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ECONOMIC AFFAIRS

EKO: ECONOMICS AND ORGANIZATION
OF INDUSTRIAL PRODUCTION

No. 1, January 1985

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USSR REPORT ECONOMIC AFFAIRS

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No. 1, January 1985

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PROGRESS PRODUCES ECONOMIC PROBLEMS

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 3-26

[Article by Academician L. V. Kantorovich, winner of the Lenin and Nobel prizes (Moscow): "Scientific and Technical Progress--Economic Problems"]

[Text] The 26th CPSU Congress set the task of placing the development of science and technology to an even greater degree in the service of solving economic and social problems of the Soviet society, accelerating the changeover of the economy to the path of intensive development and increasing the effectiveness of public production. At the extraordinary February (1984) Plenum of the CPSU Central Committee Comrade K. U. Chernenko said: "Intensification, acceleration of the introduction into production of the achievements of science and technology and the implementation of large-scale comprehensive programs--all this in the final analysis should raise our society's productive forces to a qualitatively new level." These points found concrete realization in the decree of the CPSU Central Committee and the USSR Council of Ministers, "On Measures for Acceleration of Scientific and Technical Progress in the National Economy," which is directed toward solving problems of "radically increasing labor productivity on the basis of extensive and accelerated introduction into practice of the achievements of science, technology and advanced experience."

In order to organically combine the achievements of the scientific and technical revolution with the advantages of the socialist system of management, it is necessary to rely on the achievements not only of natural and technical sciences, but to no less a degree on social sciences, above all economics. One can observe a considerable activization of economic research during the past 2 decades, with economic theory coming closer to vital problems of economic activity and being enriched with new methods that are related to the application of mathematics and cybernetics (optimal planning and evaluation, target programs, imitation methods and extensive utilization of computers). Certain conclusions from this research have been reflected in national economic practice. Still, many economists and executives are far from mastering modern methods or applying them systematically.

The utilization of modern methods is especially important with respect to problems of scientific and technical progress since these problems are more

complicated and require more precise and refined methods of analysis. Yet traditional methods frequently occupy a dominant position in economic and planning practice and in questions of technical policy. But if purely balance methods, planning in terms of the level achieved and the utilization of average indicators produce results that are to some degree acceptable in problems pertaining to established kinds of products and gradual development of the economy through inertia, they are quite inadequate when dealing with economic problems of scientific and technical progress (economic evaluation of production and distribution of new products, principally new technology, new sources of raw material) and to problems which are characterized by numerous variants and dynamism.

And then even the traditional methods are not always applied with sufficient substantiation, frequently amounting to merely a comparison of individual indicators--production cost, output-capital ratio and expenditures per unit of output. But even if labor productivity is doubled by a new machine which is three times as expensive but is serviced by the same number of personnel, its application can be justified because labor is saved and, as a rule, so are materials and energy. A correct conclusion can be drawn only with combined accounting for all factors. Finally, one must say that in general economic analysis and its results frequently play a secondary role when economic and scientific-technical decisions are made. These decisions are frequently made arbitrarily, without any serious economic analysis at all, and frequently in spite of the results of such analysis, especially if the latter stand in contradiction to departmental and local interests.

Summing up my conclusions in this part, I would set down the following general points.

1. In technical progress the economic aspect is of great and sometimes of decisive significance. Flexible redistribution of funds, successful economic maneuvering and the utilization of economic levers (prices, indicators and stimuli) can produce essential positive progress in production and consumption if they are utilized correctly, promptly and with scientific substantiation. On the contrary, untimely realization and incorrect economic evaluation of the measures that are earmarked can reduce the effective new technical equipment to zero and compromise it.

One can give as a positive example of the utilization of economic levers the increase in the rates for passenger air travel of 10-20 percent which was put into effect in 1976. As a result, there was almost no increase in the number of air passengers from 1975 until 1980, but the average distance of the trips increased from 1,250 to 1,600 kilometers. That is, there was a reduction of the number of short trips and these were transferred to other kinds of transportation. This change made a significant contribution to improving the balance of energy resources (expenditures per unit of work on rail transportation are approximately one-tenth the amount for air transportation) and it was quite socially acceptable (refraining from using air transportation for relatively short distances did not matter very much to the passengers, and at the same time it was easier to make long-distance trips). An even greater savings on energy resources could be produced by more efficient distribution of cargo shipments among the various kinds of transportation.

As a negative example one can give the fact that up to this point we have not differentiated the rates for electric energy at various times of the day, even though the appropriate developments were conducted almost 20 years ago.² Yet the implementation of these suggestions could stimulate more uniform loading of energy equipment, produce an increase in the output-capital ratio and appreciable savings on electric energy, improve its qualitative parameters and reduce losses associated with peak periods. In spite of the diverse possibilities of this kind, we still are not making sufficient use of variation and differentiation of prices as a means of economic influence in order to increase the effectiveness of the economy.

2. Economic analysis and evaluation have not yet assumed their proper position in economic and management practice. If when justifying and adopting technical decisions complex analyses and calculations are conducted, in economic decisions one frequently does without any in-depth analysis or ignores its conclusions. We have lost our taste for and interest in economic indicators, and yet previously in engineering management a large position was allotted to economics. The role of such economic indicators as prices is inadequate. Yet a methodologically substantiated economic calculation which relies on correctly constructed prices should essentially determine the technical decisions and technical policies that are selected.

If the thesis that "the economy should be economical" were actually put into practice, it would hardly have been possible that the Kansk-Achinsk basin, where coal costs about 2 rubles per ton, that is, one-third to one-fifth the amount in other basins, would develop extremely inadequately.

3. Scientific and technical progress requires adopting decisions concerning essential progress and changes in the economy (redistribution of capital investments, changing over to new technologies and new kinds of products. The effectiveness of these decisions is provided with objective and correct economic calculations and those indicators (prices, normatives and so forth) on which they are based. Thus economic control of scientific and technical progress, like control of the national economy in general, requires further improvement of methods of planning and economic analysis and of economic indicators.

But the economic problems that arise in connection with the scientific and technical revolution are so specific and complex that when considering them one cannot be limited to the application of a general methodology of economic analysis. This must be essentially enriched and significant special research must be conducted.

During economic analysis and substantiation of problems associated with scientific and technical progress it is especially important to have a system approach in order to provide for a comprehensive, intercoordinated decision, prognosticatory accounting for the dynamics of changes in the situation, and a national economic evaluation of effectiveness. Special attention must be given to a maximum reduction of the time periods for realizing and disseminating scientific and technical achievements.

In this connection let us consider further those general issues related to improvement of economic analysis and indicators which are especially significant for realizing scientific and technical progress, and also certain specific economic problems that relate directly to scientific and technical progress.

The Economic Nature of Production. Resources, Expenditures, Prices

Economically efficient utilization of resources (labor, materials, equipment and natural resources) has always been a necessary element in economic activity. Under modern conditions with a shortage of labor resources and capital investments and a partial exhaustion of certain kinds of natural resources, this task is especially crucial and timely.

The technically possible ways and solutions for satisfying various needs and demands of the society are extremely diverse. This is why it is so necessary to have a correct objective evaluation of expenditures and a comparison of various kinds of resources in order to select the most effective and economical ways and means.

In our day special attention should be given to the fundamental indicators which determine the effectiveness of production: the increase in labor productivity, economical utilization of raw materials and fuel and energy resources, product quality, the introduction and assimilation of the latest scientific and technical achievements, and reduction of direct losses of resources. Here the criteria and the evaluations of the production and economic activity of the enterprise in the incentive measures for scientific and technical progress must take into account the fulfillment of the corresponding indicators which reflect these aspects and contribute to providing for high rates of development of our country's national economy.

When the plan is completely balanced, the fund-forming indicator should include parameters which characterize the degree of utilization of scientific and technical achievements in production practice. And since in the final analysis scientific and technical progress is manifested in economy of labor expenditures and material resources and improvement of product quality, comprehensive incentives for this should be primarily related to all of the aforementioned indicators of production effectiveness.

Certain efforts of technical thought should be directed immediately toward problems of economy, more complete and efficient utilization of resources. In particular, to do this it is important to bring order into accounting and control of the expenditure of resources with extensive utilization of modern means of accounting for and processing data.

In addition to the summary account of the availability and expenditure of resources, it is necessary to have data that are as complete and precise as possible concerning the concrete amounts of expenditures of individual kinds of resources per unit of the most important kinds of products in physical and value terms--expenditures of material, labor and energy resources, production capacities and natural factors. It is also necessary to make sure that the prices reflect complete and concrete expenditures of labor, fixed capital,

natural resources and materials for each kind of product, without which it would be difficult to utilize prices for comparing the effectiveness of economic decisions and evaluating new products.

In report data, along with the production cost of the product, it would be expedient to calculate also the national economic expenditures for the product--for all of the main kinds of resources. In economic analysis one cannot do without such value indicators as adduced expenditures, normative net output and growth or differential expenditures.

Prices perform a number of functions. Under the conditions of socialist management it is especially important that prices are the main means of comparing national economic expenditures and results for various kinds of products, and also a means of aggregation. The way the price system performs this basic function is determined mainly by its quality.

In spite of the essential improvement in the price system during the course of the 1967 reform and subsequent adjustments, including the recent price revision in 1982, the price system still has a number of shortcomings which impede its utilization in economic analysis.

The prices deviate considerably from the socially necessary national economic expenditures for the given products. Since prices must be used as a basis for a comparison of the expenditures and results when making economic decisions, comparing various technologies and so forth, these shortcomings in the price system frequently lead to incorrect decisions. In precisely the same way in cost accounting [khozaschet] certain kinds of products turn out to be "advantageous" while others are "disadvantageous," which gives rise to planning violations and incorrect distribution of the program, and impedes an objective evaluation of the results of the activity of the enterprise. In particular, it is disadvantageous to produce semimanufactured products and spare parts, products for general machine-building use, catalysts for associates in the chemical industry and so forth, which has serious negative consequences. These incorrect aspects in the establishment of prices, which impede improvement of the economic mechanism, are associated with certain methodological shortcomings and price setting. Let us raise a couple of these issues.

An essential positive aspect was the introduction of payment for funds and accounting for the capital-intensiveness of the product in its price. But since when forming the price and calculating the profitability one takes into account not the concrete, but the average capital-intensiveness (as a rule, for the branch), this places products that were assimilated long ago in a more advantageous position. Their capital-intensiveness is usually lower, and their material-intensiveness higher than the average for the branch (since as the product is assimilated and its output increases, the cost of processing it and its capital-intensiveness decreased). Newly assimilated progressive products are placed in a less advantageous position, and technical progress is retarded.

In exactly the same way the established payment for funds was not fully reflected in cost accounting. It is not taken into account in the production

cost, the price of the products or in volume indicators, and it does not stimulate essentially more complete and intensive utilization of equipment, increased shift work or efficient formation of the program.

The utilization of natural resources and the rent component up to this point are regularly not taken into account in the price. The lower level of prices for raw material products that follows from this does not create sufficient stimuli for the enterprises to save on and replace it with equipment that is in greater supply. The increased metal-intensiveness in machine building is related to this to a certain degree. The establishment of prices for raw materials taking into account rents and the introduction of rents in cost accounting would prevent incomplete extraction of minerals and would make it economically justified to have comprehensive development of ores and higher-quality processing of raw material.

It would be especially significant to have systematic accounting for rents in the prices and cost accounting for agricultural production. This would stimulate intensification of agricultural production and correct distribution, and would contribute to equalizing the economic positions of farms that are located in various natural conditions. It has long been time to arrange an economic experiment on such a system of economic relations in agriculture in one of the union republics or one of the oblasts of the RSFSR.³

When establishing prices it is important to account for differential (growth) expenditures in those branches where they differ significantly from the average ones. This pertains to transportation, particularly rail transportation, where dependent (current and capital) expenditures comprise only about half of the general expenditures, which must be taken into account when establishing the rates. Another area is series machine building, where expenditures on additional output of products, as a rule, are considerably less than average. Taking this circumstance into account makes it economically justifiable to considerably reduce the prices for many kinds of machine-building products, which would undoubtedly contribute to the acceleration of technical progress.

The Time Factor

Realizing the results of scientific and technical progress is a lengthy process. Therefore it is of decisive significance here to take the time factor into account and to correctly compare various time expenditures and results. Yet in practice accounting for the time factor is not systematic and sometimes it is simply lacking. In particular, for technical progress it would be important to account more consistently for the time factor when carrying out construction, reconstruction and the introduction of new technical equipment.

Long time periods for construction, large volumes of incomplete work and dispersion of forces, in addition to the damage caused by the freezing of funds, also has a negative effect on technical progress, putting off for a long time the production of products at the new enterprises, and thus it reduces the level of the technical innovation of newly introduced capacities. One of the reasons for this is incomplete accounting for the time factor.

More consistent accounting for this factor on the plane of the utilization of capital investments and when evaluating the activity of the construction industry will contribute to accelerating the startup of objects of construction and reconstruction, to reducing the volume of incomplete work and to realizing dynamic and effective paths of scientific and technical progress.

Systematic introduction of discounting of various time expenditures into reports and accounts for construction work and also the inclusion of discounting (increased cost) for incomplete construction into the funds expended for capital investments would improve things appreciably.⁴ In this case both the client ministry and the construction organizations would be motivated to reduce the time periods for construction, to apply high-speed methods, and not to disperse funds, but to concentrate them on the objects and within the time periods which would allow the most rapid startup of the completed facilities.

This will involve acceleration of the rates of startup of industrial facilities, greater technical innovation in them and more correct differentiated evaluation of the cost of fixed capital, and it will justifiably place in an advantageous position the active capital as compared to the passive capital, and reconstruction as compared to new construction.⁵

The time factor is not taken into account in products with a long production cycle either (shipbuilding, winemaking). The lower interest level when using bank credit also has a negative effect.

The time factor is not taken into account quite satisfactorily in the formation of amortization payments. There is sometimes a partial double accounting period. If one takes into account the existence of payments for funds,⁶ it turns out that the compensation for physical wear and obsolescence is calculated incorrectly, and frequently this unjustifiably increases production cost and the price of products from the processing branches.

Labor

The effectiveness of production and the realization of the achievements of scientific and technical progress depend essentially on the availability, efficient distribution and utilization of labor resources. For better accounting for labor resources it is necessary to reflect in the prices, along with direct norms for wages, factors of shortage (surplus) of labor resources in various rayons and for various occupational and skill groups. A quantitative cost evaluation of the shortage factor can be obtained with the help of known economic and mathematical models.

Here it is justified to take such an economic measure as the introduction of payments by the enterprises for labor which are differentiated according to sex/age and occupational groups of workers, and also territorially (higher payments in regions where there are labor shortages and negative payments (subsidies) in places where there is a surplus of labor). This would contribute to efficient distribution of labor and production. With the existing shortage of personnel in large industrial centers and in newly assimilated regions of Siberia, the existence of such payments would

contribute to more efficient distribution of labor-intensive productions and to the introduction of labor-saving technologies, to refraining from the use of categories of workers of which there are the greatest shortages in places where it is possible to replace them (for example, male labor with female) and so forth. Such payments have been introduced and are being utilized successfully in a number of socialist and in certain capitalist countries (Great Britain).

It would also be expedient to establish a more systematic differentiation of the rates themselves (or the increments to them) and the wage fund. For especially economical productions--with a high level of capital-availability, which are newly constructed with modern equipment or which are effective in terms of natural supplies--higher wages should be set so as to improve the provision of the industries with the necessary labor resources, to increase the possibility of selecting good personnel, to reduce labor turnover and to increase shift work. This will contribute to increasing the output-capital ratio and labor productivity in the national economy as a whole. Now such new enterprises frequently do not operate at full capacity and their output-capital ratio is inadequate. Finally, one should increase the differentiation in the wages depending on the intensiveness and quality of labor and develop more precise and objective methods of calculating these characteristics of labor. This pertains to workers not only in physical, but also in mental labor.

For purposes of increasing labor productivity and in order to increase the significance of the earned ruble, it is necessary to improve the commodity part of the wage fund, while simultaneously reducing the number of unpaid and discounted services and to arrange the organization of trade. Naturally, it is not easy to earn money, but it should be convenient and pleasant to spend it and to realize one's earnings.

In order "to implement economic and moral measures which would provide motivation for updating technical equipment and technology on the part of all participants in their creation and introduction into production,"⁷ it is necessary, in particular, to develop concrete forms of stimulation for attracting highly qualified scientific workers for work at the enterprises. At the present time the proportion of individuals with scholarly degrees who are working in plant laboratories and design bureaus is insignificant. In addition to material incentives for the transfer of some of the scientific workers to permanent work in industry, it is necessary to create conditions for more extensive enlistment of scientists from scientific research organizations and VUZes for consultation work and other forms of active participation in the scientific and technical activity of the enterprises as a form of combining jobs.

At large scientific institutions of the Academy of Sciences and other systems, probably, it would be justified to create special cost-accounting branches--for bringing the results of research to their practical completion and introduction into production. These branches could have special staffs and enlist some of the skilled specialists from the main institute.

It would also be expedient to revise the system of wages for scientific workers, keeping in mind augmenting the strictly regulated salary scale, which depends only on the scholarly degree, the length of scientific and pedagogical service and the category of scientific institution, with a more flexible system of wages and material incentives which enables the managers of scientific research institutions to differentiate when establishing and changing wages and bonus payments on the basis of the actual scientific potential of the workers, how crucial the subject matter they are working on is, and the results of their work.

Evaluation of Activity

A great deal depends on objective and fair evaluation and stimulation not only of the labor of the individual worker, but also of the activity of the collective as a whole--of the enterprise or association. The difficulty is that the activity of the enterprise is multifaceted and is characterized by the volume and quality of the products that are produced, the composition of these products, the degree to which this composition corresponds to the demand for the products and the orders, the level of expenditures, the assimilation of new technical equipment, the maintenance and increase of the enterprise's production potential, and so forth. Only in a few cases, when one kind of product is produced, can its output be fully characterized by one physical or value indicator. As a rule, there are many kinds of products and then it is necessary to combine them, group them under one indicator, in value or conventional physical form. Here it is important to have a successful selection and correct formation of this indicator.

Indicators of the commercial and gross output characterize in a distorted way the volume of work performed by the enterprise since they include the transferred value (the labor of others). In this respect the indicator of the normative net output is theoretically better substantiated. It is now a matter of checking it in practice.

On the other hand, the indicator is formed on the basis of a system of prices, normatives and other data. Therefore the shortcomings in the price system (various levels of advantage, lack of correspondence to actual expenditures) and also other normatives can distort the evaluation. There is a similar situation with respect to planning assignments: even 100 percent fulfillment of a plan that is known to be too easy, for example, is not evidence of good work.

Aggregated indicators are necessary, it is impossible to do without them, and they must be improved and utilized properly, but one must recall that they are inevitably incomplete and inadequate, and one must not make a fetish out of them or even overestimate the significance of these indicators and the conclusions that are based on them.

One cannot but take into account the fact that the characteristic of the volume of the enterprise's work as one aggregated indicator is crude and primitive to a certain degree. When, in a number of cases, there are inevitable changes in the program and changes in the external conditions, such

a planning assignment can turn out to be either unjustifiably rigid or too easy.

Taking this into account it is expedient, in our opinion, to utilize more flexible forms of planning assignments. When planning the production program in terms of new, recently assimilated kinds of products, when there is a lack of determination of natural and certain other conditions, it is difficult to define precisely the possible volume of output. This frequently motivates people to reduce the planning figures, and if they are fixed, the supply and other conditions are planned correspondingly so that the revealed possibility of essentially increasing output cannot be realized. It would be more justified in such cases to establish an assignment with a certain "range"--from and to--so that, however, the enterprise is responsible for complete utilization of its capacities and is motivated to do this. This, of course, will require a more flexible supply system.

An essential shortcoming in the indicators that are applied is the fact that, as a rule, they are used to evaluate the activity of the enterprise for the given year. This predetermines the lesser interest in long-term measures and providing for preparation and reserves for subsequent years. The evaluation of the activity of the enterprise as compared to the level reached during the preceding year does not do a good job of stimulating the development of production. An advance that has been achieved in increasing effectiveness is not usually realized in one year, and it is unfair that it is in no way taken into account in subsequent years. It would probably be better to compare the results of the given year with the average for the 2-3 preceding years. There is not enough responsibility for postponing and slowly conducting measures related to new technical equipment, for a lack of initiative or for forfeited income.

Therefore it seems important, along with the planning indicators, to introduce a well-thought-out system of evaluations and analysis of the activity of the enterprise which make it possible to conduct an objective comparison of the results of the operation of the enterprise with its capabilities, taking concrete conditions into account. The methodology and forms of this evaluation require scientific development, and general economic, branch-by-branch and practical testing.

Moreover, probably, not everything can be included in normatives and the assignment. For example, the need for accounting for the interests of other enterprises and branches and better satisfaction of the demands of the consumers, sometimes even to one's own detriment. Moral factors cannot be ignored here. It is necessary to educate economic personnel during the course of the formation of public awareness which is oriented toward national economic interests.

Even more complicated than the evaluation of the work of the enterprises is the evaluation of the activity of the scientific production association, and especially scientific institutions. Here it is dangerous to rely on printouts or blueprints, rubles, the number of tasks, or reports; more objective and substantiated methods must be applied.

For scientific and planning developments it is typical to have a relatively long time lag between the performance of the work and its realization and the effect. Therefore, perhaps, it would be expedient, in addition to payment and awarding of bonuses at the time of the completion of the next stage, to envision an additional significant incentive for creative and management workers over a period of several years--when determining the positive results of the developments, after their industrial realization, and in the form of conventional commitments to the performers (like the rights of inventors). This would increase the motivation for scientific organizations to introduce their developments as quickly and successfully as possible and it would also increase the responsibility and role of the authors' supervision.

Economic Conditions, Planning and Stimulation of the Work for Creating and Introducing New Technical Equipment

The creation of new technical equipment and new kinds of products and technologies, and their assimilation and dissemination within limited time periods constitute a most important and largely unsolved problem of our economy. The creation of new technical equipment is a complicated task and it is distinguished in principle from extensive expansion of existing productions. New technical equipment requires creative initiative, research and design developments, experimentation, testing of experimental models and the development of new technology and equipment, and it involves risk and frequently a temporary reduction of the production volume and other losses.

In order to accelerate scientific and technical progress in the country, it is undoubtedly of key significance to provide favorable economic and organizational conditions for the creation and industrial introduction of new technical equipment, products and technologies. Here one should take into account first and foremost the essential differences in economic conditions and mechanisms for the realization in the national economy of scientific and technical innovations which require a radical change in a number of economic and organizational provisions.

First of all the creation of new products and technologies involves a large volume of nonindustrial expenditures (on scientific research and development, the creation of a production base and the assimilation of the new products. The assimilation of new technical equipment is frequently accompanied by a reduction of productivity during the output of the basic products of the enterprise because some of the capacities are taken away for reconstruction and adjustment of production of the new products and other losses.

Further, the period between the creation and the mass introduction of innovations is extremely long, and it can be calculated in years and even decades, as a result of which the full economic effect from a new product is considerably distant in time from the expenditures.

A typical feature of new technical equipment is the extremely dynamic nature of its production, particularly the sharp change in economic indicators, especially during the first years of assimilation.

During the process of dissemination of new technical equipment the expenditures can be reduced many times over, and operational and consumer qualities can be sharply improved.

Moreover, the final national economic effect from new technical equipment, products and technologies frequently greatly exceeds the immediate economic cost-accounting effect during the first years of its output. This final long-range effect is only partially embodied in the material mass of the products that are produced. Along with it new technical equipment makes an essential contribution to the scientific and technical potential of the branch or the national economy as a whole (including the accumulation of production experience and influence on related branches of industry).

Therefore the problem of the creation and realization of new technical equipment cannot be solved incidentally, along the way with the general development of production; it can be effectively resolved only under the condition that one fully takes into account the specific features of the problem, that the proper forces and means be used, and that a favorable economic climate be provided.

