaries for the affairs of separate production systems.

As the discussion ended, it was resolved jointly that meetings of this type ought to be continued, as will our paper's coverage campaign of them.

8536
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PROPOSED NEW TAXES TO CURB EXCESS DEMAND DISCUSSED

Warsaw TRYBUNA LUDU in Polish 29 Mar 83 pp 1, 2

[Article by Krzysztof Krauss: "Against Inflation; Different Situations, Different Costs"]

> [Text] Although the government-sponsored program against inflation focuses primarily on the production increase and reduction of its costs, some measures restraining demand are unavoidable. The comparison of the figures, characterizing the expected growth in money income of the population by the draft plan for 1983-85 (43 percent), as well as the growth in the delivery of goods and services to the market in comparable prices (24 percent) indicates that, if we have to be closer to the market balance at the end of the three-year plan, it will be necessary to cut back on cash-flow in the market.

A summary of these facts regarding the situation on the market seems to be essential to the understanding of the direction of the actions provided by the governmental program against inflation. The program expects the appropriate state institutions to acquire the full picture of the material situation of people earning relatively high income. "In order to create bases for full and just taxation of high incomes--as the program states--a full record of the incomes will be introduced till the end of 1984." The record will emcompass incomes of the nonagricultural and privately-owned economy, high-commodity specialized agricultural farms, and the emoluments of the socialized economy workers who earn the highest incomes.

To begin with, there must be suppression of all those cases where people who are supposed to pay taxes do not fulfill their commitment. This concerns also those who run registered private-economy activities but hide from the authorities its genuine scope and nature, and those who do not register this activity at all.

It will be--we read in the program--tight financial control of private economic activity, and particularly illegal activity with respect to the binding tax rules. The penal-financial sanctions will be tightened also. Thus, in the current year new tax rules will be introduced in relation to craft, private trade and other units of the nonagricultural and privately owned economy.

The new tax rules ensure a sense of stability for honestly working craftsmen, but tighten existing tax rules for those representatives of private initiative who, by their activity, transgress the binding tax rules and obtain windfall gains. The agricultural tax will be modified also.

The so-called compensatory system needs to be created almost from scratch. It imposes taxes upon those employed "full time," either in the socialized economy or outside it, earning relatively high wages. Formally, the compensatory system is now in use, but in fact it does not fulfill its functions or it does so inefficiently. The governmental program provides for the universality of this tax and its imposition on all incomes.

From the propositions embodied in the governmental program, it results that only those whose joint incomes are less than 1.5 percent of average high wages in the socialized economy, will be exempted from the compensatory system. All those who do not fall into this category, would have to pay the compensatory tax, but a differentiated one. A small tax is established for joint incomes that to a limited degree exceed the "income bracket," which sets in motion this form of taxation. A higher and progressive tax would be applied in the cases of the joint incomes exceeding several times the average wages in the socialized economy. The new tax would be a tax levied upon people who have worked abroad for a long time and reaped important material benefits out of the differences in currencies or as a result of the exchange currency policy applied to these incomes.

The governmental program that has been submitted for discussion provides for an increase in deposits for housing cooperatives of up to 15 percent of construction costs in tenant cooperatives and of 30 percent in proprietary cooperatives. This increase does not rule out an eventual subsidized fund for the members of the housing cooperatives raised by their work institutions. In addition, it is planned to initiate a review of collective work contracts and related trade membership in order eventually to restrict or suspend temporarily (these findings will be presented by the government to the Sejm and the Social Economic Council), those trade privileges which are flagrant in comparison to related professional categories; raise the interest of banking credits that are granted to the public and to the privately-owned economy to a level exceeding the interest rate of the savings. An exception would be only credits for the housing construction where the interest rate would be lower; introduce or raise taxes from so-called higher forms of consumption: large recreation allotments, some summer houses geared for yearlong use, foreign touristic trips, hunting weapons and to raise the cost of automobiles with engine capacity over 1.5l as well as color TV sets.

The prevailing crisis still entails costs that bear upon all society. There is a difference, however, in the material situation of the respective groups in the population, as well as among individuals. There is no reason why those costs should not be "equally" borne by all, though equal does not always mean just.

12328
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RAIL FREIGHT HANDLING BOTTLENECKS REPORTED

Warsaw ZYCIE WARSZAWY in Polish 12-13 Mar 83 pp 1, 2

[Article by Ch.: "The Better the Economic Situation, the More Difficult It Is for Polish State Railroads: Continuing Lag in Transportation; Smaller Coal Heaps in Mines; Cement Bottleneck Is Getting Worse"]

> [Text] After a good January, and a much worse February, railroad transport began to function fairly well at the beginning of March; however, the better the economic situation, the more difficult it is to move carloads which are accumulating. The transport plan for the first decade of March was fulfilled 98 percent, with the understanding that transports of the principal freight, which is coal, increased 1.3 percent over the plan's targets.

At present, coal constitutes about 40 percent of the total of goods which are transported by Polish State Railroads [PKP]. Railroad employees assert that they are doing their best to assure its prompt shipment; however, miners would like to load still more coal on workdays. In practice, as early as last year, despite enormous efforts, it was not possible to avoid periodic problems with shipments of coal, whose supplies at the mines exceeded 2.4 million tons by the end of the year. One of the principal causes of this situation was the overfilling of the coal depots of major consignees, namely, in ports, in power plants, in industry (finally something was in abundant supply) and, as a consequence, the breakdown of the most effective system of haulage in the form of shuttle and routed transport by trainloads directly from the mines to consignees. This type of transport does not require car switching on stations along the route and, as a result, it assures better utilization of cars and locomotives.

Only in January it became possible to reduce coal supplies at the mines by 1 million tons; this was due mainly to large-scale loading of coal cars also on Sundays. As a result, coal loadings in January exceeded the plan's targets by 5.1 percent; the situation was worse in February, because only 99 percent of the monthly transport quota was fulfilled, which this time was caused by long delays in returns of cars from consignees. In the first

decade of March again there was a surplus in relation to operational plans for coal transport.

Coal was priority, although other types of freight must also be handled; and, on account of insufficient transport capacity, somebody always has to suffer. This time this [non-priority] type of freight is, e.g., cement; delays are considerable, because there is a shortage of boxcars for transport of cement in bags. There is also a shortage of railroad cars for bulk cement transport; these cars are owned by the cement industry but are not utilized very effectively.

We have used these two examples to present a difficult situation; nevertheless, the causes of transport difficulties are the same everywhere. We must realize that the railroads receive very little support from suppliers of rolling stock. Last year, the railroads received only 2027 new freight cars instead of the planned 3376. On the other hand, over 83000 antiquated cars had to be scrapped. In addition, there was an increase in the number of mechanically inoperative cars. It is true, car repair plants repaired more cars this year than during last year, but this was not enough to meet actual needs. Thus, in practice (despite the inclusion of transport in an operative program), the priority turned out to be insufficient. Proof of this is the implementation of only 90 percent of the planned replacement of railroad ties, due to insufficient supply of materials. For example, the railroads received only 77 percent of the anticipated quantity of rails.

During the current year, the railroads are expected to transport 405 million tons of freight; this is the quantity anticipated by the operational program of railroad and highway transportation. The fact that public transportation was included in programs of this type is proof of the rank of this sector [of the economy] and of the urgency of maintaining it in such a condition as to insure efficient operation of our enonomy. This year, the railroads are expected to increase their freight volume by 2.5 percent, while State Automotive Transport [PKS] will reduce its freight volume by over 4 percent. The slight increase of transport capacity, assumed in the program, may prove insufficient if the trend of further increase in industrial production becomes established.

Should this happen, it would be necessary, due to the problems of the railroads, to activate the inoperative potential of automotive transport of individual ministries, because this kind of transport has been characterized by steadily decreasing freight volume. Perhaps a report on the condition of automotive transport in our country will provide a credible answer to the question what is the real transport capacity of this sector after excluding some trucks because of lack of tires, reduction of fuel supply, and a shortage of batteries and spare parts.

In turn, however, we are beginning to see the confirmation of the views that the economic reform in the area of transportation is beginning to have its impact by reducing transport needs and eliminating not sufficiently cost-effective long-distance hauls. Generally, however, the lag in transportation

continues to be seen; funds are very limited, and the railroads are short of 30,000 employees. If tendencies to properly utilize manpower and to provide a supply of labor to precisely such areas as transportation do not become manifest in our entire economy, then given the serious limitations of our technological base, it is difficult to anticipate efficient movement of freight.