Scientific and technical progress is a necessary and permanent condition for the development of a modern economy and therefore large expenditures on the assimilation of new products and technologies are one of the kinds of socially necessary national economic expenditures, and the funds for covering these expenditures should be specially allotted and directed for these purposes. In particular, it is necessary to envision an essential increase in the funds for new technical equipment of branch ministries and to create a state fund of new technical equipment for maintaining interbranch measures of this kind and also measures that have a great deal of statewide significance, particularly unionwide scientific and technical programs. When producing new products, especially those that are new in principle, it is necessary to have a different policy for planning, cost accounting, financing and price setting than one has when producing ordinary products.

For the period of the assimilation of new products, the plan of the enterprise can envision a temporary reduction of the production volume with a compensation of the economic incentive funds.

In spite of all these measures it might seem that even for products that are extremely effective in the future, with the first assimilation and during the first years the expenditures on their production exceed their consumer effect (limit price). Therefore it is expedient in a number of cases for a certain period to establish two prices for the new products: a lower one for the consumer, which corresponds to the future level of expenditures after the production scale is fully reached, and a higher one for the producer, in keeping with the planned level of expenditures during the period of assimilation. The difference could be compensated for through the funds for new technical equipment.

The establishment of two different price levels for new technical equipment and products during the period of their industrial assimilation will contribute to observing the interests both of the consumers and of the

producers, and thus will not place innovations under conditions that are worse than those for traditional products. The price for the consumer, which is determined on the basis of the future level of expenditures, taking into account, of course, a sufficient level of profitability, will stimulate extensive introduction of innovations from the very beginning of their assimilation and also correct determination of the area for their efficient application, even while the actual production outlays are high. On the other hand, the establishment of higher calculation prices for the producer of the new product will make it possible to compensate for the inevitable increased outlays during the first years of assimilation and will provide the proper motivation to produce the new products and develop them.⁹

It is also expedient to use bank credit for the assimilation of new products with shared participation of the bank both in the risk of possible losses and in the additional profit received from successful developments. This requires that the industrial bank take on functions that are new for our conditions.

It is necessary to establish a special policy for planning and supply of the production of new products and experimental productions with materials and equipment--one which is more flexible and efficient, taking into account the possibility of temporary failure or a reduced effect from various developments. Such a policy presupposes the formation of the necessary reserves of materials and production capacities for these purposes, as is envisioned by the decree of the CPSU Central Committee and the USSR Council of Ministers concerning acceleration of scientific and technical progress (August 1983).

For accelerated expansion of the assortment and elimination of shortages of products, it is necessary to grant the ministries and individual associations the right to take the initiative in producing products with improved quality and increased demand at prices that provide for high profitability, which are to be sold in firm stores or in the trade network on a commission basis, that is, with their acceptance of the responsibility for predicting the demand and sales. Special bank credit is also appropriate here.

It seems to us that one should not juxtapose and regard as an alternative planned management and socialist enterprisingness. Planned management from consolidated basic positions and contractual relations can be supported and augmented by the private initiative of the managers of enterprises which is legitimized within certain limits and with the allowance of a certain amount of competition. The expansion of the rights of the enterprise in this respect can provide for increased dynamism and flexibility of the economy. Such an expansion of functions, like one-man management by the director, in no way violates the socialist nature of the enterprises and associations. This becomes even more understandable if one takes into account that the consequence of the complexity of the structure of the economy and the existence of stochastic and indefinite factors as well as the proportion of subjective decisions inherent in socialism, planned scientific management cannot be fully determined either, and it must include elements of adaptivity.

The effectiveness and flexibility of the economy could be promoted by more extensive specialization of enterprises not only in terms of the object

principle, but also in terms of the technological principle, whereby the enterprise produces items or semimanufactured products for enterprises of various branches (like rolled metal), using consolidated technology. This could increase the effectiveness and flexibility of production and facilitate the assimilation of the production of new items, particularly when they use universal technologically oriented productions of machine tools with program control and robot equipment.

Acceleration of the introduction into production of principally new products and new technological processes depends essentially on conducting a number of measures for improving invention work in our country. We must create additional stimuli for extensive and rapid introduction of inventions into production. The most crucial in this area are measures directed toward increasing the economic incentives both of the inventors themselves and of the enterprises that assimilate new technical equipment which is created on the basis of inventions, and also correct objective accounting for the actual effect so as, in particular, to provide for adequate remuneration for the inventors. How does one increase the motivation of the enterprises and individuals who provide for the introduction of inventions into production, particularly the most effective and promising ones, the people who organize the widespread output of new products? The introduction of differentiation in advanced payment of remunerations for the development and inventions in keeping with their prospective and actual national economic effect would contribute to this.

In order to accelerate the development and introduction into production of new technical equipment which is based on inventions, it would be expedient to organize specialized firms for evaluating and processing inventions and bringing them to the state of an experimental model or series production. It would also be expedient to create an invention fund (similar to the literary fund) for protecting the interests and providing material incentives for the inventors.¹⁰

These measures and also the corresponding system of incentives and the establishment of a higher level of profitability for new products can radically change the existing situation, create motivation to organize the production of new products, and give space for initiative.

Evaluation of the Effectiveness of Scientific and Technical Decisions and Scientific and Technical Progress as a Whole

When making scientific and technical decisions it is very important to have a correct evaluation of the effectiveness of the measures under consideration. The existing methods for evaluating the effectiveness of capital investments and determining the effectiveness of new technical equipment and inventions are not coordinated with one another and fail to take into account a number of factors. Therefore it is necessary to develop a unified comprehensive methodology for evaluating measures related to scientific and technical progress (capital investments, new technical equipment, inventions and scientific and technical measures) which is oriented toward criteria of the final socioeconomic effect. It should reflect an accounting for the time factor, the dynamics of labor productivity and changes in natural resources.

Within the framework of this document the peculiarities of the evaluation of the effectiveness of principally new technical equipment would also be reflected.

Work is being conducted on such a document and a special commission has been created from the USSR Academy of Sciences, the USSR State Committee for Science and Technology and representatives of other agencies. One must hope that this commission will be able to solve the problem satisfactorily.

Of no small importance is an evaluation of the influence of scientific and technical progress, science and the realization of its achievements on the development of the economy as a whole. I should like to express certain ideas, perhaps questionable ones, regarding the contribution of science to the development of the national economy. In this question, as in general when discussing the effectiveness of the economy, calculations are constructed on the basis of the indicator of the gross social product (or produced national income), that is, the growth of the produced product in comparable prices.

During recent years the growth rate of our national income has been 3-4 percent. This growth has been conditioned by a number of factors: extensive ones--an increased number of workers, the enlistment of new natural resources, and also intensive ones--the growth of the capital-availability, increased qualifications of workers, and the use of better implements and technologies. The latter is actually based on science and the realization of scientific and technical progress.

Hence on the basis of an analysis of industrial functions, expert evaluations and other considerations one can determine the part of the economic growth (with the exception of extensive growth) which can be attributed to technical progress (say, 1 percent of the 4 percent growth of the national income), which is compared with expenditures on science and development. But the indicator of the national income now gives clearly incorrect evaluations of the final results of production activity (partially increased, for individual kinds, but in general--reduced).

In reality the totality of factors in public production is far from being fully reflected through the national income, particularly the role of science and technical progress. A calculation that relies on the national income would be correct if conditions were unchanging and if the effect from technical progress were limited to increasing labor productivity under these conditions.

In reality there are a number of other aspects of economic development which must be taken into account when evaluating its effectiveness and which are not reflected in the national income. Without them one cannot evaluate the role of science and scientific and technical progress either.

Let us list these aspects.

1. Exhaustion of the more favorable and nearby natural sources involves increasing the cost and capital-intensiveness of raw materials and fuel. Therefore only part of the effect from increased labor expenditures and

capital investments and also scientific and technical progress goes for increasing the output of products, and a considerable part of it goes for compensating for deteriorated conditions. This part is not reflected in the indicator of national income. The same thing pertains to the ever increasing requirements and expenditures for environmental protection.

2. Social progress, which increases the requirements placed on the conditions for industrial work, brings about the necessity for continuous improvement of working conditions, reduction of heavy and manual labor, and so forth, which is especially appreciable under the conditions of the shortage of the labor force. Thus a certain part of material and capital expenditures and the scientific and technical potential is realized not in the form of increased labor productivity, but in improvement and facilitation of the conditions of labor. This too, as a rule, is a positive social effect which is not reflected in the indicator of the national income.

3. Finally, there has been a sharp rise in the structural and consumer level of a number of kinds of consumer goods and public needs, and also of means of production, frequently without an essential increase in expenditures and prices for them (pharmaceuticals, radio equipment, household synthetics, services, housing, municipal services, passenger transportation). In any case, the growth of consumer value in these cases, as a rule, is much greater than the increase in prices. These qualitative changes are not reflected in the national income either, or else they are only partially reflected.

In view of what has been said it is clear that science and embodied scientific and technical progress compensate for shortages of natural resources and produce important results for the society which cannot be taken into account in the national income. Without the contribution of science and technical progress to the national economy the national income, possibly, would not increase, nor would there be any other results which are necessary for the society. Thus evaluating the results of scientific and technical progress on the basis of a direct increase in national income reduces them extremely.

FOOTNOTES

1. PRAVDA, 28 August 1983.
2. Kantorovich, L. V., "Mathematical Methods of Solving Economic Problems," KOMMUNIST, No 10, 1966; Volkonskiy, V. A., Kuzovkin, A. I., "On Rates for Electric Energy From the Standpoint of the Theory of Optimal Planning," ELEKTRICHESTVO, No 3, 1983.
3. Kantorovich, L. V., Virchenko, M. I., "Principles of Forming Procurement Prices for Agricultural Products and Possible Ways of Calculating Them" in the book: "Osnovnyye Napravleniya Sovershenstvovaniya Tsenoobrazovaniya na Produktsiyu Agrarno-Promyshlennogo Kompleksa" [Main Directions for Improvement of Price Setting for Products of the Agroindustrial Complex], Moscow, Preyskurantizdat, 1980.
4. The implication of discounting when evaluating a construction object consists in that for expenditures that are made each year in the future

one deducts a certain percentage (10-12 percent according to the normative) until the time of the completion of the construction or the startup of the object.

5. Model calculations conducted in connection with the work under the Comprehensive Program for Scientific and Technical Progress showed that only a reduction of the average time period for construction of 40 percent would make it possible to increase the annual rates of growth of the national income by 0.5 percent and more.
6. The introduction of payments for funds and the accounting for the normative of effectiveness mean recognition of the principle of bringing together expenditures from various times. It is logical to apply it when determining amortization payments as well, and since the latter are greatly advanced as compared to the time of renovation, their amount should be correspondingly reduced.
7. "On Measures for Accelerating Scientific and Technical Progress in the National Economy. Decree of the CPSU Central Committee and USSR Council of Ministers," PRAVDA, 28 August 1983.
8. Thus generalized data concerning the production of agricultural machinery show that actual expenditures per one item during the course of several years with a simultaneous increase in output decreases to approximately one-half. See: Kolotushkina, A. P., "Tsenoobrazovaniye i Tekhnicheskiy Progress v Sel'skokhozyaystvennom Mashinostroyenii" [Price Setting and Technical Progress in Agricultural Machine Building], Moscow, "Mashinostroyeniye," 1976.
9. A discussion and a model analysis of the proposal concerning two prices and the evaluation of innovations is given in the following works: Kantorovich, L. V., "Economic Problems in Scientific and Technical Progress," EKONOMIKA I MATEMATICHESKIYE METODY, 1974, Vol X, Issue 3; Makarov, V. L., "Strengthening Incentives for Innovations," VOPROSY EKONOMIKI, No 3, 1979; "Modeling and Analysis of the Effectiveness of Scientific and Technical Progress," Sb. Trudov VNIISI, No 9, 1978.
10. For more detail see the collection: "Upravleniye i Novaya Tekhnika" [Management and New Technical Equipment], Moscow, "Ekonomika," 1978, pp 15-24.

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FUTURE ECONOMIC MECHANISM ANTICIPATED

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[Article by V. I. Kletskiy, doctor of economic sciences, chief of the sector for problems of the economic mechanism of the Institute of Economics of the BSSR Academy of Sciences (Minsk): "What Should Be Included in the Economic Mechanism of the 12th Five-Year Plan?"]

[Text] In order to develop the most important areas and concrete measures for improving the economic mechanism in the five branches of the country's industry, in keeping with the decree of the CPSU Central Committee and the USSR Council of Ministers of 14 July 1983, "On Additional Measures for Expanding the Rights of Production Associations (Enterprises) of Industry in Planning and Economic Activity and for Increasing Their Responsibility for the Results of Their Work," a large-scale economic experiment is being conducted. Light industry enterprises of Belorussia are participating in it. Moreover, in our republic the range of branches and enterprises that are operating under the conditions of this experiment is expanding. Thus since 1 January 1985 the conditions of the experiment have been extended to the meat and dairy and food industry as well as to consumer service enterprises. With the expansion of the framework of the experiment, the tasks have become more complicated and the scientific and economic community has taken on more responsibility for objective analysis of the course and the first results of the experiment. Why is such an analysis necessary? First and foremost in order to establish and subsequently extend to other branches the new elements of the economic mechanism that have proved themselves, to improve certain insufficiently developed methodological provisions, and to promptly refrain from clearly weak or erroneously introduced conditions for the functioning of the economic mechanism. Such an analysis should be conducted, in our opinion, from the standpoint of how the new elements of the economic mechanism are contributing to increasing the effectiveness of production and improving product quality.

Orientation of Production Toward Satisfaction of the Demands of the Consumers

One of the most essential shortcomings in the current economic mechanism is its incomplete orientation toward the needs of the industrial and nonindustrial consumers and toward the output of products (in volume,

assortment and quality) which are most needed by the national economy and the country's population. Numerous facts can be given to corroborate this.

In spite of the significant underfulfillment of the plan for the output of footwear and clothing during the past years of the 11th Five-Year Plan (during 1981-1982 light industry in the USSR failed to produce 51 million pair of shoes and failed to deliver 1 billion rubles' worth of clothing), wholesale and retail trade has stored up unmarketable footwear and clothing and the quantity of this is not decreasing. In 1982 in the USSR as a whole the following were either reduced in grade or returned for repair: fabrics, 9 percent, leather footwear--9 percent and sewn items--8 percent of the overall output. In 1983 in a number of republics (Azerbaijan, Georgia, Armenia) 25-30 percent of the items from light industry that were inspected were rejected.¹

During 1980-1982, according to data of the USSR Central Statistical Administration, the USSR national economy annually produced approximately 17 billion rubles' worth of products which were not stipulated by agreements with trade organizations and other consumers. And still from year to year they are not fulfilling the indicator for product sales which is calculated taking into account the fulfillment of agreements and orders. The average level of its fulfillment in industry as a whole, according to data of the USSR Central Statistical Administration, was in 1979--96.6 percent, in 1980-1981--96.7 percent, in 1982--97.1 percent and in 1983--98 percent.

According to the author's data, in 1983 approximately 39 percent of the enterprises and production associations in industry did not fulfill the plan for sales taking into account agreements for deliveries and orders, failing to deliver more than 10 billion rubles' worth of products. Moreover, during all these years the plans were significantly overfulfilled in terms of the overall sum of sales of industrial products. Products not stipulated by agreements are frequently produced in order to fulfill the general indicators for production volume and to obtain additional profit. Such products are sometimes sold as compulsory "loading" in addition to products that are in short supply and frequently they remain in the warehouses of the consumer enterprises in the form of above-normative residuals (which, incidentally, are increasing) or else they pile up in wholesale and retail trade. Some of these products, in the final analysis, are marked down (and, of course, at the expense of the state budget which sustains significant losses because of this).

As was noted at the All-Union Scientific and Practical Conference, "Improvement of Management of the Economy of Developed Socialism," which was held in Moscow in 1984, a large part of the products produced in the country turn out to be unnecessary to the national economy and the population. Yet large amounts from wage funds are expended on their production, and management personnel of the enterprises receive no small amounts of bonuses. Consequently, the defect in the economic mechanism consists in that it does not raise the necessary obstacles against the output of such products and that it makes it possible to essentially squander valuable material and raw material resources on the output of products that are not needed by the consumer. The reason for this situation is the imperfection of our evaluating

indicators and methods of stimulating the enterprises and the fact that they are not directed toward producing products that are needed by the consumers.

It is known that in all branches of our industry we have a policy of reducing incentive funds for failure to deliver items under agreements and orders. This penalty in the majority of branches actually comprises only 1 percent of the reduction of the material incentive fund for 1 percent of underfulfillment of the delivery plan. Such a punitive measure is clearly inadequate for the enterprises since the incentive fund amounts to only 8-10 percent of the overall wage fund. Therefore we are faced with the problem of more strictly linking evaluation indicators and stimuli of the collectives to the fulfillment of the delivery plans under agreements and orders as well as the problem of orienting production toward the needs of the consumer. A number of suggestions are being made as to how to resolve this problem. In particular, it is being suggested that we form the wage fund according to this indicator as a main source of payment for the labor of the collective.

The large-scale economic experiment is resolving it through the formation and utilization of the material incentive fund. In keeping with the conditions of the experiment, there is a sharp increase in sanctions for failure to meet the indicator of deliveries under agreements and orders--for each percentage of underfulfillment of the delivery plan, the incentive fund is reduced by 3 percent. It is envisioned that the enterprises that have successfully fulfilled the delivery plan for the quarter have the right to additional deductions into the material incentive fund in an amount of up to 15 percent of the planned amount of the fund.

The work experience of the enterprises under the conditions of the experiment has shown the fairly high effectiveness of this system. Thus according to the results of the first half of 1984, all enterprises of light industry in Belorussia (with the exception of one) fulfilled the plan for product sales taking into account their commitments under agreements and deliveries, by 100 percent while during the first half of 1983 this indicator was not fulfilled by 29 enterprises, which failed to deliver 17 million rubles' worth of products to the consumers. But it should be noted that 100-percent fulfillment of the plan for deliveries under agreements and orders in light industry still does not mean that industry is fully meeting the requirements of the consumer. In keeping with the conditions of the experiment, the fulfillment of the delivery plan by enterprises is determined according to the group assortment. But certain enterprises have not fulfilled the plan for sales and deliveries according to the intragroup assortment, the sizes of items, their age groups, their colors, the color varieties, and certain other parameters which characterize the quality of the items. In connection with this during the first quarter of 1984 alone the consumers refused to pay for 15.7 million rubles' worth of products that were produced by enterprises of light industry in Belorussia. Therefore in the future in the system of evaluation and stimulation of the enterprises there should be greater orientation toward the observance not only of the group assortment, but also of the assignments from trade regarding the age groups, sizes, colorings and other qualitative characteristics.

But on the whole the experimental mechanism for stimulating deliveries has turned out to be highly effective and apparently deserves to be extended to other branches. It can be included in the economic mechanism of the 12th Five-Year Plan.

It must be recognized that the problem of greater orientation of production toward the needs of consumers cannot be resolved merely on the basis of increasing the significance of the indicator of products sales calculated taking into account the fulfillment of agreements and orders. This problem is much more complicated. It requires both increased responsibility on the part of the producers for the fulfillment of trade orders and increased responsibility on the part of trade to the producers for their orders. It is known for example, that trade frequently refuses to accept the goods which it has ordered at the trade fairs. The number of these rejections in the country as a whole has increased sharply in recent years. Trade pays a 5 percent fine to the enterprises for these rejections. This sum is apparently not effective enough, and we should essentially increase the sanctions against trade organizations for their violation of agreements with the enterprises for producing various kinds of goods.

Certain financial levers could contribute to solving the problem of bringing production closer to the real needs of the industrial and nonindustrial consumers. In particular it would be expedient to introduce special conditions for the utilization of profit received from product sales which are not conditioned by delivery agreements and orders. In a number of branches (primarily those operating mainly for the industrial consumer) this profit should be fully deducted into the budget in cases where the enterprise has not fulfilled the plan for product sales taking into account delivery agreements and orders.

Regulation of the Proportions Between the Volume of Consumer Goods and the Income of the Population

The second large shortcoming in the current economic mechanism consists in that it does not provide for the proper coordination and interconnection between the value of consumer goods that are produced and the wage fund that is paid in the national economy, between the effective demand of the population and the commodities to satisfy it. Thus in 1982 as compared to 1975 the production of industrial products (group B) increased by 29 percent, the gross output from agriculture--by 13 percent, and the wage fund paid in the national economy--by 37 percent.²

The formation of such an essential gap between the growth of incomes of the population and the growth of consumer goods has great negative consequences. For better balance of the production of goods and the effective demand, the state was forced to turn to increasing retail prices. The index of state retail prices during 7 years (from 1975 through 1982) for all goods amounted to 108.3 percent, including for foodstuffs--108 percent (not including the change in prices for alcoholic items--103.5 percent), and for nonfood commodities--109.2 percent.³ At the same time the population's deposits into savings banks are increasing. From 1975 through 1982 the residual deposits of the population increased (as of the end of the year) from 91 to 174.3 billion

rubles⁴ or 1.9-fold--with an increase in the wage fund paid in the national economy of 37 percent. During the course of 1983 they increased by another 12.6 billion rubles (the maximum increase during recent years), amounting to 186.9 billion rubles as of the end of the year. With respect to the planned volume of annual retail commodity turnover for 1984 (322.5 billion rubles) they amount to 57.8 percent, which corresponds to almost a 7-month volume of commodity turnover. Naturally, all this decreases the stimulating role of wages to a certain degree and weakens the stimuli for highly productive labor.

During recent years the planned ratio between the growth of wages and labor productivity has regularly gone unfulfilled. Under the 10th Five-Year Plan this ratio, according to the plan, was envisioned in the amount of 0.44, while actually it amounted to 0.69. During 1981-1982 it was planned at the level of 0.63 and actually amounted to 0.85.⁵

There are reasons for this shortcoming in the development of the country's economy. The main one consists in the imperfection of the methodology for forming the wage fund in the branches and in the enterprises. Until recently the formation of the wage fund was oriented toward the number of workers and increasing the average earnings--in keeping with the assignments of party congresses--and it was not sufficiently coordinated with the increase of products that are produced. A most important area for eliminating this shortcoming is more rigid coordination of the amounts of formed wage funds and the final results of the activity which reflect the output of products and their quality. In this sense the economic experiment in four out of the five branches of industry envisioned a principally new mechanism for the formation of the wage fund. It was envisioned that the wage fund be formed as the sum of two elements--the base wage fund at the level of the preceding period and the increase in the fund calculated according to the normatives for the increase of the wage fund for each percentage of growth of the volumes of output. And only in heavy machine building was it envisioned that the wage fund be formed according to the normative of wages per 1 ruble of the overall volume of output (and not just its increase) as was envisioned by the decree of the CPSU Central Committee and the USSR Council of Ministers, "On Improving Planning and Stepping Up the Influence of the Economic Mechanism on Increasing the Effectiveness of Production and Improving the Quality of Work," of 12 July 1979.

The new experimental method for forming the wage fund--according to the base fund plus the increase in the fund for the increase in output--seems fairly progressive at first glance. Under it the enterprises receive a stable reliable base for the formation of the wage fund--no lower than the level of the preceding year (under the condition that they achieve the previous volumes of production). At the same time the possibilities of increasing wages are conditioned by the actually achieved increase in output. There are cases of rejection of the practice of forming the wage fund according to the planned level of the indicator. When forming the wage fund the plan no longer has the previous significance. The amount of the wage fund is determined by the actual volume of output of products during the new year. The positive aspect of this method is the fact that with it the enterprises no longer have a need or a desire to be constantly adjusting the plan, since this is not giving any attention when forming the actual wage fund.

The first experience in the operation of enterprises of the BSSR Ministry of Light Industry under the new conditions for the formation of the wage fund produced good results on the whole. For example, according to data for the first half of 1984, BSSR light industry produced a relative savings on the wage fund in an amount of 2.2 million rubles while the planned wage fund was for 154 million rubles, that, is the savings on the wage fund amounted to an average of 2.2 percent for the ministry.

But it would be premature to assert that these essential successes were conditioned by the effect of the new method for forming the wage fund alone. The more so since during the first half-year the enterprises had still not properly experienced the new methods. To some degree the great savings are the result of the fact that the enterprises did not fully utilize the extensive rights granted to them for spending the wage fund, and they manifested increased caution in this, afraid of allowing even a random overexpenditure of the wage fund. To a certain degree such a large savings on the wage fund could also be the result of the enterprises' utilization of the right to distribute their annual wage fund themselves among the various quarters, a right which they also took advantage of when they envisioned for the first quarter a higher (as compared to other quarters) planned amount of the wage fund.