Because the program for the development of railroad transportation during the three-year period, bold as it seems under conditions of an economic crisis, will bring results only after basic tasks have been implemented and indispensable materials and technological means have been secured; meanwhile, it is necessary to move freight right now.

9577
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STATUS PLANS OF MERCHANT MARINE REVIEWED

Belgrade TRANSPORT in Serbo-Croatian No 2, Feb 83 pp 17-22

[Article by Ivo Markovic]

[Excerpts] The situation in overseas markets for the merchant marine is pronouncedly unfavorable and no signs of improvement can be seen for the foreseeable future. The sharp decline in the freight index began as soon as early 1981, and rapidly accelerated in the second half of 1981. It reached its lowest point in February 1982. After that there was an improvement until May 1982, but the worst trend came by August 1982, which matched the crisis year of 1977. The downward trend for freight receipts continues, even though the lowest possible level from the point of view of covering costs has already been reached. Special emphasis should be placed on the extremely sharp decline in the second half of 1982 in comparison with the first half of the same year, which in any case already showed a low level of freight shipping receipts. That decrease amounted to 30 percent in time/charters, 13 percent in "tramp steamer" shipments, continuation of the low level of tanker receipts that was 25 percent less than that of January 1981, and failure to maintain the 10-15 percent customary index growth on line receipts that has reflected inflation and devaluation in world shipping tariffs. As a result of the latter relation to world inflation, line receipts fell by an average of 1 percent.

Trends on maritime markets continue downward, so that on the basis of authoritative specialized literature we cannot expect any sort of improvement for at least 8-10 months. Even then, if there should be a moderate increase in shipping receipts, it would not have a major effect on the negative average results in 1983 as a whole. Thus in terms of value and dinar receipts we can expect results on the level of the average results for 1982. In the same way, world markets have seen reduced shipments of goods by sea (other than grain and coal), so according to that measure the quantity of goods shipped will be less, and this is even more the case since due to high expenses in the structure of line shipments, many line shippers have reoriented their cargoes to tramper shipment, while medium-size tankers are being used for grain shipments. Because of these trends, we can foresee a continuing decline in shipments and income in 1983. In that regard we should also expect some increase in operating costs.

The basic problems that have accompanied maritime shipping, and nearly in the same manner river shipping, follow:

A pronounced foreign exchange deficit in liquidity, even discounting for operating expenses, exacerbated by required contributions for mutual needs (i.e., of the federation, republic and for fuel);

In maritime transport, special foreign exchange must be set aside for fuel, while at the same time ships must independently acquire their needs on foreign markets; and bottlenecks in the exploitation of ships resulting from the failure to satisfy foreign exchange obligations or immobilization of the shipping fleet due to shortages in the most essential spare parts.

The accumulative capacity will decrease significantly because of unpaid-for stimulation in exports of services, because the Regulation on Dinars of Foreign Exchange Origin was not passed in 1982, i.e., the foreign exchange market did not function, while the foreign exchange compensation from domestic users of services on foreign routes was not provided for until the end of 1982. The new Law on Foreign Exchange Operations and Credit Relations with Foreign Countries, as well as other temporary measures do, however, establish favorable bases for more effective functioning of shipping tariffs on foreign routes when they are used for exports and imports by domestic users.

State of Merchant Marine Capacities and Age Structure for the Yugoslav Fleet
Organizations of associated labor of maritime shipping possessed the following ship capacities at the indicated dates:

Date	No of Ships	BRT-1,000 Tons	DWT-1,000 Tons
30 Sep 1982	332	2,745	3,826
31 Dec 1982	332	2,458	3,813
30 Sep 1981	338	2,506	3,875

These data show that from 30 Sep 1981 to 31 Dec 1982 the number of ships decreased by 2 percent instead of increasing by 3-5 percent, while throughout the world, despite the economic crisis, many developed and maritime countries saw increases in their fleets ranging from 2, 3, 4, and even up to 6 percent annually.

In all of that, however, the worst sore point of all is that the age structure of the maritime fleet of Yugoslavia is exceptionally bad, as seen in the following summary:

These data show that in the period 1976-1981 the overall age structure of the fleet worsened by 457,000 tons, and that the number of ships over 15 years old grew constantly, particularly for those ships over 20 years old, which number grew by 40 percent in 5 years.

(1) BRT u 000

(2) Godina	(3) do 15 godina		(4) od 16—20 godina		(5) preko 20 godina		(6) Ukupno	
	(7) broj	(8) BRT	(9) broj	(10) BRT	(11) broj	(12) BRT	(13) broj	(14) BRT
1976.	158	1.423	83	425	81	154	322	2.002
1977.	164	1.626	66	352	102	249	332	2.227
1978.	159	1.662	64	372	114	303	337	2.337
1979.	164	1.725	64	324	111	340	339	2.389
1980.	160	1.740	60	303	119	417	339	2.460
1981.	163	1.789	56	288	113	382	332	2.459

Key:
1. BRT in 1,000 tons
2. Year
3. Up to 15 years
4. From 16-20 years
5. Over 20 years
6. Total
7. Number
8. BRT
9. Number
10. BRT
11. Number
12. BRT
13. Number
14. BRT

Yet even with this state, it should be pointed out that right up until the end of 1981, the foreign exchange income grew constantly, and the period 1976-1981, the total foreign exchange income rose by 122 percent, while ship capacities grew by only 24.5 percent. The question arises as to whether the country's foreign exchange income would have been even greater, if the merchant marine had been developed at least to the level established by the plan. The answer is that the foreign exchange income could have been greater by at least 20 percent annually (concerning foreign exchange income, see the data under that category).

Yugoslav Maritime Foreign Trade

The share of maritime shipping in Yugoslav foreign trade can be seen from the following summary:

(1) — u 000 tona —

(2) Godina	(3) Ukupna razmjena	(4) Indeks	(5) od toga morem	(6) % udjela morem	(7) Indeks prijev. morem
1977.	38.990	100	16.030	41,1	100
1978.	40.070	102,7	16.871	42,1	105,2
1979.	45.752	117,3	19.671	43,0	122,7
1980.	46.746	119,9	22.283	47,7	139,0
1981.	42.158	108,1	22.647	53,7	141,3
I—IX 1982.	—	—	22.581	—	—

Key:
1. 1,000 tons
2. Year
3. Total Trade
4. Index
5. Amount by sea
6. Percentage by sea
7. Index of maritime share

The preceding data show that maritime shipments stagnated de-facto at the same level beginning in 1980, which is a consequence of the world (and maritime) recession, while at the same time the percentage share of maritime transport compared to land shipping has been growing ever since 1977, when it amounted to 41.1 percent, to reach 53.7 percent in 1981.

Exports and Imports and the Yugoslav Fleet's Share, 1,000 tons

Izvoz i uvoz i učešće naše flote

— u 000 tona —

(1) Godina	(2) Ukupno	(3) Domaći brod	(4) Strani brod	(5) Ukupno	(6) Domaći brod	(7) Strani brod
	(8) IZVOZ			(9) UVOZ		
1977.	3.518	1.182	2.336	12.512	3.213	9.299
1978.	3.278	1.286	1.992	13.593	3.837	9.756
1979.	3.262	1.064	2.198	16.409	4.362	12.047
1980.	3.482	1.124	2.358	18.801	5.319	13.482
1981.	3.383	1.240	2.143	19.264	6.821	12.443
I—IX 1982.	2.935	1.054	1.881	13.643	4.948	9.695

Key:

1. Year
2. Total
3. Domestic ships
4. Foreign ships
5. Total
6. Domestic ships
7. Foreign ships
8. Exports
9. Imports

According to actual volume of maritime shipping, the share of domestic vessels was:

(1) — u % —	1977.	1978.	1979.	1980.	1981.	I—IX 1982.
(2) Izvozu	33,6	39,2	32,6	32,3	36,7	35,9
(3) Uvozu	25,7	28,2	26,6	28,3	35,4	36,3

Key:

1. In percent
2. In exports
3. In imports

The above figures show a certain increase in shipments by domestic shippers in 1982 and 1981 compared to previous years, because of the limited possibilities of paying foreign shippers in foreign exchange currency.