A deeper analysis of the experimental methods for the formation of the wage fund gives justification for asserting that it has not only positive aspects, but also shortcomings. They consist in the following.

In the first place, the stable normatives (and they are regarded as an important merit of this method) are used to form only part of the increase in the wage fund, and it is a miserly proportion of the overall planned wage fund (on an average for enterprises of the BSSR Ministry of Light Industry according to the plan for 1984 it amounted to only 1.1 percent with the planned increase in production volume being 5.5 percent). According to the results of the work during the first half of 1984, the actual increase in the volumes of production amounted to 5.6 percent as compared to the first half of 1983, which gave the enterprises only a 1.7-percent increase in the wage fund. Therefore the role of these stable normatives is extremely insignificant.

In the second place, the new methods retain almost all of the shortcomings of planning from the level achieved. An exception is the fact that the experiment envisions a rule whereby the savings on the wage fund achieved by the enterprise in the base year is added to the actually expended fund (when determining the base fund for wages of the enterprise in the new planning period), and the sum of overexpenditure is subtracted from the base wage fund. This provision is progressive and quite justified from the standpoint of strengthening the principles of cost accounting. Retaining the aforementioned shortcomings means that when forming the wage fund according to the base (and this part comprises the majority of it) the ones that end up in the best position are the enterprises which have had the worst indicators in the preceding planning.

The conditions of the experiment envision adjusting the base wage fund taking into account the dynamics of labor productivity. In the provisions concerning the formation of the wage fund it is envisioned that the base wage fund be retained in the event that during 1980-1984 the average rate of growth of labor productivity is no less than the average growth rate during 1979-1983. This condition causes principle objections. In essence the difference in the average growth rates of labor productivity during the indicated periods is formed by differences in the growth rates of labor productivity in 1979 and 1984. But one thus ignores the reasons for the differences in the growth rates of labor productivity during these years. And, after all, these rates can differ in various years for reasons that do not depend upon the enterprise. They can be the result of differences in the rates of updating of equipment, in the amounts of capital investments or in the increase in the capital-availability for labor. It is not impossible that in the preceding period the enterprise had higher rates of updating of equipment, and in 1984 they had none. But the methods require retaining the previous high rates of growth of labor productivity. Thus enterprises which have had large successes in the preceding period are placed in a disadvantageous position.

Even during the course of the experiment an adjustment was made in the supplements to this rule. It envisions that if the growth rates of labor productivity during the planning period are lower than those during the preceding period but the enterprise reaches the level of labor productivity envisioned by the assignments of the five-year plan for the corresponding year of the five-year plan, the base wage fund is not decreased. But this is a particular case.

And in principle the experimental method of adjusting the base wage fund causes objections. In our opinion, it should be arranged according to different criteria. First of all, one should take into account the differences among the enterprises in the amount of inefficient payments of the wage fund during the base period (for the output of defective products, for paying wages related to nonplanned losses of working time, and so forth) and differences in the level of difficulty of the output norms during the base period for various enterprises. When adjusting the base wage fund one should take into account the differences in the level of the utilization of production capacities and the loading of equipment.

At the present time in all four branches that are conducting the experiment (except for the Ministry of Heavy Machine Building) they have established a fairly small normative for the growth of wages per 1 percent of increase in the output of products (it was established for all enterprises at the level of 0.3-0.35). Light industry and other branches are operating with almost a constant qualitative composition of workers and with a stable number of them. In practice this means that the increase in production volumes is provided only as a result of increased labor productivity. The normative of 0.3 is much lower than the average ratio in industry between the growth of the average wages and labor productivity (in BSSR Light Industry during the first half of 1984 it amounted to 0.61). This normative places in a disadvantageous position those enterprises for which high growth rates of labor productivity are envisioned. The higher the growth rates the more disadvantageous the

position of the enterprise, since for it there is a sharp drop of the indicator of expenditures of wages per 1 ruble of overall volume of output.

What has been presented above makes it possible to express serious doubts that the methods of forming the wage fund currently being tested in four branches (as the sum of the base fund and the increase in the fund for the increase in output) has clear-cut advantages over the methods of forming it according to the previously determined normatives of wages per 1 ruble of overall product output. The application of this method was prescribed by the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 June 1979 and is being implemented in practice in one of the branches which is conducting the large-scale experiment--in the USSR Ministry of Heavy Machine Building. The fact that the methods recommended by this decree have not been extensively and consistently realized in practice still does not mean that it is a "detriment." It is necessary to have a serious analysis of the reasons why these methods did not work and measures must be taken to eliminate obstacles to the application of these methods.

There is also some doubt about the expediency of forming the wage fund according to the indicator of the normative net output (and it is precisely the one that is used in the majority of the branches that are conducting the experiment).

As analysis shows, the utilization of this indicator (like the indicator of commercial output) does not provide the enterprises with equal advantage for producing various items. The difference consists in that when evaluating production volumes according to the normative net output only the structure (set) of the more advantageous assortment changes. At the same time the consolidated data for the BSSR Ministry of Light Industry during 8 months of 1984 show that for the majority of enterprises, when evaluating according to the normative net output, higher rates of growth of production volume are provided as compared to the rates of growth according to the commercial output (they amounted to 106.0 and 104.2 percent, respectively) as well as a higher level of fulfillment of the plan (102.7 and 101.6 percent).

When the volume of normative net output increases more rapidly than the sold or commodity output does this can be evidence of an increasing proportion of more labor-intensive products (which is clearly disadvantageous from the standpoint of national economic interests) or that there is no substantiation for the normative amount of profit in wholesale prices that are used for calculating the normative net output. Additionally, the formation of the wage fund according to the indicator of the volume of output which has the greatest growth creates additional difficulties for the society in regulating the proportions between the volume of commodity mass sold to the population and the wages paid to the workers.

One should keep in mind that the normative net output as an indicator for evaluating the volumes of production practically does not participate in national economic circulation (the enterprises sell products at wholesale prices) and is not reflected in the bookkeeping of the enterprises, and therefore it is difficult (and practically impossible) to control. One can presume that it is precisely for this reason that in the majority of branches

of industry for a number of years indicators of the growth of production volumes and fulfillment of the plan according to the volume of production in normative net output turn out to be higher than these same indicators when calculated in the wholesale prices of the enterprises.

It seems that the question of the most reasonable measure for the volume of production as the basis for the formation of the wage fund needs additional testing and economic analysis.

Increased Effectiveness of the Normative Method of Distributing Profit

The economic experiment is making the third principle change in the methods of distributing profit. It consists in that the object for normative distribution is not the balance profit, but the calculated profit. The enterprises are given stable normatives that are established for the year for dividing the calculated profit between the budget and the internal needs of the enterprise. This way they eliminate independent (various) conditions for the utilization of planned and above-plan profit.

It would seem that all these changes are progressive and rational. An evaluation of the activity of the enterprises according to the calculated profit should, according to the idea, create additional stimuli for efficient utilization of fixed and circulating production capital since the level of their utilization influences the amounts of these funds and through them--the amount of payments for funds and, consequently, the sum of calculated profit that goes in for shared distribution. The distribution of the calculated profit in firm proportions for the needs of the economy and budget should create powerful stimuli for increasing profit. Elimination of the different conditions for the utilization of planned and above-plan profit, according to the intention, will lead to more objective planning of profit and the inclusion in the plan of all reserves for increasing the effectiveness of production and increasing profit. But an analysis of the activity of the enterprises under the conditions of the experiment makes it possible to note a number of negative aspects as well in the mechanism for distributing profit. They amount to the following.

First and foremost the very methods for forming the normative of profit left for internal needs of the enterprise is imperfect. This normative is determined through totaling the planned expenditures of the enterprise from the profit for its own needs which are envisioned according to the financial plan. Thus the enterprises are motivated to include in the plan more items of expenditures from the planned profit. As a result the amount of profit received by the enterprise for its own disposal is determined primarily by the ability of the economic services to draw up plans and to "beat into" the plan the maximum expenditures from profit. Thus the methods for forming the proportion of profit for the internal needs inherently have all the defects of the current system of planning. This is conditioned by the fact that now there are no normatives which would determine how much profit can be used for internal needs.

In the BSSR Ministry of Light Industry as a whole in 1984 82 percent of the calculated profit was to have gone into the budget and only 18 percent was to

be left for internal needs. The amplitude of the fluctuations of the proportion of profit for internal needs for individual enterprises was very great. And this is not coordinated properly with the principles of cost accounting. It is necessary to develop some normative reference points regarding the amount of the expenditure of profit of the enterprises for their own needs.

One more shortcoming in the new conditions for the distribution of profit consists in that the enterprises are not consistently realizing the idea of eliminating the different conditions for the utilization of planned and above-plan profit. In reality it turns out that many items of expenditures in which the enterprise is vitally interested have as their source precisely above-plan profit.

Thus in keeping with the conditions of the experiment it is precisely through above-plan profit that additional deductions are made into the material incentive fund for the proportion of consumer goods of the highest quality category (up to 25 percent of the planned material incentive fund); a financial reserve is created for the enterprises and associations, and so forth.

Consequently, the thesis declared by the conditions of the experiment concerning the elimination of the various conditions for the utilization of planned and above-plan profit in reality disappears into thin air and is not realized. Naturally, under these conditions the enterprises, as before, will not strive to adopt more difficult plans for profit so as to create a reliable source of financing expenditures in which they are vitally interested.

In order to avoid this, as a source for the formation of the majority of the aforementioned expenditures one should establish not above-plan profit, but profit which remains at the disposal of the enterprises (according to their share in the calculated profit which is determined according to the normative established for the enterprise for the distribution of calculated profit).

Finally, one more shortcoming of the experimental mechanism for distributing profit consists in the lack of coordination of the established policy for the formation of funds for internal needs and the possibilities of their utilization.

Now the enterprises which are operating under the conditions of the experiment, having received a significant sum of profit which remains at their disposal according to the established normative, cannot utilize it for deductions into the economic incentive funds (in excess of the established normatives) or for financing capital investments (in excess of the established limit). And these are the main items of expenditure of profit for the internal needs of the enterprises and associations. It turns out that the economic units, as a result of their successful operation, can receive considerable sums of financial means, but they do not have any real rights to utilize these funds completely. In a number of cases these funds remain unused and the ministry, after a year has passed, has the right to remove them in the form of surplus internal circulating capital.

Therefore we consider it expedient to determine the amounts of the economic incentive funds and the funds for financing capital investments in proportions of the profit which remains for the internal needs of the enterprises and associations. Thus a real motivation will be created for the production collectives to increase profit: the enterprises will be given a real opportunity to increase expenditures on material incentives for the workers, technical re-equipment and the development of production as well as housing construction as the profit increases. Then the rights of the enterprises and associations to increase their own financial resources will be directly coordinated with the possibilities of utilizing them.

In almost all of the branches that have been changed over to the conditions of the large-scale economic experiment, fairly good results have been achieved from their economic activity. But it would be incorrect, in our opinion, to relate these good results completely to the effectiveness of the new elements which are contained in the experimental economic mechanism. We must not forget that to a considerable degree the successes of the enterprises of these branches are conditioned by the creation of preferable management conditions for them (as compared to other branches). It is known, for example, that enterprises of the BSSR light industry have been changed over to guaranteed comprehensive material and technical supply. They are given preference with energy and transportation service. The bills from these enterprises are the first to be paid. Increased attention has been paid to light industry by all Soviet, party and planning agencies of the republic, and this is also significant for increasing the result. All this impedes an objective evaluation of the effectiveness of the methods of management that are being tested.

Thus the new economic mechanism that is now being tested in five branches of industry requires further improvement. The possibility of changing individual points of it has been envisioned by the introduction in these branches of methodological provisions and normative acts: at the end of each of them it is written that they can be refined and changed taking into account the work experience that has been accumulated. And we should take advantage of this opportunity. This is necessary for developing a maximally effective economic mechanism for the 12th Five-Year Plan.

FOOTNOTES

1. Sukhachevskiy, V., "Shortages When There Is a Surplus," IZVESTIYA, 9 June 1983.
2. The USSR National Economy in 1982. Statistical Annual of the USSR Central Statistical Administration, Moscow, "Finansy i Statistika," 1983, pp 38-39.
3. Calculated from data of the Statistical Annual of the USSR Central Statistical Administration, "The USSR National Economy in 1982," p 441.
4. Ibid., p 414.

5. Kostin, L. "Productivity and Wages," PRAVDA, 9 September 1983.

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SVERDLOVSK YOUTH HOUSING COMPLEX DESCRIBED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 43-44

[Introduction to articles that follow: "We Build the Home--The Home Builds Us"]

[Text] At the February (1984) Plenum of the CPSU Central Committee General Secretary of the CPSU Central Committee K. U. Chernenko said: "To be able to promptly support and see the popular initiative...--herein is our greatest, one might say, inexhaustible reserve of our progress.

"To manifest more independence at all levels, to conduct research boldly, and to take a justified risk, if necessary, on behalf of increasing the effectiveness of the economy and improving the well-being of the people--this is what we expect from our management personnel."

An example of this kind of research and this kind of initiative is the social experiment in comprehensive solutions to youth problems which was begun in Kaliningrad in Moscow Oblast and has been further developed and deepened in Sverdlovsk.

It includes:

the construction of housing and facilities for social, cultural and domestic purposes for youth through the forces of the youth themselves;

the organization of a youth collective in the place of residence;

the creation of conditions for developing an active position in life for its members;

a system of education of children which envisions their harmonious development and comprehensive preparation for their future labor and social activity.

Structures similar to youth housing complexes (MZhK) make it possible to solve a whole number of problems which are facing youth. It is expedient to apply them during the reconstruction of enterprises and during new construction in remote regions.

The materials presented for your attention discuss the Sverdlovsk youth housing complex.

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NEED FOR ADDITIONAL HOUSING CONTINUES

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 44-52

[Article by Leonid Treyer: "Unplanned Initiative"]

[Text] As we know, a good deal of housing is being constructed in our country. Another thing is also known: so far the waiting lines for apartments are not disappearing. We shall not list the factors that impede the development of the construction industry. We shall leave this subject to the specialists. We have become accustomed to a situation in which any problem must be solved by professionals and this, of course, is correct. But life sometimes gives fruitful ideas to people who are certainly not specialists. Our discussion will be precisely about such "unplanned" initiative.

At the beginning of the 1970s the youth of Kaliningrad near Moscow were the first in the country to construct a youth residential complex (abbreviation-- MZhK) with their own hands. None of the young people were professional builders--they had all temporarily left their laboratories and shops. In 1977 the creators of this complex were awarded the prize of the Leninist Komsomol. There is nothing surprising in the fact that it was precisely young people who had the idea of building their own home for themselves. For the waiting list for an apartment depends a great deal on length of labor service, but the desire to have housing has nothing to do with the length of service. The path suggested by the Kaliningrad workers can, of course, be criticized. One can even recall the classic phrase of Il'f and Petrov: "To save drowning people is a matter for the hands of the drowning people themselves." But still this was a realistic solution. We repeat: the idea of the MZhK did not originate from a good life, but it produced surprisingly results. As they say, there was no happiness but the unhappiness helped.

The example of the Kaliningrad residence inspired people living in Sverdlovsk, and then people from Kazan, Leningrad and Novosibirsk...we shall discuss "how this was done in Sverdlovsk." Only let us recall that the experience in creating the MZhK is individual for each city. To follow the "trail blazers" step by step, avoiding creative search, would probably be a mistake.

And so, the place is Sverdlovsk and the year is 1977. Recent graduates of the Ural Polytechnical Institute, having read in KOMSOMOL'SKAYA PRAVDA the article about the Kaliningrad experiment, began to act. There were very few of them at that time but all of them had gone through the school of student construction detachments (from rank-and-file enlisted men to commanders and commissars). This was not simply a line from their biography. The work in the construction detachments accustomed them to independence, initiative and persistence. The idea of creating an MZhK attracted them by virtue of the fact that it was not traditional and that it was a large project. It required large reserves of social energy. Nature has bestowed this energy generously on young people. So the seeds of the MZhK fell on favorable soil in Sverdlovsk.

Any new matter inevitably encounters resistance. It takes time and persistence in order to prove the advantage and usefulness of an innovation. The young people were quick to understand that they would get nowhere with requests alone. They learned their first lesson in Glavsreduralstroy where they turned for assistance. "This is not a conversation," was the answer they received in the main board, "first show us the plan for your residential complex. Then we shall talk!"

A year had not passed before the necessary plan was on the desk of the chief of the main board. They looked at the young people with interest. From that moment on the main board became their ally. We shall not overestimate the role of the plan that was drawn up on the spot. Intelligent builders found their own interesting aspects in the idea of the MZhK: an influx of labor force which the construction organizations needed so much. And the MZhK builders found two more allies--the construction division of the CPSU obkom and the gorkom of the Komsomol. They supported the idea both in word and in deed.

Next it was necessary to select enterprises which were willing to become shareholders and release their people for the construction of the MZhK. Here the reader will inevitably begin to doubt: what plant director will voluntarily part with a machine tool operator or, say, a technologist for almost a year? But now imagine--they do this! Because they know: even his favorite job cannot hold a specialist if he does not have an apartment to go home to. And it is better to let go of him for a year than to lose him altogether. Moreover, young people from the organizing committee of the MZhK proved that the temporary departure of the worker for the construction site would not only not harm the enterprise, but would even produce an advantage for it. This assertion, which seems paradoxical at first glance, shall be explained below.

Five enterprises and the Ural Polytechnical Institute were selected to participate in the creation of the MZhK. The shareholding organizations were allotted their shares, which were registered in the housing construction combine. The combine became both a client and the general contractor for the MZhK. Possibly, this was far from the best variant since the youth complex immediately became strongly dependent on the housing construction combine. But at the moment there were no other alternatives.

Subsequently, it would seem, everything would be simple and clear. The youth in need of housing would leave their home enterprises for 9 months and become builders. But the number of people wanting apartments considerably exceeded the demands of the construction project. How could this be? The organizing committee prepared for this problem ahead of time. It was decided to select the future fighting men for the construction detachments according to the results of socialist competition. I can see in advance the skeptically raised eyebrows of the readers who are familiar with examples of "competition for points." No, dear reader, the Sverdlovsk young people did not arrange a "point system." They were able to organize a real competition at the enterprises, one in which the youth believed and in which they agreed to participate. For the criteria that were developed were clear-cut and objective. The system of evaluations embraced both the production activity of the applicant and his social activity and also his participation in the affairs of the MZhK. Each month each participant in the competition became familiar with the "preliminary results." It is also important that the system of evaluations is not something that is stagnant and ossified--it is constantly being improved. For information we note: since 1978 about 7,000 candidate members of the MZhK have participated in socialist competition. The managers of the enterprises have been convinced through facts of the effectiveness of the selection system that has been developed. The youth, striving to get into construction detachments, are constantly overfulfilling their planning assignments. Labor and production discipline have increased and labor turnover has decreased. In a word, the losses associated with the departure of the worker for the construction of the MZhK have been covered by acquisitions.

I was interested in something I heard in the organizing committee: "And if the director of a shareholding plant by an arbitrary decision includes a 'needed individual' on the list of winners of the competition? What then?"

"This has already happened," answered Zhenya Korolev, the chairman of the organizing committee. "This does not get past us!"

And another question which is, as it were, suspended in the air. What happens to those people who do not end up in the construction detachment? The answer is simple: they continue to compete since there is no limit to the number of tries.

Two months before the next detachment goes to the construction site all members who do not have a construction specialty are trained without leave from production in the Glavsreduralstroy training combine. The formation of the detachment ends with the formulation of contractual commitments with each member for obtaining dwelling space according to the existing norms. Moreover, at the shareholding enterprises orders are issued concerning sending workers to construction while they retain (after they have returned from the detachment) their previous salary. The members of the detachment receive their wages at the place of temporary employment in the construction organization.

And so the Komsomol youth detachment is ready to go out to the object. How and where is it used? Most frequently in less interesting work that does not

require great skills, in brief, in places where there is a critical shortage of working hands. The young people are prepared for the crowbar and spade ahead of time and they work with them conscientiously. Their conscientiousness gladdens the construction workers and sometimes it is as though the detachments are turned into a fire team which is sent from one "burning" object to another.

In the opinion of the managers of the organizing committee with whom I had occasion to speak, the MZhK workers should be used more effectively, enlisting them more extensively for solving complex technical problems. In the first place, the selection system brings the most intelligent and efficient workers to the MZhK detachments. In the second place, enlisting in a detachment does not mean the end of the competition. The best detachment is given the right to select the area in which it will settle. And socialist competition also develops within the detachment: who receives apartments on which floor depends on this competition. There is no "equalization" here, but there is encouragement for activity, initiative and a creative approach to the matter. In the organizing committee I heard a phrase which is worthy of attention: "Man constructs a home and the home constructs the man!" One sees the most efficient view which is necessary in any work and especially in construction. There are plenty of examples! The MZhK members saw a bulldozer abandoned in an empty field. It looked terrible, but still it was technical equipment. They found the owners and asked if they could have it. The owners were surprised by their interest and they thought about it and let it go for the cost of the same quantity of scrap iron. The young people refurbished the bulldozer and it served them well for several years.

You know what is produced by the work of the MZhK members in the construction detachment? Yes, an apartment. But that is not all. They have that same feeling of comradeship which suits them so well when they all move in together into the new building.

Up to this point our discussion of the MZhK has been limited to solving the housing problem. The reader has probably formed the opinion that the main thing in this idea is to construct an apartment for themselves. I admit that this is what I thought too before I traveled to Sverdlovsk. The role played by housing in man's life is understandable to everyone. But it turned out that the idea of the MZhK is much deeper and more serious than it seems to be at first glance. The "founding fathers" of the MZhK see their main goal in the creation of a new nontraditional attitude toward living. And they consider their idea to be primarily a social experiment. Not a construction experiment or, say, an economic experiment, but precisely a social experiment. And the essence of this experiment which is being conducted in Sverdlovsk can be expressed briefly as follows: "the formation of an active position in life for members of the MZhK."

The participants in the experiment themselves will discuss this in greater detail. I shall not describe in detail how the collective self-management is carried out in the place of residence. The Kirovskiy Rayon soviet of people's deputies has created a coordination council. Along with the organizing committee of the MZhK it handles problems of material support for the complex, its financial activity, the formation of a personnel staff for various

services, and the registration of organizational and legal documents. All the other functions (cultural-educational, management, maintenance of public order) are performed by the public council of the MZhK. More than one-third of the residents in the complex participate in its work. The daily life of the complex and the leisure of its population depend largely on the activity of this council. The MZhK is located in a new microrayon where there is still some difficulty with consumer services. In order to send footwear out for repair, for example, it was necessary to take the bus in search of a shop. Through the efforts of the MZhK council they managed to "scare up" a comprehensive receiving point for which they allotted a five-room apartment in one of the buildings of the MZhK. Here they accept things for dry cleaning and washing, they repair footwear and all this is nearby, a couple of minutes' walk from the apartment of the client. Understandably, such a point saves the residents a good deal of time. The organization of a table for orders where one can purchase necessary groceries after work is also the concern of the council. And then there is the children's medical combine which has relieved mothers of tiring trips to the rayon polyclinic! And a point for renting household equipment! To some degree all of these measures are temporary--but still they are solving the most important problems. In the next 2 years it is planned to construct a trade and service center which will include stores, department stores, a dining room-cafe, a communications division, a consumer service combine, and other services.

Well-thought-out organization of daily life has made it possible for the Sverdlovsk MZhK residents to obtain a great deal of free time. But it can be used in various ways. One can, as they say, kill time doing nothing. This is an easy path and deserves no attention. There is another, much more difficult, but interesting variant: to turn leisure into the basis for the harmonious development of the personality. To do this, the leisure must be creative in nature. This is precisely the task that is being resolved by the council of the MZhK. Even now in the complex there are active clubs of amateur musicians, tourists, movie lovers, a movie-photo-slide club, a sports club, a club for women and a club for radio amateurs. So far the material base of the clubs has not reached the desired level, but still they are visited by 22.5 percent of the residents of the MZhK.

Another main area of the work of the MZhK is conducting mass measures. These include discotheques and sports tournaments, tourist flights, summer festivals, meetings with movie directors and writers, and children's holidays. It would be necessary to write a separate article on how living in the new building has been arranged here. It is important that all the measures have been organized taking into account the interests of the adults and children and that they are conducted directly at the place of residence.

The MZhK members have a right to be proud of their "path of health," which has been constructed in the Shartash Forest Park which is adjacent to the complex. Hundreds of Komsomol members of the rayon responded to their appeal, and as a result of their joint efforts during one summer there appeared a lighted sports track almost 3 kilometers long. Every 300 meters they have installed sports apparatus where one can "pump up one's muscles." In the evenings lovers of physical culture and jogging hurry along this path.

In these brief remarks I shall not try to include all aspects of the life of the Sverdlovsk MZhK. But there is one subject which not a single author writing about a youth complex would bypass. We are speaking about the children. About the education of the generation with which the future of the experiment is associated. In the MZhK they have not begun to put off work with children "until later." From the first days of the existence of the complex a well-thought-out system of education went into operation, which combines family and public forms. Professional educators and enthusiasts from among the parents work in it. The children have the opportunity to engage in technical creativity, sports, music and choreography. But the groups and sections are not oriented only toward discovering progenies--their doors are open to all children. Here is what is important: adult and children's clubs are solidly linked to one another.

As the young MZhK members grow up, the educational problems will be more complicated. Understanding this, the organizing committee and the council of the MZhK are hurrying to carry out a plan which should play a key role in the educational work. We are speaking about a school complex for 2,500 pupils. Both in terms of architecture and in terms of "content" this will be a unique school. Imagine, reader, two individual blocks with 33 classrooms in each: in one block--the younger classes, and in the other one--the older ones. In essence this is two individual schools which are adjacent to the public center of which they are a part: The child-youth sports base, the station for young technicians, an assembly hall to accommodate 500 and a school of the arts. Moreover, according to the intention, it will be possible for both the pupils and the adult population of the microrayon to use the facilities of the general school center, which will provide for full loading of the complex.

I do not know whether or not the Sverdlovsk residents will be able to fully carry out this plan, but what I saw "on paper" literally impresses the imagination. They hope to construct this school in the next 3-4 years....

Let us sum up the preliminary results. Since the time the cornerstone was laid in the MZhK they have released four buildings and a dormitory for small families, they have constructed two children's combines (to accommodate 320 each), a children's polyclinic and a station for young technicians. In the future there are another six multistory buildings, a trade and services center and a school complex. Does this mean that the path of the Sverdlovsk members has been strewn with roses? Alas, like everything that is new, the idea of the MZhK undergoes the test of its viability and its "seaworthiness" almost every day.

There are also inevitable attempts to encroach upon the apartments in the MZhK. The existing situation with respect to allotting 40 percent of the dwelling space for various organizations does not take into account the specific features of the MZhK, whose detachments are building one apartment for "themselves" and one for the city. In the second place, the existing norms and rules for the construction of facilities for social, cultural and domestic purposes do not take into account the youthful composition of the residents, the large number of children and those new social tasks which the MZhK faces. In the third place, managers are tempted to squeeze "a little more" out of the young construction detachments: first, every member was to

work 9 months, and now the norm has been increased to 11 months and they are talking about 18 months. The most important thing which the Sverdlovsk experiment needs today (and not just the Sverdlovsk experiment) is the insurance of normal conditions and the elimination of artificial barriers. For the path traveled by the MZhK collective is a path of denying a consumerist attitude toward life--which is extremely important for each of us and for the society as a whole.

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EXPERIMENT IN COOPERATIVE LIVING DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 53-66

[Article by G. N. Karelova, candidate of economic sciences, deputy chairman of the organizing committee of the MZhK, Ural Polytechnical Institute (Sverdlovsk): "The Experiment in Itself"]

[Text] Imagine the people who are just moving into a new building. Each of them has his own way of life, his own habits and, perhaps, his own peculiarities. All this bears the mark of the traditions of the building and of the section where the individual lived before moving. As a rule, new residents have not become accustomed to living in friendly cooperation and being as concerned about their neighbors and their children as they are about their own family. The social activity of the place of residence is not a very widespread phenomenon. And on this initial basis in the MZhK it is necessary to create a collective in the place of residence and to overcome the psychological barrier before the organization of the nonindustrial life activity of the people who are living in the complex.

A predictable consequence of modern social processes is the effect of two tendencies in the large city. The first of them is the desire for community. It is manifested in all groups of the population, especially among youth, and it is conditioned by a whole number of factors and, of course, the social consequences of urbanization. In a large city traditional ties of neighborship which are typical of the village or small city have been destroyed.

The other tendency is the desire for isolation. The rhythm of the life of the modern enterprise and the city as a whole causes fatigue and there is a quite justifiable need to be alone. The individual seeks satisfaction of this need in his own home. The desire to be alone and to separate oneself is also generated by the growth of the overall culture of the population: a person must have time for studies, reading, individual amateur creativity, watching television and other activities. Young families are interested in separating themselves in order to have the opportunity to tend and educate their children. Under the conditions of the city the tendency toward community is the most unsatisfying. This can lead to stress and sometimes to increased social passivity and individualization.

Therefore we consider one of our main tasks to be the creation of conditions for both community and for solitude (separation) of the individual. In this connection there arises an objective need to form a collective of residents.

The organization of the life activity of the MZhK is complex, lengthy, and it does not always produce an appreciable effect immediately. It is also very difficult to enlist residents in this process.

A sociological analysis of the candidates for membership in the MZhK showed that initially they were oriented only toward improving their living conditions. Thus a year after the appearance of the idea of the MZhK (in 1978) 82 percent of the candidates expected an apartment from the complex--and nothing else. But we planned the economic and social effect ahead of time.

The organizing committee of the MZhK singled out three periods in the social experiment: the organizational or preparatory period; the construction period; and the functioning of the complex. During the organizational period they combine the efforts of young architects and sociologists, lawyers and builders, educators and planners. A program is worked up for the functioning of the youth complex, its regulations and the regulations of the Komsomol-youth construction detachment. The construction site is determined and questions of financing planning and construction work are coordinated.

When solving organizational problems there was an extremely intensive process of forming an active life position for all those who had contributed to the establishment and development of the social experiment in the MZhK. This included every fifth candidate for membership in the youth housing complex. After the aktiv was formed, work was started on educating future residents of the complex. They were familiarized with the idea of the MZhK and its tasks. We consider informing the candidates to be a most important condition for their preparation. In each subdivision of the enterprises participating in the construction there is an information stand through which the candidates are regularly informed of the activity of the organizing committee, the staff of the construction site, and the Komsomol youth construction detachments. In parallel members of the lecture groups of the MZhK of the enterprises give lectures and conduct conversations with the candidates concerning the most important issues of planning, construction and functioning of the complex. Members of the organizing committee are always speaking before the candidates.

The theoretical training of the future residents is a necessary condition, but far from the main one. It is important for each person who desires to live in the complex to have a collectivist psychology, interests and views. Long before the appearance of the first building candidates for membership in the MZhK begin to participate in work Saturdays at the projects not only of the housing complex, but of the city. These work Saturdays bring the members of the collective together and allow them to get to know one another. For this same purpose they conduct evening get-acquainted parties and creative meetings. It was precisely in this stage that the first traditions of the MZhK originated.

Table 1--Social Passport of Youth Residential Complex
Demographic Structure

	<u>June</u> <u>1982</u>	<u>June</u> <u>1983</u>	<u>Prediction</u> <u>for 1984</u>
Overall number of residents	751	1750	2660
Overall number of families	228	501	780
Including nuclear,* %	98	97.5	98
Number of children under 16	312	704	1020
Including ages:			
from 0 to 3 years		278	
from 3 to 7 years		284	
from 7 to 10 years		98	
from 10 to 14 years		38	
over 14 years.		6	
Number of adult residents	439	1046	1640
Including ages:			
from 18 to 22 years		3.2	
from 22 to 25 years		15.7	
from 25 to 30 years		46.2	
from 30 to 35 years		31.0	
over 35 years.		3.9	
Men, %	48	46.7	46.6
Women, %	52.0	53.3	53.4
Average age of children, years	4.2	4.5	4.8
Average age of adults, years	28.7	28.6	29.2
Average age of men, years		29	
Average age of women, years		28.1	
Average age of residents, years	18.5	18.9	19.5

* Nuclear families are those without grandmothers and grandfathers.

Another task of the preparatory period is to study and analyze the collective, its features and its peculiarities. We are convinced that knowledge of the social image of the future residents is already half of the success of the education process for the place of residence. The development of the social passport of the collective of residents, especially of new rayons, is a requirement of the present day. Having created such a passport, we have the opportunity to be oriented toward a completely determined composition of residents and to concretize the forms of our work. Having studied our contingent we saw that the MZhK is essentially a visual illustration for all of the youth problems of the present day. It is theoretically difficult to measure the level of development and solve use problems, to find base figures for the numerous models of the comprehensively developed individual, the ideal young family and so forth. It is necessary to conduct an experiment in order to test the quality of the model and to try out the entire system of forms of communist life, organization of the leisure of youth and education of children that are adequate to improving the entire system of production relations. Such an experiment can hardly be carried out under the traditional conditions of the life activity of people. The MZhK makes it possible to arrange such an experiment.

The expediency of regular sociological analysis consists in that one can obtain material which makes it possible to control and regulate the training of candidates and also study their sociopolitical and production activity. According to the results of each investigation recommendations are developed: how to improve the competition of candidates for the right to be members of the Komsomol youth construction detachment, how to improve the work of the staffs of the shareholding enterprises, and so forth.

Table 2--Social Structure of MZhK Residents, %

<u>Social position</u>	<u>June 1982</u>	<u>June 1983</u>	<u>Prediction for 1984</u>
Workers	29.6	41.4	43.0
Engineering and technical personnel and employees	70.3	56.4	55.0
Junior service personnel	0.1	2.2	2.0

Table 3--Educational Levels of MZhK Residents, %

<u>Education</u>	<u>June 1982</u>	<u>June 1983</u>	<u>Prediction for 1984</u>
Incomplete secondary	1.8	2.4	2.2
Secondary	48.4	25	22
Specialized secondary	1	32.7	32.3
Incomplete higher	3	4.9	3.5
Higher	46.8	35	40

The result of all the preparatory work should be the awareness by each candidate that the MZhK is not simply an apartment. The MZhK is one of the forms for struggling for a new life, for a collective which is capable of solving many social problems using the principles of self-management.

Do the candidates understand this? As one of the main reasons for participating in the MZhK the youths give: improvement of housing conditions--62.5 percent of those questioned; the realization of the children's program--25.0 percent; the implementation of the social program--37.5 percent; the desire to live in a youth collective--43.7 percent; and the construction of an experimental school--3.1 percent.

From the data that have been given it is clear that the basic motive for participating in the MZhK is improvement of housing conditions. And this is quite natural. It is important that for the majority of candidates this is not the only motive. It is extremely difficult if not generally impossible to remake a person who is older than 25. Our task is to motivate and incite the main mass of candidates received informational preparation for the MZhK and from these select the ones who are prepared to participate actively in the experiment.

Table 4--Production Activity of MZhK Candidates and Members
of Shareholding Enterprises

	<u>1981</u>	<u>1982</u>	<u>1983</u>
Fulfillment of production plan, %	114.5	117.2	116.6
Number of efficiency proposals and inventions submitted (per 100 people)	16.2	13.1	7.0
Number of shock workers of communist labor, %	52.9	50.0	51.8
Incentives for high production indicators (Bulletin Board of Honor, certificate, orders), %	31.1	52.1	43.0

The second stage in the preparation of the future residents is the work of the detachments of the construction site. The winners of the competition for the right to be members of the Komsomol youth construction detachment participate in the construction. The detachment becomes the area where friendly contacts, attitudes of mutual assistance, creativity and collectivism are formed. From the detachment these attitudes are "carried over" into the home. The more since the buildings of the MZhK are inhabited according to detachments. The distribution of the dwelling space is done in keeping with the existing legislation. The quality of the apartment (the floor and the layout) received by the member of the KMSO is determined by the position he occupied in the intradetachment competition. The results of the competition are established by a general meeting. After the first buildings of the MZhK were inhabited there was not a single complaint.

Thus our buildings are distinguished primarily by the fact that their residents constitute a unified collective which is already welded together during the process of joint work. This solidarity is also the result of the political and educational work with the members. In the detachments they regularly conduct lectures, conversations and meetings with members of the staff, the council and the organizing committee and collectives of the clubs. Their goal is not so much to become familiar with the details of the current affairs and programs for the future as to make the members active participants in the discussions of the results of the work and to include them in the process of the life activity of the MZhK.

About 3-4 months before the end of the work of the detachments an initiative group is created for the next new building. It forms all the areas of the activity, enlisting the consolidated collectives of Komsomol youth construction detachments. The families of the members also participate in this work. Excursions to the complex are organized for them. They participate in all measures of the detachment and the collective of the MZhK. The children's commission of the council arranges celebrations for the children. Thus step by step the family members enter the collective of their future home, and along with the building human relations are also constructed among those who will live in this building. Thus even in the detachments the members experience the essence of the social experiment. We formulate it thus: the creation through our own hands of conditions for full-value and

multifaceted development of the best features of the individual: collectivism, communicability, and an active attitude toward life.

The first results of this preparation of the future residents of the building are received immediately, during the difficult period of adaptation and building up of the area. Sociologists have long been considering how much time it takes a family to get used to a new apartment. It is clear that it takes a lot of time. For approximately a year the residents are nailing things on the wall, hanging and rearranging things. This is a year of complete separation and isolation of the family, mainly its adult members. After this someone will have a desire to make closer acquaintances. But there is not yet a stereotype of life in the building, and it is hardly possible to radically change it. In the majority of cases the new residents arrange their life precisely according to this pattern.

In the MZhK, because of the large amount of preparatory work and also the mobility of the collective, one does not find such a clearly expressed situation. Moreover, the collective of the youth complex even in the first days, which are most difficult from the standpoint of adaptation, have proved itself fairly convincingly. Each family has worked for approximately 100 hours on building the children's combine. The residents have landscaped the yard and decorated the public areas. Interfamily cooperation has appeared and public self-management is constantly developing. And this is already a basis for expanding the principle of collectivism and mutual assistance in the sphere of life and education of children.

The third period is the functioning of the complex. A successful beginning does not mean success of the entire process of the life activity of the complex. It is necessary to have purposive work on the part of the MZhK council and its activists for further development of the collective of residents. And it is extremely complicated to enlist them in work at their place of residence. Evidence of this is the varying degree of participation of residents in the affairs of the complex: from high activity (42 percent) to passive observation (10 percent).

It is precisely during the time of familiarization with the ideas of the MZhK that the main thing is established--the orientation toward an active living position in the sphere of life, leisure and education of children. Therefore this period begins with familiarization and discussion of the programs--children, culture, sports and so forth. It is very important to make the listeners participants in the discussion. Of course, this is not enough for the familiarization. One picture is worth a thousand words. Therefore in the initial stage we invite the families to participate in our measures, each of which we try to make interesting, full of content and useful. If this is the way it turns out the family comes to the second meeting of its own accord. We have accumulated a considerable amount of experience in conducting mass measures. Among them are the celebrations which everyone recalls for issuing orders and keys, housewarming parties, the new year, the fall ball, and the section festivities.

Table 7--Turnover of Personnel Among Candidates for Membership in MZhK
Condition of Labor, Production and Public Discipline (1983)

	<u>Candidates for Membership in MZhK</u>	<u>Average for enterprise</u>
Personnel turnover, %	3.1	12.4
Number of unexcused absences, tardiness and early discharges from work (per 100 people)	2.1	7.89
Number of punishments for an unconscientious attitude toward work (per 100 people)	1.42	11.1
Number of violations of public order and reports from the police (per 100 people)	0.1	1.00

Ask the young people if they enjoy attending the so-called mass measures. And you will hear "no" more frequently than "yes." And we ourselves know how uninteresting are these recreation evenings which have all become so much the same. First there is the festive part and the concert, and then come the buffet, dances and entertainment. Can it really not be changed? It can. And we tried to prove this 4 years ago when our buildings were still on paper. We held our first party in the house of culture of the Verkh-Isetskiy metallurgical plant. It was based on multifunctionality. Those who wanted to could ask questions of the organizing committee about the essence of the MZhK, its tasks and the prospects for its development. In other rooms there was a discotheque, meetings with interesting people, amateur films were shown, or people simply talked. Thus there was no pressure on those in attendance and they could relax in whatever way they wished to. The freedom of choice, which always impresses youth, the desire to communicate and the desire to learn something new--all this provided for the success of the evening. Even now when we conduct general measures we recall this and take it into account. Perhaps this is why the mass measures are one of the most effective forms for enlisting the residents in our common affairs which, to be sure, are more frequently everyday affairs than festive ones.

The next stage of the enlistment of residents in the life activity of the complex presupposes their direct participation, initially, as a rule, simple, short-term participation, like temporary instructions. Nothing is so effective at stirring up activity as one's own participation. The residents supervise in preschool clubs and in the yard area, they are enlisted to conduct morning exercise sessions, and so forth. This is all simple and the majority of people agree willingly and perform their functions excellently. Although even here one can encounter a lack of understanding and indifference.

Incidentally, now, when the complex has been in existence for more than 2 years, one no longer hears refusals. What is this? Probably both a habit and a sense of embarrassment about refusing, and a desire to participate in the life of the complex. There are only two or three families in each section who have a desire for solitude.

Table 8--Social Activity of MZhK Residents

	<u>June 1982</u>	<u>June 1983</u>	<u>Prediction for 1984</u>
Engaged in public work at place of employment			
Permanently	51.7	58.3	60
Episodically	12.0	21.5	22
Engaged in public work at place of residence			
Permanently	32.3	42.8	44
Episodically	24.3	40	41

Table 9--Structure of Leisure of MZhK Residents As Compared to Average Figures for Sverdlovsk

	<u>Young families of Sverdlovsk, %</u>	<u>MZhK Residents, %</u>
Watch television	77.1	89.5
Read books, newspapers, magazines	81.5	99.8
Engage in sports, tourism	27.3	58.9
Hobbies	15.8	61.1
Engage in artistic activity	4.9	1.3
Go to movies	78.0	49.8
Go to the theater, concerts	41.0	40.4

And, finally, the third stage. It must be characterized by the establishment in the members of the MZhK of an active life position with respect to everything that takes place in the complex.

In the MZhK a great deal of attention is devoted to the young family. An analysis of the time budget of the residents showed that they, primarily the women, are overloaded with housework. According to our research, the average expenditures of time on housework by workers of enterprises of Sverdlovsk Oblast amount to 20.2 hours a week. They are higher in the MZhK and amount to 24 hours.

In order to improve their budget of time, we have created a comprehensive receiving point, and the kinds of services offered in it are determined by studying the needs of the residents. They include shoe repair, dry cleaning, ironing and cutting of fabrics. We have our own little store where one can acquire the necessities. The MZhK council frequently organizes traveling sales of industrial and food products. Children's clubs have been created for this purpose. Preschool evening clubs are especially convenient for children and parents. The children can be left there for 3-4 hours under the supervision of an educator-organizer.

The collectivist basis for the organization of the life, leisure and education of children is an essential requirement of the time. We must recall this especially today when the role of man's nonindustrial life activity has

increased sharply. The creation of interfamily cooperatives at the place of residence and the development of public self-service contribute to satisfying the needs of the population for individual kinds of domestic and cultural services and education of children, which the state system of services cannot offer. This orients us toward public forms of satisfying needs in the sphere of life and leisure.

Table 10--Organization of Free Time in MZhK

	<u>June 1982</u>	<u>June 1983</u>	<u>Prediction for 1984</u>
Number of clubs for adults	4	6	8
Number of circles and sections in clubs	6	13	18
Participation of residents in work of clubs (permanent and episodic), %	22.5	25	30
Participation of residents in work of clubs constantly (intracub work), %	10	13	16
Participation in mass measures of clubs, %	81	89	90

Table 11--Rearing of Children, Organization of Their Leisure in MZhK

	<u>June 1982</u>	<u>June 1983</u>	<u>Prediction for 1984</u>
Number of children's clubs	1	3	5
Number of circles and sections in children's clubs	7	11	15
Number of children over 4 years old engaged in circles and sections of children's clubs, %	20.8	30	50
Number of children participating in mass measures of children's clubs, %	72	74	76
Number of residents working parents' aktiv in MZhK, %	9	11	15
Provision of children's preschool institutions in MZhK, %	--	41.4	80

One of the important tasks of the MZhK as formulated in its charter is the creation of conditions for the comprehensive and harmonious development of children and the organization of their leisure. We suggest solving this problem through the sociopedagogical complex (SPK) which has been created on the basis of the experimental school of the microrayon (with the organization of a full day for all students) and the collective at the place of residence. The SPK is a system of educational means which is created by party organizations of the shareholding enterprises, local soviets, public education agencies, and the cultural administration with the goal of communist education of all children, students and working youth in the microrayon.

When the SPK is created there arises a need to solve the problem of forming the sociocultural environment: to develop methods for it to be controlled by

the SPK. To this end it is suggested, in the first place, that the activity of the training and educational collective of the SPK be coordinated with the activity of the enterprises and institutions of the youth complex. In the second place, one should provide for an optimal distribution of functions and duties, and interchangeability of the activity of the training and educational collective of the SPK and the collective of residence. In 2 years we have achieved fairly good success in this.

Taking into account the age composition of the residents and the large number of children of preschool age, we improved first of all the methods of working with children of this age group. Thus we provided for an optimal combination of family and public education.

There are two children's clubs in operation in the MZhK ("Malyshok" and "Gnomik") for preschool children--they are attended by children from 3 to 7 years of age. The clubs are equipped with residential sports complexes and are the methodological centers for assisting parents in rearing children. There the children engage in sports, see films, learn dances and songs, sculpt with clay, and so forth. They acquire their first communications skills in the club.

The "Mechta" club has become the center for work with children of school age. It includes 11 sections and groups whose activity embraces aesthetic education, technical creativity and sports.

Now all of the club's work is directed toward the creation of children's self-managed collectives in the place of residence. We think that self-management should be arranged according to the type of self-management in the MZhK as a whole. It should be based on a detachment of children of various ages. It is created according to the territorial principle: each building has its own detachment. The goal is to join the school children into the body of the unified collective which is not only capable of solving problems related to its own leisure, but can render assistance to the adult collective of the MZhK in organizing the life activity of the collective. Any school child can be a member of the detachment, and in rare exceptions it can be an older preschool child who has proved to be an active participant in the affairs conducted by the detachment. The chairman of the detachment council is elected from the team leaders, and a new team leader is elected for the vacant position. The detachment council also includes commissars of the detachment who are appointed by the council of the building. The chairman of the detachment council is included on the building council and has a decisive vote when considering questions pertaining to the participation of the detachment in various affairs.

An important area for the activity of the MZhK council is the organization of the leisure of the adult members of the complex. One of its forms is independent creativity and amateur associations. Today there are seven clubs and 13 groups and sections in operation: the club of music lovers, tourists, the radio, film and photo slide club, the sports club, theater lovers, and the women's club. About 24 percent of the adult residents participate in the groups and sections of the combined MZhK club. The mass measures which are intended for the broadest range of residents (exhibits of artists, meetings

with interesting people, evenings of recreation, creative reports from clubs) are attended by 89 percent of the residents of the MZhK. The results of the work for organizing leisure include optimization of the structure of the residents' free time. Thus they spend three times more time than they did before moving to the MZhK on physical culture, sports and tourism, and twice as much time with their children. The figures from a sociological investigation of the residents showed that they have practically no unaccounted-for free time and passive kinds of recreation amount to only 57 percent of the average for the country (2.9 hours and 5.1 hours¹ a week, respectively). But the figures are not as indicative as are the interrelations among the residents. Many of them have become friends. Good-neighbor relations have taken form in the sections and the first manifestations of neighborly cooperation have appeared. The residents themselves are paying attention to this fact. When evaluating relations in the MZhK, 82 percent called them "good neighbor" and another 10 percent--"very good, excellent and superior."