Foreign Exchange Income and Expenditures by the Yugoslav Merchant Marine
In 1,000,000 dollars, Index 1980 = 100

— u mln dolara —
Index 1980 = 100

(1) Opis	1979.	1980.	1981.	I—IX 82.	1979.	1981.
(2) Devizni priliv bruto	675	947	1.011	644	71,2	106,7
(3) Devizni odliv	393	548	607	424	71,7	110,7
(4) Neto devizni priliv	281	399	404	218	70,5	101,3
(5) Stopa dev. troš. u %	58,3	57,9	60,0	—	100,7	103,6
(6) Stopa neto dev. priliva u %	41,7	42,1	40,0	—	99,0	95,0

Key:
1. Description
2. Gross foreign exchange income
3. Foreign exchange expenditures
4. Net foreign exchange income
5. Percentage rate of foreign exchange expenditures
6. Percent net foreign exchange income rate

The above data show that the foreign exchange income from maritime shipping was constantly rising both in the years indicated and in preceding years. For the first time in many years, however, in 1982 the foreign exchange income did not rise by the 16 percent called for in the plan, but actually fell by about 15 percent. The reasons for that tendency were cited previously. According to that, the suitable measures should be taken (and in truth are under way) that will assure that the 1982 situation will not be repeated.

Otherwise, the foreign exchange income of the Yugoslav merchant marine for the preceding 3 years (1976-1978) can be seen from the following figures:

(1) — u mln dolara —

(2) O p i s	1976.	1977.	1978.
(3) Devizni priliv	449,0	482,7	554,7
(4) Devizni odliv	250,0	285,1	335,3
(5) Neto devizni priliv	199,0	198,5	219,4
(6) Stopa deviznih troškova u %	55,7	59,1	60,4
(7) Stopa deviznog priliva u %	44,3	40,9	39,6

Key:
1. In 1,000,000 dollars
2. Description
3. Foreign exchange income
4. Foreign exchange expenditures
5. Net foreign exchange income
6. Percent rate of foreign exchange expenditures
7. Percent foreign exchange income rate

Merchant Marine Development Plan for the Period 1981-1985

The self-management agreement on the development of the Yugoslav merchant marine for 1981-1985 establishes and coordinates the amount of vessels to be built in domestic shipyards and acquired from abroad, as well as capital sources, credit conditions and repayment terms, etc. The organizations of associated labor of the Croatian merchant marine have also coordinated and registered their development program for the 1981-1985 period.

For the major part of the development program that relates to ship construction in domestic shipyards, the conditions for construction are regulated by a separate self-management administrative agreement signed by the organizations of associated labor for shipping and shipbuilding, the Fund for Crediting Marketing of Domestic Equipment and Ships Within the Country, commercial banks and the Council, Socialist Republic of Croatia (for the Croatian program).

Labor organizations of Yugoslav merchant shipping for the 1981-1985 intermediate plan intend to build and acquire 70 new vessels with a total 1,145,300 DWT, and to acquire 86 vessels from abroad with a total capacity of 904,000 DWT. Domestic shipyards are supposed to construct 55 units with 944,200 DWT capacity, which means 31 percent of their full capacity will be utilized. (An analysis of the plant by organizations of associated labor can be seen in tabular form at the end of this text.)

According to the self-management administrative agreement signed at the end of last year, 13 labor organizations for maritime shipping in Croatia have been alloted a total of 45 newly constructed vessels with a total capacity of 683,200 tons, which are to be ordered at domestic shipyards, and 5 new vessels totalling 33,500 DWT that are to be imported. In addition to those, shippers would import from abroad 66 used vessels and technical equipment with 519,600 ton of capacity. The value of these investments would total 29.8 billion dinars, which is 24 percent more than anticipated in the Croatian Social Plan. In their self-management administrative agreement on coordinating relations in social manufacturing, the shipbuilders estimate that according to presently known data on the possibilities and conditions for marketing and building ships, the value of deliveries for the domestic fleet by 1985 would total at the most 20 billion dinars. That means that it would in reality amount to about 25 used units, of which 15 ships have already been contracted.

If we hold ourselves to an exact accounting of the foreign exchange (net) income of 2,339 dollars with 45 ships and for 15 years, then the annual net foreign exchange income on this basis alone would be 157 million dollars.