Mutual assistance, mutual advantage and a high moral and psychological climate--these are the things the residents associate with the MZhK. But is this sufficient? Does this correspond to the expectations of the members of the MZhK before they moved?

The majority of residents think that their ideas about life in the MZhK were justified, 16.7 percent expected more, and 10 percent say that it is still too early to judge.

Well, things seem all right, but only for a modest beginning that has lasted 2 years. We understand that the requirements of the residents will increase. Therefore we are orienting ourselves toward the future, toward the higher level of demands. We are carefully analyzing our experience, sometimes abstracting from the positive, and focusing attention on the problems, difficulties and shortcomings. Today this is even more necessary since to be satisfied with what has been achieved, in the final analysis, means to depart from the assignments of the social experiment.

Of course it would be naive to assume that in such a short period of time we would manage to determine the paths for solving the entire range of problems, not to mention "accomplishing a revolution" in the traditional way we live our lives, rear our children and spend our leisure. Typical in this connection is one of Lenin's sayings: "With luck an institution can be broken down immediately, but habit can never be broken immediately, not with any kind of luck."² We also note the difficulty of this problem, which is related primarily to the innovative nature of the tasks that have been set.

FOOTNOTES

1. Patrushev, V. D., "Possible Changes in the Investigation of Time Budgets," SOTSIOLOGICHESKIYA ISSLEDOVANIYA, No 1, 1982.

2. Lenin, V. I., "Poln. Sobr. Soch." [Complete Collected Works], vol 38,
p 361.

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YOUTH CONFERENCE SUBJECT OF ROUND-TABLE DISCUSSION

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 67-93

[Article prepared by L. Shcherbakova: "The Youth Residential Complex--Today and Tomorrow"]

[Text] Sverdlovsk has accumulated a certain amount of experience in the functioning of the youth residential complex. In order to interpret this experience, analyze the causes of difficulties and earmark paths for the development of the experiment, a meeting was held at the EKO round table.

Participating in the discussion were:

S. B. Vozdvizhenskiy, head of the main board of Glavsreduralstroy, Sverdlovsk;

V. Yu. Golubtsov, director of the Kaliningrad MZhK [Youth Residential Complex], Moscow Oblast;

N. A. Goncharov, secretary of the party committee of the production association--a shareholder in the construction of the MZhK, Sverdlovsk;

A. K. Yezhov, chief of the housing construction combine--general contractor for construction of the MZhK, Sverdlovsk;

V. P. Yezhov, director of the large-panel housing construction plant that is under construction, Sverdlovsk;

G. N. Karelova, candidate of economic sciences, deputy chairman of the organizing committee of the MZhK, Sverdlovsk;

Ye. B. Kibalov, candidate of economic sciences, senior scientific association of the Institute of Economics and Organization of Industrial Production of the Siberian Branch of the USSR Academy of Sciences, Novosibirsk;

Ye. M. Korolev, chairman of the organizing committee of the MZhK, Sverdlovsk;

V. V. Mikotin, deputy general director of the scientific production association--shareholder in the construction of the MZhK, Sverdlovsk;

B. S. Pavlov, candidate of philosophical sciences, Institute of Economics of the Ural Scientific Center of the USSR Academy of Sciences, Sverdlovsk;

N. P. Podkovyrkin, deputy chairman of the Kirovskiy Rayispolkom, Sverdlovsk;

G. V. Polyakov, secretary of the obkom of the Komsomol, Sverdlovsk;

A. G. Radov, candidate of philosophical sciences, special correspondent of LITERATURNAYA GAZETA, Moscow;

V. A. Samorodov, chairman of the organizing committee of the youth residential complex at the large-panel housing construction plant that is under construction, Sverdlovsk;

A. M. Shloma, candidate of economic sciences, chief of the city administration of the USSR Stroybank, Sverdlovsk.

The following range of questions was discussed:

Why is a youth complex needed? Why can problems of improving housing conditions for youth (young families) not be resolved under the ordinary policy?

Does the creation of an MZhK not mean that the youth will receive housing sooner than veterans will? Is the MZhK not in reality a concealed form of redistribution of housing in favor of youth?

What enables youth to carry out tasks related to the organization of construction? What organizational principles lie at the basis of the production activity of the MZhK?

How effective is it to utilize "nonbuilders" in construction?

To what degree does the creation of the MZhK contribute to increasing the labor productivity of its participants and the retention of young personnel at the enterprises? What indicators can be used to evaluate the socioeconomic effectiveness of the MZhK?

To what degree does the MZhK make it possible to organize the life and leisure of its residents in a new way and contribute to the strengthening of the young family?

What will happen to the MZhK 10-20 years from now? What are the role and prospects for the development of public self-management at the place of residence?

What are the problems of the organization and functioning of the MZhK and the ways of solving them?

"The Effect of the Youth Residential Complex Is Multileveled"

EKO: Let us try to comprehensively evaluate the socioeconomic effect of the MZhK.

S. B. Vozdvizhenskiy: In my opinion, the most obvious advantage of the MZhK is that it makes it possible to enlist youth to participate in construction--both housing and industrial.

EKO: This is an essential argument. Under current conditions for labor and wages in construction there is a critical shortage of labor force. One must say that Sverdlovsk is one of the best cities of the country in terms of staffing with construction personnel, but even here there are not enough of them. And what can one say, for example, about Novosibirsk where with the same number of population less housing is being constructed? And this frequently has the most direct effect on production. People do not go to work at certain enterprises primarily because of the inadequate supply of housing. As a result the coefficient of shift work drops the costly capacities which were introduced with such labor stand idle, and the state does not receive the necessary products.

A. K. Yezhov: I shall refer to one example from our DSK [housing construction combine]. The housing construction combine is now faced with one task--to introduce more housing and at the same time to expand industrial housing construction. We clearly do not have enough personnel to carry out this task. So the MZhK is giving us additional labor force. This is a great help, and during our 4 years of cooperation we have become convinced of this. The skilled labor force of the construction site is mainly ours, and our staff workers perform the complicated jobs, but for the heavy, labor-intensive and less skilled or unskilled work we use Komsomol members from the youth residential complex. And they work very enthusiastically, not thinking about time or difficulty. With time the members of the detachments gain experience and their overall labor contribution increases.

If one intelligently combines the experience of the builders and the enthusiasm, militant attitude, self-sacrifice and devotion to the idea of the youth, one obtains a serious addition to the overall stockpile.

We attribute the reduction of turnover largely to cooperation with the MZhK. In the first place, some of the workers of our collective are members of the Komsomol youth construction detachment while others are striving for the right to become members. In the second place, the joint work of the experienced housing construction personnel and the youth contributes to stabilization of the collective. Each year up to 300 members of Komsomol youth construction detachments work at our facilities. This enables us to eliminate the personnel shortage. We shall continue to develop ties with the MZhK in the future. We are now working with MZhK-2 (at the Uralmash plant) and with MZhK-3 (at the large-panel housing construction plant that is under construction).

Why is another MZhK needed? I recall the following instance: at one of our plants an extreme situation took form. We turned to the MZhK, and very efficiently a brigade was formed which did everything to make sure that this

extreme situation did not affect construction. Where else could one find such a mobile formation to which we can turn in such a situation?

S. B. Vozdvizhenskiy: The next important aspect consists in that the youth must have interesting work in which they can prove themselves, show their capabilities and see the results of their labor. The BAM or Urengoy alone cannot solve the youth problems in the entire country. It is necessary to have similar construction projects in Sverdlovsk and in Kachkanar and in Novosibirsk so that a large part of our youth can participate in them. The large construction projects, for example, the BAM, are written about in the newspapers and discussed on the radio, but now to elicit interest in the ordinary construction site, to make it interesting to the youth--the MZhK is coping with these tasks brilliantly.

V. V. Mikotin: Indeed, so far, in my opinion, the MZhK is one of the few possibilities for youth to try out their strength and to do something concrete and tangible with their own hands. The engineer at his work station sees that only that documentation which he is developing. In many cases he does not know what his work is embodied in. But here in the MZhK we have gone through all stages, beginning with the development of the documentation and the determination of the contractors and clients, and ending with the construction of the buildings with our own hands.

A. G. Radov: If we look at things realistically, today we do not have enough "testing grounds" for the self-assertion of youth. It is as though the MZhK is one of those testing grounds for collective self-assertion. It is precisely in such an atmosphere that the civic qualities of the individual can originate. And all this is related to real economic relations, and as A. S. Makarenko already said, cost accounting is the best educator. The second aspect. The society never has enough activists, people who can perform leadership functions. And in order for these qualities to appear at a young and vigorous age, the individual must go through a certain school. The MZhK is a school of activists, a school of managers and leaders. It is not by accident that Slava Mikotin at age 31 became the deputy director for economics of a large enterprise.

S. B. Vozdvizhenskiy: The MZhK is also needed in order to create a new microrayon with a new interaction among people not only in industry, as is now happening with us, but also at home and in the microrayon. What has happened here has not only confirmed our expectations, but has even surpassed them. An individual can be one person at work and have an entirely different personality in a different situation. But if he is in the collective both at work and after work, there are practically no mistakes in his evaluation.

N. A. Goncharov: Unfortunately, people really do communicate less outside the sphere of production. Once a person goes into his apartment or room after work and turns on the television set, he practically does not see anybody except for members of his family if he has one. Or his communication amounts to conversations over a bottle of wine. It is nothing like this in the youth residential complex. And this is one of the main arguments in favor of the MZhK. Expansion of communication among young people outside the sphere of production makes it possible to organize more actively the work with youth in

the place of residents. At the same time the collective of the MZhK exerts a favorable influence on other microrayons. Therefore its experience is also important. Through this collective, as in production, it is possible to solve serious educational problems relating to individual members.

N. P. Podkovyrkin: Many young people have not accustomed their families to labor. If the Komsomol disseminates the experience of the MZhK, then, in the first place, the youth themselves will construct their own apartments and, moreover, they will receive labor experience and become accustomed to working. And regardless of where these young people work subsequently, the MZhK school will not have been in vain for them. I think that all young people should go through it.

G. N. Karelova: The youth residential complexes are also necessary for rendering assistance to the young family in rearing children and organizing their daily life. They contribute to strengthening the young family.

I would formulate the goal of the creation of our complex as follows: It is a possibility of solving youth problems--through our own efforts. Today young families are most frequently nuclear, that is, they do not have grandmothers and grandfathers. Whether this is good or bad is another question. But the situation has arisen and we must deal with it. The grandmothers and grandfathers who previously took over the rearing of their grandchildren also took on some of the household duties in the family. Now these duties must be performed by someone else.

At the same time greater requirements are being placed on the young married couples both as workers and as individuals outside the enterprise and in the society. Two processes are taking place in parallel: on the one hand, time is required for the development of the personality, for increasing skills, and, on the other, the functions of the young family are becoming more complicated and the range of duties of both the man and woman is becoming broader.

Today every enterprise is engaging in improvement of labor. Less attention is being devoted to daily life, and therefore contradictions arise between labor and daily life. It is no accident that in Kaliningrad the MZhK appeared at an enterprise where the youth, as it were, had turned their back on scientific and technical progress. There arose a need for the daily life to contribute to the development of such qualities as communicability, collectivism and mutual assistance. This possibility appeared within the framework of the MZhK.

B. S. Pavlov: Well, it is an excellent thing, as they now say, to solve "their own problems with their own hands." Now residential space is being distributed mainly according to the job in production. Yet in a socialist society there are two spheres of labor: the labor in industry and the labor outside of industry, including the rearing of children. And if we are trying to raise the level of the birthrate without creating the necessary conditions for the young families, primarily without providing them with housing, we shall not be successful. And the creation of the MZhK is one of the forms of solving this problem.

Ye. M. Korolev: Indeed, such an experiment is necessary. The MZhK is an attempt at a comprehensive solution to all problems of youth. We are building not only buildings, but we are also constructing our life and our future.

EKO: From the statements we are hearing now it is clear that the effect of the youth residential complex is on many planes and that this is undoubtedly a necessary matter which requires the most extensive dissemination.

But where can youth residential complexes be used? When solving what problems?

S. B. Vozdvizhenskiy: In the first place, in places where new facilities are being constructed. It is very appropriate to create such complexes when expanding a plant if it is necessary to solve important problems in extremely short periods of time. Such, for example, was the path taken at the plant imeni Sverdlov in our city. In the oblast in general the MZhK's are appearing on a large scale: in Nizhniy Tagil, Kachkanar and Sverdlovsk new youth residential complexes are being created.

Today our main board is looking for ways of creating these complexes in remote points, where it is necessary to build at rapid rates, sharply increasing the capacities of the construction organizations. The Komsomol is actively helping use. This has always been the case, throughout the entire history of the development of our socialist state. There is nothing principally new here. The form of enlisting youth has changed, but the times have also changed.

I think that it is necessary to raise before the youth residential complexes not only purely construction problems, but also technical and design problems. The composition of the MZhK is very interesting: It includes workers, engineers and scientific workers. They become very close to one another and work in one brigade, in one "trench." They will never have this again in their lives. In production they are at various levels: one will be at a machine tool while another is in a laboratory. But here the work of the engineer, the laborer and the scientist are combined. It would be incorrect to utilize them solely in physical labor, and therefore we are constantly giving the MZhK collective technical instructions, which they carry out brilliantly. I shall give an example. We had to organize solid-panel housing construction in Sverdlovsk. We set this task for MZhK-2, which was created at Uralmash. The young people took on a large amount of work. They analyzed what had been done in our country in this area (in Kostomuksha and other cities) and found ways of making connection with the enterprise for solid-panel housing construction in Rostov. I am confident that we shall master this construction this year. If we had not enlisted the youthful, energetic Komsomol forces to solve this problem, it would have been prolonged for a long time.

I think that in the future many enterprises will be solving engineering problems precisely through a structure analogous to the MZhK. And we shall keep trying until we can take advantage of these capabilities.

We are now placing great hopes in the MZhK-3. Its collective is constructing both a plant and a residential complex. I am confident that by the time the plant is started up we will be educating both a collective and production commanders who will start producing new items at the new plant right away. This will not be a tortuous process of many years of assimilation, but the collective will reach the planned indicators rapidly since they will be selected, trained and broken in ahead of time.

V. B. Yezhov: Ours is a large-panel housing construction plant with a capacity of 258,000 square meters of overall space a year. It must produce the entire list of reinforced concrete items for constructing 12-16-story buildings of the 137S series (improved planning and increased comfort). And the construction began in 1979 and the preparatory work had been under way for another year and a half before that. Things were moving extremely slowly. It was decided to enlist the Komsomol workers in the construction.

In 1980 the first dozens of members of the public service detachment were sent on passes from the Komsomol Gorkom to the construction site. They mastered the basic and related construction occupations fairly rapidly. Now they are not only just as good as any other brigade, but also hold leading positions in the socialist competition. The first public appeal showed how far-sighted this decision was.

But the deadlines are approaching for the plant to be put into operation (the start-up of the first section is planned for the end of 1984) and the problem of personnel for operating it is becoming increasingly crucial. We see a solution to this problem (a partial one, of course) in the organization of another youth residential complex under the directorate of the plant that is under construction. In the middle of 1983 we set out another public appeal for the construction of the plant. The candidates are being selected on the basis of the existing charter of the MZhK. With each new member the detachment concludes an agreement for participation in the construction of the plant and subsequent transfer to operating it.

There are now more than 100 members of the MZhK now working on construction. By the middle of 1984 there will be 250 of them. We select and train the people in their new occupations in such a way that when the plant is started up it will have the necessary contingent of workers and engineering and technical personnel. Our dream is to retain the complete collective of enthusiasts so that it will become the backbone when forming the industry and so that the new enterprise will receive the traditions of collective labor, public work and recreation for which today's MZhK members are renowned.

And while the young people are creating the brigade to carry out this work for which the managers of the construction administration "do not have enough hands" (for example, the brigade of plasterers), experience is being acquired in the council of brigade leaders and in the operations division. The latter was created especially for selecting operations personnel, placing them in their future jobs and training specialists.

The management of Glavsreduralstroy is now considering the proposal of the MZhK staff of the plant for large-panel housing construction concerning the

creation at the construction site of a unified youth construction section which would be managed by the most active members of the detachment.

We have eliminated the unpleasant tradition of the general contracting construction administration of removing workers from construction sites and sending them to start-up projects 2 months before the end of the year and returning them to their regular site in February or March. Permanent personnel have been transferred, but the construction site lives! This life is corroborated by the MZhK.

It is important not only to inform the collective of the future plant, but also to retain personnel. This is achieved through the construction of housing. The first steps have already been taken. A group of buildings has been approved in the region Komsomol'skiy-1: three 10-story buildings with apartments with improved layouts and a children's combine to accommodate 320. The calculations concerning the number and kinds of apartments in the buildings were made on the basis of sociological research that was conducted at MZhK's that are already existing in the city. Generalized data concerning the future residents of our plant were also taken into account.

The plan for the organization of the MZhK of the plant for large-panel housing construction envisions the construction and functioning of two blocks for social and cultural purposes. One of them will include a school for young artists and a music hall, and the other a block of shops for creative work.

The creation of our plant's MZhK is a new undertaking and it has no analogues in the country. Difficult issues and problems are arising and will continue to arise, but we are confident that we will be able to handle them. Possibly something unforeseen will happen or someone will not be able to stand the pressure of the youthful "above-plan enthusiasm." But we believe that the new youth residential complex will live and work!

EKO: Let us sum up what has been said. The MZhK is needed today for active enlistment of youth in construction--both in housing and industrial construction--during the assimilation of new regions. This is one of the testing grounds for the collective self-assertion of youth, and here they have the possibility of demonstrating their capabilities and seeing the results of their labor. The MZhK educates and advances leaders from among the capable youth.

The youth residential complexes will make it possible to create collectives in the place of residence, which contributes to solving serious problems related to the education of youth. The young people will receive labor tempering here.

The MZhK is necessary for rendering assistance to the young family in rearing their children and organizing their daily life, and it contributes to strengthening the young family.

Members of the construction detachments of the MZhK work very effectively in reconstructing enterprises and in carrying out complicated technical and design tasks.

"The MZhK Means a Lack of Consumerism"

EKO: The next problem about which I should like to hear the opinion of those present: Does the creation of an MZhK not mean that the youth will receive housing before the veterans do? Is the MZhK not in fact a hidden form of redistribution of housing in favor of the youth? We are asking this question since we have come up against a lack of confidence in the MZhK precisely for this reason.

A. K. Yezhov: A painful question. This is the first reaction of many people. But there is a simple answer to it: the youth are investing their own time and efforts in the construction of above-plan housing. So there is also above-plan distribution. I emphasize the word "above-plan"....

S. B. Vozdvizhenskiy: I still think that this is stretching things somewhat. The veterans of enterprises, as a rule, already have housing. They have a different problem--their children are getting married and forming a new family, for which it is necessary to obtain an apartment. But it has been earned not by the son or daughter, but by their parents. That is, the young family receives a kind of inheritance from their parents. The MZhK makes it possible to earn the right to an apartment through their own labor. And from the state standpoint it is important that the young families receive housing as quickly as possible so that they will be more stable. I think that the organization of youth residential complexes eliminates an incorrect situation in which the children receive housing because of their parents, without going through the school of life which their parents did go through.

V. V. Mikotin: Like any other enterprise we have a waiting list for housing and a particular plan for housing construction. We construct housing with state capital investments that are allotted by the ministry for our contractor. But when the youth came out with the initiative to organize an MZhK the ministry agreed to allot special-purpose funds in excess of those usually allotted for construction. It was advantageous for the enterprise to send people into the detachments and to obtain the additional housing without impinging upon the trade union waiting list.

Moreover, more space has been added as a result of using the dwelling space vacated by the youth who have become members of the MZhK. The decision concerning participation in the construction of the youth residential complex was approved by the collective of the enterprise and a collective agreement was written up.

Corroborating the words of Sergey Borisovich, I shall say the following:

When the decision was made to participate in the construction of the youth residential complex we analyzed the structure of the trade union waiting list. It included more than 2,000 people but not a single one who had already received an apartment. The people who were first on the list because of their length of service were now receiving housing for their children.

G. N. Karelova: I should like to give a couple of figures from a sociological investigation of the neighbors in the Komsomol'skiy Microrayon who were not included in the MZhK. From 27 to 33 percent of the young families live in the MZhK, and up to 60 percent in cooperative buildings. And the majority of these young people have received housing because of their parents, their labor, their money and their concern. The situation is the reverse in the MZhK. The youth realize their right to obtain housing through their own labor. Moreover, when the youth move into the buildings of the MZhK the housing conditions improve for their parents. The average amount of space in MZhK housing is 9.1 square meters per person (while their parents are left with 11.2), in the neighboring buildings--9.6, and in the cooperative buildings--11.7.

Thus the MZhK is characterized by a lack of any kind of consumerism, especially with respect to the older generation. And this was included from the very beginning in the idea of the creation of a youth residential complex.

Ye. B. Kibalov: There does not seem to be any doubt about the usefulness of the MZhK, and this has already been discussed here. First of all, it is economically advantageous for all enterprises to attract youth, providing them with housing first of all. Young people are full of strength and will be working actively for a long time so that the future of the enterprise lies with them. But it is socially unfair to redistribute the extremely limited quotas of housing in the favor of youth. And the MZhK solves this problem correctly.

N. A. Goncharov: There is a unified policy for distributing housing in the country. In the MZhK people construct and receive housing through their own labor participation. Various ministries have different attitudes toward the youth residential complex. Some allot special-purpose money for the MZhK while others do not. While some are glad to support the idea of the MZhK and see a great advantage in it, I, as secretary of the party committee, still have to convince the minister, his deputy for capital construction, the chief of the division for capital construction of the ministry, the chief of the main board and other officials of the need to allot money for it. In spite of all this, we have dealt with this problem and shall continue to. Why? In the first place, the organization of socialist competition according to the system of the MZhK at enterprises produces a great positive effect in all areas. The young people who are candidates for membership in the MZhK have higher labor productivity and better labor and production discipline. Who are the winners in the competition for participation in the MZhK today? They are the cream of the crop of workers and engineering and technical personnel at the enterprise, to whom the director and his deputies can grant housing out of turn by taking advantage of housing legislation. Therefore if one is to answer briefly the question of whether or not the MZhK affects the overall waiting list at our enterprise, I can answer that it does affect it. But this depends on the attitude of the higher agencies toward the MZhK. If I can approach this question informally, I would say this: it does not influence it to the extent that it is necessary to cover it up today.

EKO: I should like to separate out the main thing. Every participant in the MZhK, in terms of the volume of funds that are assimilated, constructs two

apartments: one for himself and another for the city, and thus he does not receive housing at the expense of those who are waiting on the list, but, on the contrary, through his labor he contributes to improving the housing conditions for the other people who need it.

"Our Task--The Final Result...."

Ye. M. Korolev: The construction detachment of the MZhK has a common special task--to create an object for the social, cultural and domestic purposes, a building in which to live or a complex of engineering facilities. The overall task is concretized in a weekly and daily schedule. Each member, each brigade works until the daily assignment is fulfilled. If their qualifications do not enable them to carry out the assignment in 8 hours, they work 10 hours, and sometimes even more. The average earnings of one member of the detachment is 109 percent of the level achieved in the Sverdlovsk DSK, and this is very high. For example, during the third quarter of 1983 it amounted to 1,620 rubles a month. We perform a large volume of work at facilities for social, cultural and domestic purposes which are not typically a part of housing construction, where the labor-intensiveness is much greater. Taking this into account, the actual earnings of the detachments by the time the members master their construction specialty is 160-180 percent. This is achieved not only as the result of intensification of labor as, for example, in the student detachments, but also as a result of the introduction of minor mechanization, the preparation of additional and spare work fronts, the application of technological charts at the facilities, and so forth. One must not forget that the majority of the members of the detachment are the leading youth from the industrial enterprises for the organization of production is much higher than the level achieved in the sphere of construction today. The desire for the final result also determines the discipline and the attitude toward work: nobody will be playing dominoes if there is no liquid cement or concrete--they will find something else to do.

Question: In what kind of units are the daily assignments given?

Ye. Korolev: In physical units, in square meters and cubic measures. The assignment is calculated from the overall task--during the work time it is necessary to fulfill a 1.5-year program in physical indicators for the contracting organization where the detachment is working. The estimated cost of the four buildings where the members of the first detachments of the MZhK are living is 4.6 million rubles, and the overall amount of work done by these detachments exceeds 11 million rubles.

Ye. B. Kibalov: The MZhK, in my opinion, has managed to find the correct organizational structure. They are constructed according to the program principle and interact with the DSK according to a clear-cut matrix system. The existing system should be strengthened and legitimized. It seems incorrect to me that the managers of the programs, being members of the MZhK, receive less than do the engineering and technical workers of the DSK.

What, in my opinion, can be done to straighten out the work of the MZhK? It could be regarded as an internal subcontractor of the housing construction

combine and its work could be evaluated according to the value volumes that are provided without using any translating coefficient.

Ye. M. Korolev: Another interesting aspect. Our capital construction division which combines enterprises of six ministries is a single client. Not a single enterprise could undertake this kind of work here independently, it is not capable of this. We construct both housing and facilities for social cultural and domestic purposes. And we must be in charge of all of this. Each enterprise under construction has its own board of directors. But the microrayon, which is valued at 70 million rubles, does not have one....

V. Yu. Golubtsov: In Kaliningrad we are creating a large experimental rayon. Not a complex, but a rayon in which we will have units of self-management with the same rights as the commission of the ispolkom. Many problems regarding the functioning of the microrayon will be eliminated. I think that there should be a board of directors in each microrayon that is under construction. Then, for example, there will be no incomplete construction. And another suggestion: each year in the country we fail to assimilate some of the funds for housing construction. So why not give these funds to the youth?

B. S. Pavlov: Would it not be better to remove the word "youth" from the name of the complex? Why not enlist everyone who needs housing, everyone who has the strength and desire to engage in this work?

V. V. Mikotin: The youth have the ability to take risks, they are less burdened with daily life, and people who are 45 years old and older actually do not have this capability.

Ye. M. Korolev: At each enterprise for 7 years there has been a competition for the right to be a member of the Komsomol youth construction detachment. Applications are accepted from people up to 30 years of age. The young people participate in the competition for 6 years. This means that they will be about 36 by the time they enlist in the detachment. If the system remains in effect continuously the problem will disappear altogether. As soon as a person comes to an enterprise he enters the competition. And when he wins--this is a problem which depends on him himself. The fact that the distribution of housing and places in the kindergartens can be conducted taking into account the results of labor is, in our opinion, one of the main merits of the experiment.

The Young Person Who Has Gone Through the School of the MZhK--The Support of the Manager, a Reliable Worker With Initiative

V. V. Mikotin: Let us see what distinguishes the average MZhK member in production. I shall refer to an example from my own enterprise.

Among candidates for membership in the MZhK the turnover is one-fourth of the average for the association. The young people practically do not ever leave the enterprise because of housing conditions. They know that if they work well, within 3-4 years of participation in the competition they will enter a detachment and work and obtain housing. The system of competition includes, essentially, those same constituents as are a part of ordinary socialist

competition at the enterprise: fulfillment of the plan and public work.... It is a very good stimulus. From these young people we receive more than twice as many inventions as we do from others and they receive incentives twice as frequently. Tardiness and violations of labor discipline among candidates for membership in the MZhK are one-eighth as much as the average for the enterprise. These were the figures that were obtained as the result of an analysis of the work of 500 workers who are participating in the competition for the right to become members of the Komsomol youth construction detachment.

Now about labor productivity. As concerns the workers, it is easy to account for: the planning assignments of those who have gone into the MZhK are covered by those who are left. The workers participating in the competition overfulfill the output norm by 20-25 percent while the average level of overfulfillment is about 10 percent. According to the estimates of managers of subdivisions, engineering and technical personnel increase their productivity by 30-40 percent.

There is one more consideration. The engineer frequently does not know what the labor of the worker is. If he has been educated under certain conditions, studied in the institute, and has not worked in student detachments, he does not know how to take a hammer in hand. Labor education in the MZhK contributes to a situation where people, when they return to their work position, have an entirely different attitude toward their labor. It is also important to instill in people who have gone through the MZhK course the ability to achieve the tasks and goals that have been set. The system is fairly strict in the MZhK detachment. They set an assignment which the detachment must carry out without resorting to any excuses (lack of materials, technical equipment, illness and so forth). If it does not fulfill the assignment, it occupies a lower place in the competition and does not receive such good apartments. The person develops in himself the ability to actively search out ways of solving the problems that are set for him. This quality is necessary for people who are working in any position. The young person who has gone through the MZhK school is a support for the manager, a reliable worker who is filled with initiative.

"The Main Thing--A Comprehensive Solution to Youth Problems"

EKO: A certain amount of experience in this area has been accumulated in Kaliningrad. The youth residential complex has been in existence for more than 10 years. We should like for the Leningrad workers to express their opinion regarding this issue.

V. Yu. Golubtsov: The 10 years that have passed have confirmed the correctness of the basic decisions that were adopted during the stage in the creation of the MZhK. What have we managed to achieve?

The main task in working with children is developing a harmonious personality, an individual who is comprehensively prepared for future labor and social activity. It has been resolved in the MZhK in the following areas:

the initial training, the disclosure of the natural gifts and inclinations of children 3-7 years of age in groups for harmonious development;

in-depth development of children and adolescents from ages 8 to 18 in specialized circles, groups, clubs and sections of the MZhK.

The greatest successes were achieved in the work of the groups for harmonious development. Almost all the children from the MZhK (80 percent) and some of the children born in 1970-1976 from neighboring residential buildings went through the course of studies here. Now the work of the groups is being received by the residents not as an experiment, but as a customary phenomenon.

The work with children of school age, although it produced positive results which are comparable to the work of traditional houses of Pioneers and stations for young technicians, still has not revealed the capabilities of the MZhK. We are now improving it. We have begun an experiment to create in the MZhK detachments of schoolchildren of various age groups from grades 1-9, so-called "classes of full occupation."

The Dzerzhinets club, which was created on the basis of children's self-management, has been in existence in the MZhK since 1982 and is developing actively. It now includes 75 people. In this club, under special programs, the young people become familiar with the fundamentals of legal knowledge, the history of our internal affairs agencies, they master the elements of battle, they learn to swim and shoot, and in the future it is suggested that they learn to ride horseback, parachute and learn the elements of radio operator work. During the summer of 1983 the members of the club vacationed in a forest camp which was organized by the children's commission of the MZhK.

Correctly arranged daily life has made it possible for the residents to have free time for socially useful work, recreation and self-education. There are tables for submitting orders, receiving points for laundry and dry cleaning, a library, recreation rooms and halls for family celebrations. As the results of a questionnaire from 1983 showed, up to 56 percent of the residents of the MZhK take advantage of the services of the tables for submitting orders, and 53 percent take advantage of the laundry and dry cleaning services.

One of the additions to the MZhK has become a public shop. Each resident can use this facility for repair and creative work.

during the past 10 years while maintaining the MZhK council there have arisen various forms of conducting family leisure and recreation of adult members of the MZhK, and these are continuing to develop. Among them are the collective forms--the Del'taplan and Neptune clubs, the section for athletic gymnastics, and individual forms of development. The residents are granted the opportunity to work in various public laboratories independently. Recently more and more frequently in the majority of measures--be they lectures of the Znaniye Society, the work of the table for orders or the laundry, the technical and sports clubs, studies in groups for harmonious development and in the branch of the music school--not only are MZhK residents participating, but also other adults and children who live in the microrayon. This makes it possible to draw the conclusion that the possibilities of the MZhK can be used

for creating on its basis a center for educational work at the place of residence.

The level of social maturity and public activity of the residents of the complex has risen significantly. More than 80 percent of the adult population have permanent public and party assignments at the place of residence. More than 15 percent of the residents are working permanently on a public basis in agencies for self-management of the MZhK and in various commissions of the building council. They are supervised by the city council for work in the MZhK under the CPSU Gorkom. The tasks of the councils and their commissions include the search for forms and the organization of ideological and educational work, as well as the provision of the economic and cultural-domestic aspects of the life in the MZhK. Through the councils they also provide for interaction with various city services and enterprises.

During all of the 10 years the city council will work with the MZhK under the CPSU Gorkom and the MZhK council have constantly engaged in the improvement of the organizational structure and a search for effective forms of interaction between city organizations and the MZhK. Thus in order to improve the conditions for the operation of the premises of the complex and to increase the interest in the results of the social experiment on the part of municipal services managers in the city, a special housing administration was created. As a result, many economic and domestic problems are now being solved more efficiently. But so far we are not satisfied with its capacities or financial capabilities.

The activity of the self-management agencies does not satisfy us either. One of the main reasons is the lack of legal definition for the position of the MZhK in interactions with city services and enterprises. The greatest difficulties arise, as a rule, when solving problems of financial and material-technical support. Interrelations among shareholding enterprises of the MZhK in the organization of patronage assistance are not sufficiently defined either. The need to solve these problems is confirmed also by the fact that the social experiment in the MZhK has already outgrown the framework of Kaliningrad. New complexes are being created in a number of cities of the USSR. A new stage of the social experiment has begun.

G. N. Karelova: The main thing that distinguishes the MZhK from any other typical microrayon is the comprehensive solution to youth problems, beginning with the education of children and ending with the formation of an active life position in adults. Our task is to arrange the vital activity of the complex in such a way that everyone participates in everything, so that it is done in such a way that participation in the affairs of the complex becomes a part of one's own life. According to our data, 10 percent of the residents of the MZhK are passive. One must say that the majority of these are members of the families of Komsomol youth construction detachment members. We see our main mistake and shortcoming in the fact that we have not made family members our supporters and we have lost them at some stage. We are now trying to work with members of the families when preparing the candidates for membership in the MZhK, in the state of construction. We are trying constantly to introduce or, on the contrary, reject those forms of work which do not correspond to the level of development of the collective. We coordinate the work of the MZhK

council, the buildings council and those services which exist in our complex (the children's combine, the ZhEU). Under conditions where there is no MZhK board of directors, this is especially important. A certain amount of public control is also exercised and the work of these organizations is regulated.

"The Creation of the MZhK Should Be Supported by Legislative Acts"

A. M. Shloma: I am fairly familiar with the history of the organization of the complex and am convinced that it is a necessary thing. Let us discuss what must be done in order for it to continue to live.

As a representative of the control organizations I must say that today the youth complex is not officially indicated in a single document, so that it is illegal construction. And here they are constructing housing, children's preschool institutions, and facilities for municipal services and public health. The young people are succeeding in including these facilities in the plans of various organizations. I think that it is necessary to solve the problem somehow and to legitimize the MZhK.

Dwelling space for the complex is now constructed according to a title list of the housing construction combine. Many problems arise in connection with this. First and foremost the workers of the housing construction combine can ask their chief why he gives the MZhK its own construction. It is a legitimate question. Now another thing. While previously the Ministry of Heavy Construction gave money to the housing construction combine for its own housing construction, albeit rarely, but now it does not give its own money, but the money of the shareholding enterprises. Last year we studied this problem. The Ministry of Heavy Construction uses part of the money of the shareholding enterprises even in other cities and other oblasts. For instance last year the shareholding enterprises allotted 1.35 million rubles, and the Ministry of Heavy Construction gave the city only 640,000 rubles. We received the rest of it over 8 months, and this was out of the pocket of the USSR Ministry of Finance. These are very serious problems. There is only solution: to legitimize the construction of the complex. And I suggest the following concrete measures:

1. To make it incumbent on the capital construction administration of the gorispolkom to be the client for the construction of the facilities of the complex.
2. For each five-year plan, with the breakdown for the various years, to determine the composition of shareholders in the construction of facilities in the MZhK and the sums of their shared participation, which is annually submitted to the capital construction administration of the Gorispolkom under the established policy through the USSR Gosplan, the RSFSR Gosplan, the USSR Ministry of Finance and the RSFSR Ministry of Finance (depending on who has jurisdiction over the shareholding enterprises).
3. To make it incumbent on Glavsreduralstroy to give additional assignments to the general contractor for the construction of facilities of the MZhK, taking into account overfulfillment of the annual plan. To increase its limit

for credit for incomplete construction and installation work and material resources by the sum of the additional assignment.

4. To request that the USSR Gosstroy develop standard plans for facilities of the youth complex, taking into account all of the peculiarities of how the residents live in the complex or granting the right to construct these facilities according to individual plans to the head architect of the oblast.

5. Through the USSR Stroybank to obtain annually or for the entire period of construction of the MZhK facilities permission for overfullment of the plan by the USSR Ministry of Heavy Construction at facilities of the MZhK.

6. To obtain permission from the USSR Stroybank for extending credit to contractors for the construction of facilities of the MZhK for the actual volumes of incomplete production on these facilities within the limits of the overall sum of accumulated funds for all the clients that are served by the bank and finance facilities of the MZhK or within the limits of the overall sum of accumulated funds for all the clients in the oblast.

S. B. Vozdvizhenskiy: Yes, we need clear-cut decisions from central agencies regarding the youth residential complex. We now frequently take risks and do things that are not altogether legal, but we are solving many problems. The time has come when the creation of the MZhK must be supported by legislative documents.

A. K. Yezhov: The matter is so interesting and necessary that it requires greater attention. It must be legitimized and made a part of our economic structure. Then it will be possible to coordinate the actions of the young people. Then our relations will not be only contractual either. Otherwise there will be difficulties in the relations between the MZhK and the housing construction combine as the contractor.

The path to legitimization is to plan the MZhK on a separate line, but the form of the plan must take into account their additional potential, that is, it must envision overfullment.

Moreover, 9 or even 11 months is not enough time to do everything at the construction site. I think it is necessary to prolong this period to a year and a half. If this is acceptable we will be able to solve many problems related to the construction of facilities for social cultural and domestic purposes--schools and a complex for various kinds of sports. I think the time has actually come to generalize everything that has been collected and to legitimize the MZhK.

N. P. Podkovyrkin: In the city we have a single client for housing and civil construction--this is the capital construction administration of the Gorispolkom. It has the charts in its hand. It is necessary, in my opinion, for the capital construction administration of the Gorispolkom to officially act as client for this complex. The MZhK board should only check to make sure that the shareholding enterprises have transferred the money to the Sverdlovsk Gorispolkom under the established policy through the USSR Gosplan (enterprises

of union ministries) and through the RSFSR Gosplan (for enterprises under republic jurisdiction).

Now about the builders. I think that it is necessary to reach a point where the Ministry of Heavy Construction produces the plan taking the MZhK into account. Apparently its main boards, particularly our Glavsreduralstroy, can act as general contractors for the construction of the complex. And for them it also necessary to give an assignment in addition to the plan, and in such a way that this assignment has the force of law for the general contractor. The most important thing is that the main board give material resources for the additional assignment--and then all of the problems will be solved. Why? Because the MZhK will help to overfulfill the plan, by giving the main board additional labor force. Here it is necessary to take into account that the MZhK worker receives less wages, and therefore the cost of construction is lower here. Last year in the housing construction combine the average wages of the workers was 253 rubles, and the workers of the MZhK received 154 rubles.

The second question. In our country we were carrying out construction according to standard plans. I shall not discuss their advantages now because this is a separate subject. But there is no standard plan that takes into account the specific features of the MZhK. It is necessary to ask the USSR Gosstroy to develop one. And for the time being it is necessary to give instructions to the head architect of the city or oblast so that he will consider questions of planning and decide them on the spot. Then the MZhK will construct not only what it can, but what it needs.

EKO: This means, in our opinion, that questions of legitimization can be solved at the level of the Gorispolkom?

N. P. Podkovyrkin: Yes, the city soviet is capable of solving this problem itself. But here is a fine point. There are two microrayons located next to one another--Komsomol'skiy-1 (MZhK) and Komsomol'skiy-2, which was constructed under the title list of the capital construction administration of the Gorispolkom by the usual policy. There are 5,000 people living in the first one, and 30,000 living in the second. In Komsomol'skiy-2 there is almost nothing having to do with social, cultural and domestic services: there is only a school and one cafe. The picture is different in the MZhK. No complaints come from Komsomol'skiy-1 to the ispolkom, while there is a steady flow of them from Komsomol'skiy-2. They ask one question: When will we finally be able to have the elementary human conditions--stores, a children's combine.... This is an example of how the capital construction administration plans its construction. The MZhK is to assimilate 5.6 percent of the capital investments for social, cultural and domestic services during the course of construction. This is not true of the capital construction administration. I repeat: there should be one client--the capital construction administration of the Gorispolkom. But the MZhK must be given a separate line, for otherwise a good undertaking will perish. The needs of the city will eat up the money that is allotted.

N. A. Goncharov: I agree that the main thing today is to legitimize the existence of the MZhK. But the legitimization should take place not at the

level of the city soviet, for the shareholding enterprises do not transfer money for housing construction to the capital construction administration of the Gorispolkom, but, like the capital construction administration itself, they are clients. Therefore the legitimization should be at the level of the USSR Gosplan or the government so that there will not arise questions similar to the ones we are discussing today. In the plan for the ministry's contract, in which the construction of the MZhK participates, housing construction should be envisioned for the enterprise and the construction of the MZhK should be envisioned separately.

In the country there exists a policy whereby at each enterprise we construct dormitories for youth. Such things are financed. Nobody will ask the question: is this legitimate or not: so let a certain amount of money be added to this sum for the MZhK. Otherwise the MZhK will not be able to live long.

G. V. Polyakov: We must do everything necessary for the MZhK to be a reality. Today it is an exceptional phenomenon. But the youth residential complex is in the right place, it is appropriate and it is necessary. The MZhK is a necessity and it fills the vacuum in solving the youth problems. Therefore questions of its legitimization and spreading are especially important.

"The Fact That the People Together Have Overcome the Difficulties of the Establishmnet and Development of the MZhK Will Not Go Unnoticed...."

EKO: We are speaking about the future of the MZhK. What are the role and prospects for the development of public self-management in the place of residence?

V. Yu. Golubtsov: During 10 years one-third of the residents in our Kaliningrad MZhK have moved. This was mainly because of architectural imperfections in the plans for the residential buildings. We have set the goal at sites allotted to the MZhK to construct the maximum of housing. In the first building there was a large number of single-room (11 square meters of space per room) and double-room (23.5 square meters) apartments. They included a small kitchen, a small toilet and a bath. The growth of the birth rate was not taken into account. And it increased sharply because the young people had the opportunity to obtain, for example, not a single-room, but a double-room apartment. We understood their temptations, and in the second and third buildings the percentage of two- and three-room apartments was increased. Some of the residents moved there. The remaining ones either obtained apartments at their enterprises or began to look for ways of making changes. Now of the 909 apartments 331 are occupied by new families who have not gone through the school at the MZhK. With each person wanting to exchange we conduct a conversation and discuss what the MZhK is. And the people either begin to think about whether it is worth it to move here or, conversely, they are glad to move. In this case we continue our work and familiarize them with the charter regulations, rules and duties of the MZhK members. The MZhK in Kaliningrad is now made up of people of various ages and it is similar in composition to any standard microrayon. But the MZhK system works. At the same time the MZhK collective is getting older, and the children are growing up. The adolescents have suggested creating their own club and they are

gradually beginning to influence the structure of the council. They are assisting in organizational problems as well as economic ones, that is, the second generation, the second wave of MZhK members has arrived.

EKO: And what will happen in 20-30 years with the Sverdlovsk MZhK? How do you imagine it?

G. N. Karelova: We think that it will be an ordinary rayon of the city, but with more efficient organization of life, leisure and education of children, and a higher level of culture of human communications. Juvenile delinquency will be lower than the average in the microrayon in spite of the fact that there will be many juveniles here. We are doing a large amount of work now so that this is the way it will be. First and foremost, at all stages we are planning to conduct sociological research on the collective in order to constantly check on its development and to prepare for the transfer of the family from one condition to another. For example, today we are devoting most of our attention to preschool children (average age of 4.2 years). We will have to envision the time when the main age will be school age. Not only the organization of children's work, but also the organization of all spheres of the life activity of the MZhK will be different. It is also necessary to envision a changeover and an influx of children of adolescent age. Our task is to arrange things in such a way that the development of the collective does not proceed randomly, as in the ordinary microrayon, but according to an earmarked course, in an organized way. The MZhK collective will monitor this process and control it.

One must say that practically everyone who has entered the MZhK has already understood that if he has lived in another microrayon he would never have been able to receive the kind of neighborly support that we have. Who will help the family in rearing children? Neighbors who are joined together into cooperation, who are related to one another not only by formal communication, but by friendly human contact. The fact that the people know one another and have overcome the difficulties of the construction as establishment of the MZhK in its youth will not go unnoticed. The purity of the relations will remain.

B. S. Pavlov: I wish to return to social consequences of the formation of a collective all in the same age group. Of the 700 children in this microrayon there are six adolescents. With 5-7 years there will be a flood of teenagers. And during these years the birthrate will drop. There are not enough of the most important elements in the social rearing of children--older comrades, grandfathers and grandmothers.

Ye. M. Korolev: It is not the MZhK that has taken away the grandfathers and grandmothers, but the system of modern production. A grandmother who is, say, 45 years old receives more earnings than a young person who has just entered life. She does not want to spend her time changing diapers. And this is disadvantageous to the state.

EKO: And what will happen to the kindergartens?

V. P. Mikotin: Kindergartens are planned in keeping with the normatives for the entire microrayon, and they will not go empty. In the extreme case we shall use them for circles for residents of the microrayon. And the unique school complex of the MZhK will make it possible, as a result of organizing the pedagogical process, to make up for the lack of children of various ages. I think that when everyone who lives in the MZhK is about 50 years old it will become a territorial methodological center which helps to organize and introduce various innovations in the place of residence.

Ye. M. Korolev: We should not forget about the fact that our public areas are plans taking into account the "aging" of the contingent of residents. Moreover, the residential rayon in our area is intended for 70,000 residents. That is, the MZhK here will comprise only 10 percent. In terms of the composition of the residents this will be an ordinary rayon.

A. G. Aganbegyan: What conclusions can we draw?

The housing problem in our country is not solved yet. Youth are in an especially difficult position. It cannot make a claim for housing before the permanent personnel. As a rule, the young person receives an apartment within 5-10 years after coming to work. Of course, this does contribute to establishing a family. Yet it is largely because of the enlistment of youth that production develops and new rayons are assimilated. An apartment is exceptionally important for a young family. It is from this standpoint that the organization of the second flow of youth construction, not at the expense of the first, but in addition to it and with its reinforcement, seems unusually important. The youth movement that has arisen in the country at the present time, as we can see from the discussion, is solving diverse problems. It is succeeding in combining a number of aspects. These include improving housing conditions for youth, which is especially important, educational influence, additional stimuli are being created for labor, labor skills are being developed, young people are participating in public self-management, life is being transformed, and the children are being better educated.

This new form has immense possibilities, but there are also unsolved problems. First of all, the organizational form of interrelations with the builders has not been worked out. Several solutions are possible here. For example, the creation of youth construction administrations.

The solutions to many problems depend on legitimizing this form. This includes financing, planning, and accounting for the age peculiarities of future residents of the MZhK.

One must say that the matter is exacerbated by the specific position of the builders. Their labor is undervalued, especially in Siberia. The wages are lower in construction than they are in a number of branches of industry, and the wages are especially low for engineer-builders and engineering and technical managers. And the labor turnover is higher here than it is in industry. Labor productivity is inadequate, even when the mechanisms are fairly good. In construction the down time of equipment is greater than it is in many other branches. Under these conditions it is necessary to temporarily send into construction untrained workers from other branches--by analogy with

agriculture. Therefore enlisting for construction an organized, relatively well-trained labor force which is oriented toward the achievement of special tasks is extremely important. Today this includes construction of housing, including for themselves, and tomorrow this will mean enlisting forces for the reconstruction of enterprises. The builders are not coping with this problem, it has become crucial, and the stage of mass reconstruction in the country's national economy has arrived.