According to current estimates, and because of the lack of domestic credit potential as well as resources for handling the difference between domestic and average world prices, of these planned 45 vessels it will actually be possible to build only half of them (22-23). In an analogous manner, a net foreign exchange income of 2,359 million dollars is anticipated, or 157 million dollars annually will be halved and the totals will be 1,180 million dollars or 78.5 million dollars annually.

Planned Acquisition of Vessels in the 1981-1985 Period for the Yugoslav Merchant Marine

	(1) Nabavka novih brodova u zemlji		(2) iz uvoza		(3) Nabavka plov. brodova iz uvoza	
	(4) broj	(5) DWT	(6) broj	(7) DWT	(8) broj	(9) DWT
(10) **SR HRVATSKA**	35	683.200	4	33.500	52	519.600
(11) — Atlantska	2	102.000	—	—	5	74.000
(12) — Dalmatinska	—	—	—	—	8	29.200
— Istarska	2	31.400	—	—	4	62.800
(13) — Jadrolinija	2	—	—	—	4	—
(14) — Jadroslobodna	6	106.000	—	—	4	45.000
(15) — Jugolinija	12	224.000	2	28.000	6	26.900
(16) — Jugotanker	5	157.400	2	5.500	3	177.500
(17) — Lošinjska	3	20.500	—	—	7	33.000
(18) — Mediteranska	1	9.400	—	—	4	18.700
(19) — Obalna	1	2.500	—	—	3	13.500
(20) — Slobodna	1	30.000	—	—	4	39.000
(21) **SR CRNA GORA**	4	130.000	8	138.600	9	139.000
(22) (23) — Jugooceanija	3	100.000	5	78.600	4	64.000
(24) — Prekooceanska	1	30.000	3	60.000	5	75.000
(25) **SR SRBIJA**	3	104.000	2	29.000	5	108.300
(26) — Beogradplov	3	104.000	2	29.000	5	108.300
(27) **SR SLOVENIJA**	3	27.000	—	—	6	137.500
(28) — Spošna plovba	3	27.000	—	—	6	137.500
(29) Ukupno:	45	944.200	14	201.100	72	904.400
(30) Ostalo:						
(31) — Brodospas	7	—	1	—	13	—
(32) — Luka Rijeka	3	—	—	—	1	—
(33) UKUPNO:	55	—	15	—	86	—

Key:

1. Acquisition of New Ships Domestically
2. From imports
3. Acquisition of Used Ships Abroad
4. Number
5. DWT
6. Number
7. DWT
8. Number
9. DWT
10. Croatia
11. Atlantska (Atlantic Line)
12. Dalmatinski (Dalmatian Line)
13. Istarska (Istrian Line)
14. Jadrolinija (Adriatic Line)
15. Jadroslobodna (Adriatic Free Line)
16. Jugolinija (Yugoslav Line)
17. Jugotanker (Yugoslav Tanker Line)
18. Losinjska (Losinj Line)
19. Mediteranska (Mediterranean Line)

20. Obalna (Coastal Line)
21. Slobodna (Free Line)
22. Montenegro
23. Jugoceanija (Yugoslav Ocean Line)
24. Prekooceanska (Transoceanic Line)
25. Serbia
26. Beogradplov (Belgrade Shipping)
27. Slovenia
28. Splosna plovidba (General Shipping)
29. Total
30. Other
31. Coast guard rescue vessels
32. Rijeka port authority vessels
33. TOTAL

a. Imports of Ships on the Basis of Mortgage Credit

As a consequence of the lack of domestic credit potential and the load of domestic shipyards of 70 percent contracts for export ships (tied to significant discounts and stimulative measures) on the one hand, and significant needs for renovation and increasing the capacity of Yugoslav ships that can be included more effectively in world maritime and river shipping, thus significantly increasing foreign exchange income, on the other hand, a number of suggestions and accounts have been submitted in the past 5-6 years to the responsible federal agencies. Finally, the Federal Executive Council approved a decision on a mutual foreign exchange policy for Yugoslavia for 1982 (SLUZBENI LIST SRFJ, No 72/81, dated 31 Dec 1981), which permitted imports of vessels, aircraft and oil platforms. This policy was later confirmed for 1983.