At his meeting with the voters of the Kuybyshev Electoral District in Moscow General Secretary of the CPSU Central Committee K. U. Chernenko said: "All of us, of course, understand that the housing problem is far from solved, and we shall be searching for ways of further improving living conditions." And this is to be done not only through state construction. It seems that one of these ways could be the youth residential complexes. This undertaking should be supported in all ways. It can have social consequences that are important for the country.

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RESPONSIBILITY OF PUBLIC MANAGEMENT AGENCIES URGED

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[Article by V. A. Volkonskiy, doctor of economic sciences, Central Economics and Mathematical Institute of the USSR Academy of Sciences (Moscow): "Economic Responsibility and Public Property"]

[Text] In his speech at the extraordinary (February) 1984 Plenum of the CPSU Central Committee, K. U. Chernenko said: "The system of management of the economy and our entire economic mechanism is in need of a serious restructuring. The work in this area has only begun." One of the main goals, in our opinion, is the creation of a system of economic responsibility of the economic management agencies, officials, industrial collectives and individual workers, and their motivation to maximally increase the effectiveness of economic activity.

The Specific Features of Economic Responsibility

Economic responsibility is distinguished from legal or administrative responsibility (although it is provided with their help) by the fact that it is associated primarily not with abuses and not with violations of particularly, clearly formulated norms, but with the quality and results of daily economic activity. Sanctions for the violation of agreements constitute one of the forms of economic responsibility, but far from the most important one. In economic practice, actions which are clearly detrimental to the society, individuals or organizations should be punished.

Strictly speaking, only optimal decisions, which correspond to the highest national economic effectiveness, cause no harm to the society, on whose behalf the manager is disposing of state funds. The yardsticks of the economic effectiveness of measures are their contribution to the resulting cost accounting (khozraschet) indicators--profit, net output. It is precisely these generalizing indicators which one naturally uses as the basis for economic responsibility.

The difficulty with establishing economic responsibility consists in that most of economic practice is comprised of actions and decisions, each of which is taken individually, and it is impossible to unambiguously assert that it does

or does not satisfy the requirement of the normative effectiveness of the utilization of resources, not to mention whether or not it is the optimal. Therefore under the conditions of expanded independence the economic organization must have the "right to make mistakes." But this certainly does not mean that anyone has the right to "forgive" these mistakes, but it only means that the final results are the results from a sufficiently long period of time. Economic responsibility is cost-accounting responsibility. It consists in the measure of incentives or sanctions associated with the economic results of the activity of the collective or the individual worker.

The need to provide for economic responsibility in a socialist society ensues from the very nature of public socialist ownership of the means of production and from the requirements of providing for more effective utilization of all national economic resources. Improvement of the management of the national economy requires more concrete development of the economic mechanism, which is capable of realizing the advantages of public, primarily state, property.

"Forgive a Hundred Million! Your Cost Is...."

In a socialist society all citizens are owners of state property. Public property presupposes that there will be no arbitrariness or subjectivism in disposing of it. As lawyers say, this is divided and limited ownership. Yet the existing economic mechanism is clearly unsatisfactory from the standpoint of providing for economic responsibility for the results of management activity. In the area of civil and criminal law, the state law is in effect unwaveringly. A person who has stolen 100 rubles cannot hope to ask the court to forgive him and not impose any punishment. The court does not have the power to forgive a criminal, it can only make his punishment more or less severe, depending on mitigating or extenuating circumstances. Why can the director of a poorly operating enterprise go to the ministry and in December have a completely realistic planning assignment reduced? Why can a minister take circulating capital away from an enterprise that is operating well and transfer it to one that is operating poorly as if it were his own property? In other words why in the area of economic law can one official forgive or not forgive another for his negligence, his inefficiency, which has cost the national economy millions of rubles? For redistribution of centralized funds from enterprises that are operating well to those which expend this money inefficiently is a violation of the law of public ownership of these funds in favor of the collective of an enterprise which is operating poorly.

The collectives of the enterprises also have certain rights with respect to public property, the rights of the minister should thus be clearly defined by law. This delimitation of the rights and responsibilities is possible on the basis of the dissemination of principles of cost accounting and normative distribution of incomes in the relations between the economic units and the higher agencies.

How To Combine Departmental and Territorial Interests

Departmental and local tendencies are quite justifiably unmasked in our press as serious negative phenomena which stand in contradiction to the idea of socialist management of the economy. But then they frequently forget that

these phenomena are only the reverse side of a necessary and therefore quite positive aspect of the organization of any labor process, namely division of labor. Each collective, particularly the collective of a management agency, is obliged to be concerned first and foremost about successful and conscientious performance of their work and their tasks. And the desire of the manager to acquire better resources and to create reserves of materials that are in short supply in order to protect himself from possible interruptions and supply, his desire to have his own transportation, his own loading and unloading equipment, his own repair base and so forth, to achieve for his enterprise and his department the best social conditions and higher wages, and to attract and retain the best personnel--all this ensues from the need to be very concerned about one's work.

Thus there arise "one's own" interests on the part of departments and economic agencies. And this certainly does not mean "placing personal or group interests above the interests of the society," since it is precisely the fulfillment of the plan of one's own enterprise or department, increasing the effectiveness of one's own production, that is the main duty of each manager to society. The manager is obliged to understand the difficulties and the needs of the entire national economy, the entire society, and he should not demand for himself or for his subdivision the "easy life," or extra privileges, but he must provide himself with everything necessary in order to fulfill the plan and to conscientiously carry out his tasks, for otherwise he will be not a manager, but someone who makes idle talk. And if when striving to perform his own work and to carry out his own plan the manager of the enterprise or the ministry is forced to create essentially a "subsistence business" one can hardly blame him for this. For he cannot force his suppliers to efficiently fulfill their delivery agreements and he cannot guarantee that in the next year the plan of his enterprise will not be increased if this year he sharply increases the output of products. Obviously it is not the demand to ignore the internal interests of branch, territorial and other management agencies, but their unequivocal admission¹ and clear-cut quantitative determination of those boundaries within which the complaints about the utilization of public resources are legitimate--this is the main path for fighting against departmental and local interests and the tendency toward "naturalization" of the economy and similar phenomena.

The methods for providing for centralization of economic management should apparently also be changed. While previously the system of narkomats (and then ministries) and main boards (now all-union production associations) made it possible to carry out centralization to a considerable degree as a result of individual prescriptions which were directly coordinated with the center, now every department to an ever greater degree is forced to utilize instructions, methodological provisions and guidelines which are mandatory for all enterprises that are included in its system or even for a larger range if one is speaking about the functional committees and departments. This sharply limits the independence and initiative of the basic cost-accounting unit and at the same time does not lead to a strengthening of centralization.

One of the most poorly developed areas of economic law is the area of planned management. According to the testimony of V. P. Shkredov, "historically the development of Soviet economics and law...took place in such a way that the

actual legal regulation extended mainly to the civil-legal sphere of economic life, while the sphere of planned management in general and as a whole remained for a long time within the authority of concrete and individual administrative acts, a boundless multitude of instructions and guidelines, and all kinds of individual prescriptions." In essence this most important area has "fallen from the sphere of real legal regulation. And herein lies one of the main reasons for the spreading of voluntarism in planning."²

For the Sake of Future Success It Is Useful To Undermine the Plan....

Shortcomings in the existing economic mechanism, one of the most important of which is the lack of a clear-cut, legally formulated delimitation of the rights and responsibilities among the enterprise, association and ministry, lead to a situation in which their interrelations assume the nature of a kind of "business game" in which the enterprise strives to obtain the least difficult plan, and the ministry tries to "impose" a plan that is more difficult. The "optimal strategy" for the enterprise in this "business game" can be reflected in the form of a paradox: if one is to enter the ranks of the leading enterprises it is necessary at least once to make a real mess of the plan. It is simple to unravel this paradox. Let us say that the production cost at the enterprise is 86 kopecks per ruble of output. Each year it is planned to reduce the production cost, say, by 2 kopecks. The enterprise is operating well and within 5 years the production cost of its products is already 76 kopecks. But all the reserves are exhausted and it possible to fulfill the plan only by an extreme exertion of all efforts. For the next year it will be planned to further reduce the production cost ("from the level achieved!"). Let us say that it is impossible to essentially change the assortment of products. There is nothing left for the enterprise to do but struggle by each year while weakening the plan, fulfilling it any old way they can, thus creating a tense atmosphere in the collective, in brief, obtaining the reputation of a backward enterprise. Under these conditions one of the ways of convincing both the main board (VPO) and planning-economics administration of the ministry that the enterprise cannot continue to work under the existing conditions might be to essentially underfulfill the annual plan, say, by 10-15 percent. Then the ministry and the VPO will be convinced that the plan actually will not be fulfilled and they will be able to revise it. As a result, for the next year the enterprise will receive a "beneficial" planning assignment and again, annually improving its indicators, it will become one of the leading ones. Such a process of regulation is called a "saw" in the theory of servomechanisms.

Under the conditions of normative formation of wage funds and economic stimulation which creates in the enterprises and associations an interest in expanding the output of products there is no longer any point in establishing in their plans directive value indicators which embrace the entire volume of production. According to the conditions of the economic experiment, in the five industrial branches only the assignments for the most important kinds of products on the product list are established by directive. The indicator of the commodity output is retained only as a calculation indicator.

Extending these conditions to other management branches and gradually reducing (as the balance in the national economy improves) the number of products whose

production requires directive assignments can in time remove from the agenda the problem of motivating the enterprises to reduce their capabilities and to receive plans that are not difficult.

Responsibility is Realized in Cost Accounting

What are the principles which, in our opinion, should lie at the basis of the construction and improvement of the system of economic responsibility which precludes arbitrariness and subjectivism in disposing of and utilizing public property?

They are consistently implemented principles of cost accounting and a normative approach in planning and management. In Soviet economic science we have gained an understanding of cost accounting not only as a system of formal accounting for results and expenditures, but also as a method of management of the national economy. With this understanding cost accounting presupposes economic incentives and responsibility on the part of each production unit for the cost-accounting results of its activity.

In order to realize the system of economic responsibility, we must have, in the first place, a mechanism for providing for balanced national economic plans, in the second place, a mechanism which promptly develops an objective evaluation of the results of the activity of management organizations from the standpoint of national economic effectiveness and, in the third place, a mechanism which establishes a constantly effective link between the distribution of resources and production assignments, on the one hand, and the results of management activity, on the other.

We shall not consider the first two of these conditions in detail because of the length of the article. But in further discussion of the principles of strengthening the system of economic responsibility it is presumed that these conditions are met or that the corresponding mechanisms are being improved along with a deepening of the principles of cost accounting. We are speaking about improving the mechanisms for developing five-year and annual plans and mechanisms which develop economic yardsticks--prices and evaluations of labor and material resources. These indicators do not reflect national economic effectiveness reliably enough and they are not used very much as a basis for distributing resources and stimulating cost-accounting units. And since they are not included (or almost not included) in the basic systems for planning and stimulation, the economic organizations and management agencies do not feel interested or responsible for improving them. This vicious circle can be broken only through a comprehensive transformation of the economic mechanism, including measures for deepening cost accounting and developing commodity and monetary relations. It must be noted that although improvement of the basic systems of the economic mechanism can be carried out only comprehensively and therefore in a short period of time, then it will undoubtedly be necessary to have a lengthy process of parallel improvement of economic levers (elimination of the differentiation of normatives, state subsidies and so forth) and of the branch structure of management.

How To Bring Various Kinds of Evaluations Closer Together

In the national economy there are now two systems which develop the evaluation of the activity of the enterprise or association: the price mechanism and the cost-accounting indicators, which measure the actual results and expenditures, and the mechanism for developing the plan and comparing the actual results of the work with the planned results. It has become a matter of course in economic literature to indicate the lack of coordination of these two systems.

The evaluation of the work of the production unit in terms of the degree of fulfillment of the annual plan reflects improvement or deterioration of the work of the labor collective in the given year. But it cannot reflect the level of effectiveness of the utilization of all the resources assigned to it since the plan itself must reflect this level. If an association with a low level of effectiveness of the utilization of resources is given the same plan as an association which has achieved a high level of effectiveness, this will be a poor plan since it will probably be doomed to underfulfillment (it does not take into account the actual inertia-filled process of increasing effectiveness).

It is possible to discuss envisioning a higher growth rate for the first enterprise, in keeping with its greater reserves, than for the second.³

Naturally, the same degree (percentage) of fulfillment in the two associations can correspond to quite different levels of national economic effectiveness. A high percentage of fulfillment of the plan at an enterprise that is less profitable can show an improvement in the work of its collective, but only in comparison with its own indicators, and not in comparison with those of a highly profitable enterprise. At the same time, cost-accounting indicators (profitability, labor productivity for net output) reflect precisely the level of the effectiveness of the utilization of resources. Herein lies the point of the repeatedly suggested principle of incentives not "for the plan" but "for the level."

The task is, by improving cost accounting and cost-accounting measurements of the results and expenditures, to eliminate their diversion (which exists) from the indicators of national economic effectiveness. In order for the cost-accounting indicator (profit or net output) to objectively reflect the contribution of the production unit, its economic ties with other organizations should be based on mutual material responsibility and equivalent exchange. Obviously, the interrelations between the enterprises and the state budget, reserves and other funds of the state and branches cannot be equivalent since the state and the branch agencies have the majority of nonproduction expenditures. But improvement of the mechanisms for distributing the net output and profit in recent years has been directed toward making sure that the corresponding deductions have been determined by stable and unified (if only within the framework of the branch) normatives, in other words, they have been of the nature of taxes. Normatives will be used correspondingly for determining that proportion of resources which remains at the disposal of the economic complex.

The Normative in the Role of a Legal Regulator

As we know, in the practice of controlling economic processes one should use both a system of unified rules and normatives, which provides for centralization in planning and management and the possibility of comparing and contrasting production units, and differentiated and individual systems of norms (for example, norms for the expenditure of labor and materials), special assignments and limits which make it possible to take into account the differences in the concrete conditions for their operation.

A considerable proportion of the normatives are established by cost-accounting organizations for purposes of internal management.

Centralized, insofar as is possible long-term, and legally formulated establishment of unified rules and normatives which are the same for all economic organizations corresponds to the nationwide nature of property relations as opposed to departmental and local tendencies. If the establishment of normatives is not conditioned by economic (cost-accounting) responsibility, the possibility of their differentiation always involves the danger of subjectivism and arbitrariness, and they can become the object of trade between the agency which establishes them and interested production units. The possibility of flexible application of these principles can be provided, for example, at the level of branch management through the creation of special financial funds and reserves of the ministries, which are formed from deductions from profit or wage funds of the enterprises according to unified long-term normatives. The volumes of these funds would be a quantitative limitation on the rights of the ministries to distribute resources among the enterprises and thus differentiate normatives taking into account differences in the conditions of their activity.

This pertains primarily to wage funds (FZP) and material incentive funds (FMP). A number of CEMA countries use the normative method for the formation of the wage fund, depending on the net output (ChP). In the USSR a similar method is used in keeping with the decree of the CPSU Central Committee in the USSR Council of Ministers, "On Improving Planning and Stepping Up the Influence of the Economic Mechanism on Increasing the Effectiveness of Production and Improving the Quality of Work," of 12 July 1979 for forming the FZP. But the application of this method in the USSR has essential differences from its application, say, in Bulgaria and Hungary, where a considerable amount of experience in its utilization has already been accumulated. In the first place, as the basic fund-forming indicator we use not the actual net output (ChP), but the normative net output (NChP) which is not directly related to the summary and cost-accounting indicators of the operation of the enterprise which characterize its national economic effectiveness, and it is not at all controlled by the consumers of the products. In the second place, in the aforementioned CEMA countries they have established a normative link not between the absolute volumes of the FZP and the ChP, but between their relative increases. Because of this it becomes possible to establish a unified normative for the branch or even for the group of branches. Thus in Hungary the unified normative is established legislatively for practically all of the processing industry.⁴ In the USSR the normatives which determine the FZP and the FMP are actually established in a differentiated way (and even

individually for each production association) and they change from year to year. An important step forward in this respect was taken in connection with conducting the large-scale experiment in five industrial branches. Thus according to the conditions of the experiment in the electrical equipment industry they have established a unified normative for increase of the FZP (of 0.35 percent for each percentage point of increase of the NChP) and unified normatives for growth of the FMP (an increase of 5 percent for each percentage point of reduction of expenditures per ruble of commodity output and a reduction of 3 percent for each percentage point of underfulfillment of the delivery plan in keeping with the commitments of the agreements).

Resources--To the Best!

In order for cost-accounting indicators to reflect not only annual, but also long-terms results of the operation of the economic organizations, the resources left to them for expanding production should also be distributed in keeping with the effectiveness that has been achieved. In other words, a condition for strengthening the system of economic responsibility is the distribution of profit according to stable unified normatives.

When there arises the question of whether to use additional resources (whose volume is always limited) for a highly effective business or for an enterprise that is barely making ends meet, we are frequently inclined to think that it is necessary to "help" the backward one. Resources for expanding production should be granted, as a rule, to those production enterprises from which the society can receive the greatest return. Otherwise the rule of "equality with the leaders" becomes "equality with the laggards." In those cases when it is necessary to depart from this rule out of social or other noneconomic considerations, the money should be taken from funds that are especially intended for this so that the society will know which funds are being used for which purposes and so that it will be possible to quantitatively measure the economic effectiveness of the operation of each production unit. The lack of economic responsibility in the area of distribution of capital investments leads to such negative phenomena as dispersion of funds, prolongation of construction times, arrears in the improvement of technology, and so forth. The principle of distribution of resources in direct dependence on the effectiveness of the operation of the economic organizations is necessary for strengthening long-term selective tendencies in the economy which provide for raising the level of economic management and technical perfection.

Selection Should Be Precise

As a rule, the term "selective policy" has been applied to the state policy for redistributing capital and other resources and creating various privileged conditions for singling out priority branches which determine technical progress in the national economy. Although on the whole this policy has undoubtedly been justified, especially under the conditions of the branch principle for constructing the system of management of the national economy, as the experience of the USSR and the CEMA countries shows, it sometimes leads to disproportions and to serious arrears of nonpriority branches, which begin to have a negative effect on the overall development, thus impeding also the development of the priority branches. In an age of rapid scientific and

technical progress, the implementation of such branch selection is clearly inadequate. An important role is coming to be played by such decision mechanisms which capture the mutual influence of various production associations and enterprises both with and outside the branch.

During a period of intensive development the effectiveness of the national economy is determined to a considerable degree by the organization, qualifications and motivation of the collectives of large enterprises and associations. The basic nucleus of this collective is primarily the nucleus of the management personnel who have become closely linked to it, value its prestige and authority, and identify their interests with the interests of the enterprise--this is the inestimable potential of technical progress. In order to provide for a full return from such a collective and in order for this collective to be motivated to carry out new developments, to introduce into production new products, new progressive technologies and methods of organizing production, and so forth, it must have extensive rights and authority.

A smooth, effectively operating economic collective or staff of an administrative agency does not arise out of the blue, regardless of how great the need for it may be. The appearance of the enterprise and the expansion of its scope and capabilities is a lengthy process of selection of personnel, accumulation of experience by the workers and, even more important, by the workers of the staff for technical and economic management, accumulation of various kinds of equipment in efficient proportions, and so forth. The long-term results of the development of the national economy in the age of scientific and technical progress depend to a decisive degree on the selective process of expanding the field of activity of the collectives that are operating most effectively, especially their administrative staff, and narrowing and limiting the development of economic complexes that are causing losses to the national economy.

As we know, according to the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, a policy is established for normative distribution of profit. But the normatives which determine the proportion of profit that is left at the disposal of the enterprise (or branch) are not established before the development of the plan, but are calculated on the basis of a centralized plan for its expansion and reconstruction. These normatives, of course, turn out to be individual for each production complex and unstable.

In many cases in which it would seem to be necessary to differentiate normatives for various enterprises in order to account for differences in the conditions of management, it is possible to make do with normatives that are the same for all economic units but are differentiated according to various objective indicators. Thus the establishment of the unified normative of amortization deductions for an enterprise with old equipment which annually requires considerable sums for renewal and for a recently constructed plant is inexpedient. But this contradiction is eliminated if within the limits of an overall stable normative of amortization one establishes the proportion of deductions into centralized funds which depend on the age of equipment, applying one formula or another for accelerated amortization.

Now unified normatives are used to form only funds for the development of production (FRP) but actually the enterprises do not dispose of them independently since the FRP is not supported with resources. An important step forward in increasing the significance of the FRP was made in connection with conducting the large-scale experiment in five industrial branches. According to the conditions of the experiment, on the state level there is to be a restoration of the division of capital investments into centralized and noncentralized so that the FRP will have equal rights to be provided with material resources. The next task is to increase the share of the FRP in the overall volume of industrial capital investments--in such a way that in the end a greater part of the capital investments for reconstruction of production will be financed through internal (from the FRP) and borrowed funds of the enterprises and associations. This is especially crucial in connection with the recently adopted course toward increasing the proportion of reconstruction and modernization of production in the overall volume of capital investments.

Combining Rights on Paper and in Fact

It is a fundamental truth that a legal proclamation of one right to property or another is inadequate for the corresponding property relations to become a real economic fact. A clear illustration of this point is the legally established right of the consumer enterprises to impose sanctions on the supplier for violation of delivery conditions. It turns out that when there is a shortage of a given kind of product and "hegemony of the supplier" the consumer takes advantage of this right in only 10 percent of the cases, being afraid of "ruining relations."

The legal system formulates and reinforces those rights and responsibilities which lie in the political and economic structure of the society. This is only one of the components of the overall system of production relations and superimposed elements that provide for the realization of social relations, particularly state and property relations. But without this reinforcement and improvement one cannot hope for effective operation of the economic mechanism. It is called upon to provide for irreversibility of effect of the laws of economic responsibility, which would make it possible to reduce to a minimum subjectivism and voluntarism in disposing of public property. This was expressed well by a well-known Soviet economist, A. M. Birman, who wrote in 1967: why can the Gosplan workers establish for a plant an unrealistic, unbalanced plan, and the plant director has the opportunity to accept it? And he answered: It is necessary to have economic conditions which would leave only two paths for the enterprise: either to work well or to close down....

The uncompromisingness of this requirement may seem to many incompatible with the socialist principles of management. And yet even during the period of the financial crisis of 1922 V. I. Lenin: "The financial crisis is shaking the institutions and enterprises, and those that are not strong will be the first to break down.... The financial crisis makes it possible to reveal and purge the managers who are not doing their work properly."

Of course a financial crisis as a mechanism for selection in singling out the economic organizations according to the indicators of economic effectiveness

is now unacceptable, but the need for this socioeconomic function remains in full force. It can be envisioned as a normal, everyday function of the economic mechanism.

Improvement of social relations in general, and economic relations in particular, is to a considerable degree a process of training, self-training and mutual training. This pertains to the greatest degree to control of the economy. Without mistakes and without risks and omissions there can be no training and the quality of economic management cannot be improved. Therefore one erroneous decision cannot determine the quality of management, which is revealed only during the course of a fairly long period of time. The labor collective, the management staff of the enterprise and the economic manager must have the opportunity to rectify their mistakes, to overcome temporary failures, and to draw conclusions from strategies that have not justified themselves. The mechanism of economic responsibility meets this condition to the greatest degree.

Thus the mechanism for extending credit for circulating capital envisions postponing the withdrawal of internal funds of the enterprise in the event of underfulfillment of the plan if this underfulfillment was not the fault of the enterprise. The next step in the realization of the economic responsibility of an enterprise that has not met its financial commitments is its changeover to special conditions for credit and accounting. As a rule, in this case the enterprise is given assistance from the ministries, its planning assignments are revised, and frequently it comes to the point of replacing the management. Only if the measures that are taken do not lead to a correction of its financial situation, according to the decree adopted in August 1954, the enterprise must declare its insolvency with a subsequent liquidation of it.⁶ But things never reach this point because this is not allowed by the ministries and other higher agencies. With respect to a large enterprise there is generally no question of closing it down. But it is quite realistic to raise the question of dividing up an association which is not able to provide for the profitability of its enterprises. Then the unprofitable enterprise becomes a production unit of another association whose management is capable of carrying out its reconstruction and handling its material, labor and technical potential more efficiently. In Bulgaria after the reform of the economic mechanism in 1980 a number of enterprises which were not able to provide for the necessary profitability were deprived of their independence and were changed over to the position of structural units of effectively operating associations.