Foreign credits, including mortgage funds, have been provided in the past period with favorable conditions, ranging from 80 to 90 percent of the full value of ships, with 7-8 years for repayment and interest rates of 6-9 percent, and calling for 10-20 percent participation to be paid upon the delivery of each successive ship. In the period 1965-1977, Yugoslav shipping imported 79 vessels with about 1 million tons capacity on the basis of mortgages, for during that period domestic shipyards were in large part directed by systemic measures toward production for export.

According to the Croatian development plan for shipping in the 1981-1985 period, imports of 52 ships with a total of 553,000 tons capacity and a value of 291.2 million dollars are planned.

On the basis of specially prepared analyses and the records of six vessels imported by Jugolinija of Rijeka (the ships "Baltik," "Moscenica," "Susak," "C. Zuzoric," "R. Boskovic" and Risnjak") totalling 96,656 DWT, which were imported on the basis of mortgages in 1974, and 1976 and paid for in 5 years, despite all expenses during that period there was still a net foreign exchange income of 60.4 million (dollars). It was further determined that in the coming years, i.e., until they reach an age of 15 years, they will earn another 161 million dollars of net foreign exchange income.

If, however, we take the realization of these six vessels with 96,656 DWT and project it to corresponding parameters for the total planned imports of ships on mortgages i.e., 56 ships with 533,100 DWT, then we obtain a figure 6 times greater. According to that, it is projected that if all 56 ships are imported on the basis of mortgages, then in the first 5 years the net foreign exchange income would be 361.2 million dollars (an annual income of 72.2 million dollars), or additional net foreign exchange income for 15 years for all ships (after subtracting all expenses) of 960 million dollars or 193 million dollars per year.

Considering, however, the difficulties that have developed concerning foreign exchange participation by shippers, other foreign exchange obligations toward the society, the impossibility of converting exchange dinars into regular foreign exchange (due to the lack of foreign exchange market, etc.) the great fear that only a little more than one third of the planned new ship capacities can be actually produced is very real. That means that we could count only on about one-third of the foreign exchange income from this source (193/3), i.e., only about 81 million dollars annually, while 162 million dollars would remain unrealized.

Thus it would be a great misfortune for the social community not to provide the credits and other conditions for realizing the planned level of ship construction and additions to the fleet.

In order to normalize the operations of maritime and river shipping of Yugoslavia, implement the planned development an increase foreign exchange income, the following measures should be carried out:

1. The gross foreign exchange obligations of (maritime and river) shipping should be reduced to 27 percent (of the present level), which means that the merchant marine should be exempted from the foreign exchange contribution for the federation and the republics involved that have been in force since 1982.

2. In accordance with the Law on Foreign Exchange Operations and Credit Relations with Foreign Countries, it is necessary urgently to approve regulatory measures on a method for compensating foreign exchange resources of organizations of associated labor in maritime and river shipping of Yugoslavia for shipping charges on foreign routes, due from domestic users of these services when they export or import goods using Yugoslav ships.

3. In accordance with the Resolution on Socioeconomic Relations of Yugoslavia (and Croatia for shipping labor organizations of Croatia) in the self-management interest community for the Yugoslav EOI, the necessary decisions should be made for balancing stimulation on all bases for the export of services to the level of exports of goods of the highest level of processing.

4. Imports of ships should be permitted on the basis of mortgage financing with the provision that the credits involved should not burden quotas and should not limit other imports, since domestic shipyard building schedules are essentially completely full until the end of 1985.

5. The program of construction of the domestic fleet in Yugoslav shipyards during 1981-1985 plan period and specifically in the years 1983, 1984 and 1985 should be given priority, i.e., the proper planned portion of credit capitalization from domestic commercial banks should be provided.

6. Conversion should be implemented of all foreign exchange agreements from 1982 by organizations of associated labor in shipping by selling foreign exchange from unidentified foreign exchange income or the foreign exchange reserves of the Yugoslav National Bank.

7. Reciprocal protection should be provided to domestic shippers in exporting and importing Yugoslav goods, and in that framework, it is necessary for the appropriate agencies, systems, specialized organizations of associated labor, communities and labor organizations to support a significant reduction in imports of transportation services in ways such as limiting permits and in general operating policies.

8. Continuing supply should be assured for fuels for domestic ships in domestic ports (this is related to a previously discussed problem and its discussion).

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END