In conclusion we must clearly stipulate that the realization of the principles described above for strengthening the system of economic responsibility is possible only under the condition which was pointed out above but was not discussed in detail because of the limited length of this article. We are speaking about improving mechanisms which develop economic yardsticks--prices and evaluations of labor and material resources. At the present time these indicators do not reflect the national economic effectiveness with sufficient reliability and are almost never used as a basis for daily evaluation of the effectiveness of planning decisions, redistribution of resources or stimulation of cost-accounting units. And since they are not included (or almost not included) in the basic systems of planning and incentives, the

economic organizations and management agencies do not feel motivation or responsibility for their improvement. This vicious circle can be broken only through a comprehensive transformation of the economic mechanism, including measures for deepening cost accounting and developing commodity and monetary relations.

FOOTNOTES

1. For more detail concerning the accounting for branch and territorial goals and interests and manifestations of departmental interests see: Mayminas, Ye. Z. and Tambovtsev, V. L., "Interbranch and Regional Aspects of the Formation of Goals of Socioeconomic Development" in the book: "Organizatsiya Upravleniya" [Organization of Management], Moscow, "Ekonomika", 1979.
2. Shkredov, V. P., "Ekonomika i Pravo (O Printsipakh Issledovaniya Proizvodstvennykh Otnosheniy v Svyazi s Yuridicheskoy Formoy Ikh Vyrazheniya)" [Economics and Law (On Principles of Investigating Production Relations in Connection With the Legal Form of Their Expression)], Moscow, "Ekonomika", 1967, p 88.
3. In this sense in planning it is necessary to account for the level achieved. Shortcomings in planning "from the achieved" which are so frequently criticized in our press are related to the mechanical establishment of the same percentage of growth for all enterprises or the same level of increase which was achieved in the past year without taking into account the reserves that remain with the enterprise.
4. In 1983 unified normative was introduced which relates the growth rate of the FZP with the profitability of production.
5. Lenin, V. I., "Poln. Sobr. Soch." [Complete Collected Works], vol 45, p 113.
6. See the decree of the USSR Council of Ministers and the CPSU Central Committee of 21 August 1954, "On the Role and Tasks of the USSR State Bank."

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COMPREHENSIVE PROBLEM-SOLVING URGED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 112-114

[Introduction to articles that follow: "The NPO: Crucial Problems Should Be Solved Comprehensively"]

[Text] The decree of the CPSU Central Committee and the USSR Council of Ministers of 18 August 1983, "On Measures for Accelerating Scientific and Technical Progress in the National Economy," envisions, among other measures, the development and improvement of the activity of scientific production associations [NPO].

At the present time there are more than 250 associations of this type functioning in the USSR. They are extremely varied in terms of the subdivisions that are included in them, their range of stages of the scientific production cycle, their "sphere of influence," their jurisdiction and the nature of the final product. But with all this diversity of types and forms, the activity of all scientific production associations serves one group of problems: the creation and introduction of the latest models of products and progressive technology, the reduction of the length of the process of "research--production," and the provision of high quality and effectiveness of technical equipment that is developed and assimilated within the framework of the association and also in branches (subbranches) that are their field. During a relatively short period of time (the first NPO's were created in 1968) the scientific production associations have already demonstrated their advantages as a new organizational forum for connecting science and production. Within the framework of the NPO quality improves, the time periods for conducting scientific research and experimental design work decrease, the effectiveness of new technical equipment increases, and its dissemination is accelerated. This is shown, in particular, by the results of a comparative analysis conducted by the State Committee for Science and Technology of the indicators of the operation of NPO's and scientific organizations of Leningrad that are not included in associations.

In the chemical industry the NPO accounts for about 21 percent of the expenditures on research and development in the branch. At the same time the utilization of scientific research and experimental design work carried out by scientific production associations has provided for more than 28 percent of

the economic effect from the introduction of new technical equipment in the branch. In the Plastpolimer NPO during the period from the formation of the association (1969) through 1980, the economic effect from the introduction of developments per 1 ruble of the expenditures has increased 1.8-fold. As a result of the elimination of organizational and economic barriers, in the NPO there are shorter times during which documents and experimental models remain at the junctures between the stages of scientific research and experimental design work and introduction, and it becomes possible to conduct work in parallel in various stages of the cycle "research--production." For example, in the NPO Pozitron along with the development of items in the scientific research institute, in the special design bureau and at the experimental plants, automatic lines are being created for manufacturing them, and at the plants with series production they are preparing for the assembly and assimilation of these lines.

Within the framework of the NPO more favorable conditions are created for the organization of temporary subdivisions for the most important scientific and technical problems, the need for whose organization was indicated in the decree of the CPSU Central Committee and the USSR Council of Ministers, "On Measures for Acceleration of Scientific and Technical Progress in the National Economy"--comprehensive creative scientific production brigades and groups.

Indicators of Activity of Scientific Organizations of Leningrad, 1980

	Scientific Organizations	
	<u>Independent (37)</u>	<u>Included in NPO's (12)</u>
Proportion of most important work, %	6.1	17.3
Author's certificates received		
per 100 workers	1.4	3.1
Effectiveness (ruble/ruble)	1.57	2.3
Average expenditures per one project		
(thousands of rubles)	123.3	168.5

According to the data of Academician G. I. Marchuk, the realization of the principles on which the construction of the production and organizational structure of the NPO are based has made it possible to reduce the time periods for creating new technical equipment to two-thirds to one-half the previous level.

A new impulse for the activity of scientific production associations has been provided by the large-scale economic experiment that has been conducted since the beginning of 1984. In the five branches encompassed by the experiment such measures were applied to the NPO as directed planning of the output of new products, including experimental and head models that are manufactured within the framework of scientific and technical programs; expansion of the rights in the area of price-setting for new technical equipment; the formation and utilization of funds for economic stimulation of scientific and technical progress--the unified fund for the development of science and technology, the fund for the development of production, money intended for bonuses for the creation and assimilation of new technical equipment (in the electrical

equipment industry all of them are included in a unified material incentive fund); the new policy for constructing normatives for expenditures on scientific research and experimental design work and the wage fund of scientific and technical organizations included in the NPO; additional bonuses for participants in the development and assimilation of new, highly effective items and increased material responsibility for failure to fulfill assignments in the area of scientific and technical progress.

Along with these changes, which pertain equally to all associations included in the experiment, in the second half of 1984 they began to check on the expediency of changing individual scientific and production associations over to planning their activity in the branch "science and scientific service," which envisions, in particular, a narrowing of the volumes of "purely production" activity of the NPO and a corresponding reduction of the directive assignments in the area of series-manufactured products.

But considering the problems of the functioning of the NPO in light of the decisions of the subsequent plenums of the CPSU Central Committee, one cannot but note that the development of scientific production associations is taking place slowly, and their potential capabilities are far from being fully utilized. It will be necessary to solve problems of selecting an optimal structure for the NPO, organizing cost accounting in them, and so forth. The articles published below are devoted to these problems.

FOOTNOTE

1. PRAVDA, 9 December 1983.

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UNDEFINED POSITION OF NPO DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 115-130

[Article by K. I. Taksir, doctor of economic sciences, Institute of Economics of the USSR Academy of Sciences (Moscow): "Time To Help the 'Centaur'"]

[Text] In ancient Greek mythology the centaur was a being with the head, torso and arms of a man, and below--the trunk of a horse. The centaur would have a difficult time in our day: neither a man nor a horse...he would not be allowed in a residential building. And there would be no place for him in the stable. Thus, in the figurative terms of one of the general directors, the scientific production association (NPO) is in the position--of a centaur. It is difficult for them for their system of planning, stimulation and financing, frankly, is far from always directed toward solving the main problem--acceleration of scientific and technical progress. Because of this the potential capabilities of the NPO are utilized only partially.

Seventeen years have passed since the time of the creation of the first NPO's. Life has proved their high effectiveness. Because of them the cycle for the creation and introduction of new technical equipment and advanced technology has decreased significantly--to an average of no more than two-thirds to one-half. This is taking place as a result of having individual stages of the process take place at the same time, having all participants in the cycle working jointly, and exercising stage-by-stage control over the course of the development.

Significant success has been achieved by the republic NPO for powder metallurgy in Belorussia. It is directly under the jurisdiction of the republic Council of Ministers and is an interbranch regional association which has created sections at 21 industrial enterprises. Thus with its help the Minsk gear plant is annually producing 370 tons of items of increased durability. The effect from the introduction of many developments of the NPO is expressed in six- and seven-digit figures, hundreds of tons of materials that are in short supply are being saved, and the operational characteristics of items made of powder are extremely high.

The equipment developed by this NPO for strengthening the ball pins and other parts of the steering gears of motor vehicles of the family MAZ-6422 by the method of plasma dusting provides for an economic effect of about 1.7 million

rubles a year. The NPO is the head organization for implementing a comprehensive republic target program for powder metallurgy. There are 41 organizations of 10 ministries and departments participating in the implementation of the program.

At the same time the effectiveness of many NPO's has decreased in recent years and some of them have actually become production associations whose task is to produce series products that have already been assimilated. There is the threat of curtailing the activity of a whole number of NPO's.

What are the main factors that impeded the further development of NPO's?

Until recently the planning of the activity of the structural units has been carried out in keeping with the forms and methods that were in effect in the subdivisions before they were included in the associations. Therefore the plan for the NPO is a set of mechanically combined and insufficiently intercoordinated plans of structural units which are not oriented toward the achievement of the final results. This gives rise to a dispersion of forces and funds of the NPO and contributes to the appearance of disproportions among the scientific, planning-design, technological, experimental and production structural units, and it also impedes scientific and technical progress.

The NPO's have been functioning for more than 15 years now, but the USSR Gosplan has not yet prepared documents concerning comprehensive planning of their activity as an economically integrated unit, a unified organization. We are speaking about the development and approval of substantiated methods for drawing up the unified NIOKR-industrial and financial plan and methodological instructions for the formation of the five-year plan of the NPO. The NIOKR-industrial and financial plan would make it possible to coordinate the activity of scientific and industrial units in terms of time periods, sources of financing and resource support. The lack of guidelines for the development of the five-year plan has led to a situation where there is not yet any official statistical accountability which characterizes the results of the activity of the NPO as a whole. A number of summary indicators can be obtained through adding up the data from several balances in various areas of activity. But this method does not reflect the peculiarities of the NPO as a qualitatively new form of control of scientific and technical progress. The imperfection of the system of planning the NPO is one of the main reasons for the poor introduction of new developments into production in a number of branches. Thus, for example, the scope of the introduction of developments completed by the NPO for automation of production does not amount to more than 15 percent of the overall volume of them in the food industry.

The prevalence of value ratings when determining the final results of the work of scientific production associations leads to a distortion of the actual contribution of these complexes to public production and does not contribute to the creation of a principally new technology or new kinds of products that correspond to or exceed the level of the best world achievements.

For a number of years we have repeatedly been raising the question to the effect that, in order to orient the NPO primarily toward the creation of new technical equipment and to transfer it to industrial associations and

enterprises for series and mass production, it is necessary to carry out the planning of the activity of the NPO in a branch of the national economy called "science and scientific service." Then the planning of labor productivity and profit of the utilization of production capacities and capital should be carried out with a reference to these indicators. In principle there are no objections to this policy for planning, but so far a concrete decision has not been made. The decree of the CPSU Central Committee and the USSR Council of Ministers of 1983, "On Measures for Accelerating Scientific and Technical Progress in the National Economy," envisions a changeover of individual NPO's of five branches, as an experiment, to the branch called "Science and Scientific Service." The interests of accelerated development of principally new technical equipment demand an immediate changeover of all NPO's without exception to this branch of the national economy.

An unfavorable situation has arisen in the NPO with respect to wages and material incentives for its workers. Each structural unit applies its own system of wages and material incentives. In a number of cases paradoxical situations are created. The management of the head organization is deprived of a bonus when the enterprise underfulfills the plan, but at the same time it is not given a bonus when the plan is fulfilled. The collective of the scientific research institute--the head organization of the NPO--is interested in the plant's fulfillment of assignments related to the manufacture of mock-ups and experimental models, that is, in carrying out the thematic plan for scientific research and experimental design work, but the plant's collective is interested only in fulfilling the planning assignments for product sales, profit, labor productivity and so forth. Thus there is a lack of correspondence of interests because of the application of various bonus systems. To this one must add that for the head organization of the NPO the bonuses (their amount is several times lower than in the structural units that manage it) are paid quarterly, and to the production units they are paid monthly. The wage system does not provide incentive for the achievement of the final results.

The management staff of the head organization of the NPO, in terms of numbers and skills, is frequently not in a condition to provide for overall leadership of the entire complex. It is very difficult to strengthen the management staff from the structural units because of the various systems of wages and incentives. This is also impeded by the differences in sources of financing of the work of the scientific and production units. The NPO's do not have the opportunity to combine similar divisions of structural units or transfer staff units in the corresponding allocations from production units to scientific ones.

In the structure and staffs of the head organizations of the NPO's they have not included positions of head economist, deputy head engineer, chief of the staffing division, chief of the financial division and a number of other specialists, which has a negative effect on the activity of the entire complex.

The standard provisions make it incumbent on the NPO to handle the retraining of personnel for the needs of the enterprises, but in the structure of the

staffs of the head enterprise they do not include the corresponding subdivisions and positions for conducting this work.

In many NPO's the category for wages in the head organization is lower than that for the structural units that are a part of the association. When including the head organization in the group for wages, management workers and specialists are not taken into account in the overall volume of the NPO as a whole. As a result there is turnover of scientific workers and specialists.

Because of the different wage conditions in various structural units of the NPO serious difficulties arise in the formation of creative comprehensive brigades.

Apparently the time has come to develop standard structures for the administrative staff of the NPO, scales for official salaries and staffs for the management, and also the policy for including the head organization of the NPO in the group for the wages of management workers and specialists, taking into account the overall volume of work of the entire association.

Because of the existence in many NPO's of four-five and more sets of books, large difficulties arise with centralization of the functions and the granting of credit by the Gosbank. So far they have not developed methods for extending credit to the NPO under the conditions of a single account in the Gosbank, or methods for calculating a unified normative of circulating capital for the association, taking into account the activity of all of its structural units.

In recent years many NPO's have been introducing unified accounts in which they deposit money from the production and scientific parts of the association. But this kind of merging of accounts frequently is contradictory in nature. On the one hand there is special-purpose utilization of the money from the unified account for scientific and production activity, and on the other--separate allotment of money for financing scientific research and experimental design work and expenditures on the preparation and assimilation of production, which in practice precludes the possibility of maneuvering the funds and distributing them efficiently, and this is one of the reasons why numerous independent balances are maintained.

In our opinion, the improvement of the financial activity of the NPO should begin not with the merging of the accounts in the Gosbank, but with the formation of a unified financial plan for the association. The merging of the accounts will be a logical continuation of the measures for improving the planning and accountability.

The ministries and departments are not taking the necessary measures for providing in the NPO the necessary proportions between the scientific potential and the production base. Thus, for example, in the Pishchepromavtomatika NPO the capacities of the experimental plant are one-fourth the capacities of the planning and design subdivisions, and the capacities of the assembly installation are one-tenth the required volume of assembly work. As a result, the cycle "research--production" is prolonged for many years in this association.

But the planning section and the experimental industries are frequently given work that is not within their profile, and the work that is within their profile is transferred to other organizations. A curious feature: the ministries are not striving to transfer new products assimilated by the NPO to other enterprises of the branch, but are keeping the production of these items in the association itself.

Almost one-fourth of the NPO's do not have their own experimental bases. For example, the Plastika NPO in the capital does not have an experimental production in Moscow. The association produces mainly mass series products. The plans for the plants in the scientific research institutes that are included in this NPO do not always coincide. And Plastika is not the only one in which this situation has been created.

The experimental plants of the NPO like series production are given assignments for increasing labor productivity and profit, reducing production costs and increasing profitability. The special equipment allotted for conducting experimental work is taken into account when determining the indicator of the output-capital ratio, which is extremely disadvantageous for experimental units and the association as a whole.

Apparently the volume of experimental work should be separated from the overall volume of output of the NPO. It would also be expedient to grant the ministries the right to permit the general directors of the NPO's to set for the experimental productions (when they have substantiated calculations or normatives for the creation of models of new technical equipment) indicators that are lower than the average for the association (branch) without changing the overall indicators for the NPO.

The manufacture of the experimental products (mock-ups and so forth) is not included in the sales volume, which has a negative effect on the indicators of the operation of the NPO. It would be expedient for the USSR Gosplan and the USSR Central Statistical Administration to make the corresponding adjustments in the existing instructions. In our opinion, the volume of output of series (mass-produced) products should be established by the NPO's themselves. This should be a calculation indicator.

At the present time many scientific production associations are small complexes. It would seem that increasing the scientific production and also the production capacities of the associations could also take place without additional capital expenditures, through redistribution of existing capacities of scientific research and planning and design organizations, and also industrial enterprises. In our opinion, the strengthening and expansion of NPO's should be carried out as a result of the creation of branches on the basis of certain large central plant laboratories which are independently conducting scientific research and experimental design work.

The existence of numerous laboratories at industrial enterprises was quite justified 20-30 years ago. At the present time the return from some of them is negligible, and the research is not conducted on a sufficiently high scientific level since not enough scientists are being enlisted to work in

plant laboratories. Because of the lack of the necessary coordination, research is being conducted in parallel on similar subjects, and there is duplication of work. As a rule, in these laboratories the labor productivity is low and valuable equipment and instruments are utilized inefficiently. For example, in the central plant laboratories the profile for the activity is the same as in the Plastpolimer NPO there are 5 times as many associates as there are in the association itself.

The laboratories that are working in the profile of the NPO should, in our opinion, be transformed into branches of these associations and placed directly under their jurisdiction, and it would be expedient for the scientific and technical leadership of a number of other laboratories that are closely associated with the work of the NPO to be placed on the latter, while retaining the administrative jurisdiction of the aforementioned subdivisions for the enterprises. Then all scientific research and experimental work should be conducted according to subject plans that are approved by the NPO. Laboratories that are doing secondary work can be abolished. These measures do not preclude the possibility of the existence and further reinforcement of special plant laboratories that are successfully performing crucial experimental work.

In a number of cases it is economically expedient to include in the NPO enterprises and organizations of other branches, regardless of their departmental jurisdiction or territorial distribution. A great economic effect can be produced by creating powerful interbranch NPO's, for example, for producing containers, packaging and certain means of mechanization.

Apparently those scientific associates are right who think that one should establish minimal sizes for NPO's in terms of the number of personnel and the volume of scientific production activity. The establishment of a minimal size for the NPO taking into account the specific features and peculiarities of the branches, and also the kinds of complexes, should prevent the appearance of small organizations that do not have a sufficient scientific, production or experimental base for forming the appropriate scientific and technical personnel.

In a number of ministries there is no permanent agency for management of scientific production associations. And in those places where such agencies exist they do not sufficiently take into account the peculiarities and specific features of the development of the complexes they are managing and approach them in the same way as they approach ordinary scientific research institutes or enterprises. For example, the Pishchepromavtomatika NPO was under the jurisdiction of the ministry's administration of the head mechanic and energy engineer, and then under the technical administration. Neither one sufficiently took into account or takes into account the need for accelerated development of the NPO as compared to the development of the branch. This can be explained to a considerable degree by the slow rates of expansion of its production and experimental base and its great difficulties in material and technical supply.

It seems that with the three-unit system of management the NPO's should be directly under the jurisdiction of the all-union or republic industrial

association. In individual cases an NPO which is significant for a number of subbranches, whose activity influences the work of the entire branch as a whole, can with a three-four-unit system of management be directly under the jurisdiction of one of the deputy ministers.

The primary tasks of the ministries and departments, as we see it, are to strengthen and develop the existing NPO's and to strengthen their scientific potential as a result of the creation of new scientific research and planning and design organizations and industrial enterprises. It is exceptionally important to have prompt and careful technical and economic substantiation and planning of new scientific production associations. The development by the ministries and departments of systems for improving the management of scientific research and the introduction of these into production could be of assistance here.

In the NPO, on the basis of the peculiarities of its production and organizational structure, it is most effective to develop target-program planning which is based on a scientific and technical prediction and which clearly determines the goals of the program and the sources of its financing. Moreover the NPO's that are responsible for implementing the program should be fully provided with the necessary resources and should have the right to distribute them among the cooperating organizations. The continuous and comprehensive system of planning, which provides for close coordination of all units of the cycle "research--production" and also scientific and technical predictions and long-range and current planning, has fully justified itself.

Under the conditions of the NPO comprehensive scientific and technical programs are a means of bringing order into planning, eliminating the separation between scientific and production units, and providing for balance and coordination of time periods and the quality of the work that is performed. They are called upon to coordinate these jobs with the resources that are allotted and to envision measures which are necessary for solving the scientific and technical problems that are set.

The introduction of the principles of cost accounting into the practice of the NPO could appreciably increase the effectiveness of their activity. But one should take into account the circumstance that the subdivisions that are included in the NPO are of different kinds, various criteria for evaluation are in effect for them, and they have the various final results of their activity. An important part of the introduction of cost accounting as the development of introductory calculation prices for products and services of scientific, design and planning-technological subdivisions. To be sure, certain economists consider this approach unacceptable. In their opinion, the calculation prices only impede the formation of the association as an economic hole, artificially isolate its subdivisions and make their interests special. Obviously, the answer is suggested by practice.

It would hardly be possible to find a unified generalizing criterion for evaluating the effectiveness of the operation of scientific production associations. For this one needs a system of evaluation indicators that take into account the peculiarities of the entire cycle of the creation and introduction of new technical equipment.

One of the main criteria for evaluating the activity of the NPO should be the economic effectiveness of the developments that have been introduced into the national economy. Here it is important to take into account all spheres of the utilization of new technical equipment and various times for expenditures and results. As a criterion for evaluation, in our opinion, it would be expedient to use the indicator of the rise of the technical level of the branch as a result of the developments of the NPO. The evaluation of the activity of the NPO should reveal their influence on the technical and economic level of production in the corresponding branch (subbranch) or area of production. The influence of the NPO on the technical and economic level of production is evaluated by the degree of renewal of the products of the branch and the growth of labor productivity in it. One determines the proportion of products produced in the branch from developments of the NPO and in the overall volume of products of the corresponding profile of its activity. One reveals the proportion of conventionally released workers as a result of the introduction of the developments of the NPO in the overall number of industrial production personnel of the corresponding branch (subbranch) of the national economy. The scientific and technical level of the research and developments is evaluated according to their innovation and prospects as well as a comparison with the best domestic and world achievements. Their proportion in the overall volume of complete research and development is established.

It would be expedient to introduce into this system of planning and evaluation of the activity of the NPO a normative of the duration of the process "research--production" instead of the indicator for the reduction of the length of this process.

Planning such indicators as the proportion of products of the highest quality category and the material-intensiveness of items can be of great significance for increasing the effectiveness of the activity of the NPO. The drafts of plans developed by the NPO should envision an economic effect from the utilization of the results of the completed work in the national economy and the practical contribution of the NPO to raising the level of the corresponding production associations and enterprises.

The solution to the problem of accelerating scientific and technical progress is possible, in our opinion, only with the organization in the NPO of an effective and dynamic system for introducing new technical equipment. Here it is of primary importance to have a correct selection of the structural subdivisions that are responsible for the introduction.

Scientific production associations achieve acceleration of the cycle "research--production" because of the creation and development of specialized services for introducing new technical equipment, installing it, adjusting it and starting it up. A number of NPO's (Soyuznauchplitprom, Pishchepromavtomitaka, Plastpolimer) have created and are successfully operating special installation-adjustment and start-up-adjustment administrations.

Among the main areas for the activity of such administrations are the following:

rendering practical assistance to industrial workers in adjusting and starting up the new equipment and assimilating new technological processes; providing start-up-adjustment and supervisory installation work when introducing new technical equipment;

providing the enterprises with sets of technological fittings that are necessary for the introduction of technical innovations.

Apparently the scientific and technical centers of the branches (subbranches), along with the enterprises, should bear responsibility for the fulfillment of assignments regarding the proportion of products of the highest quality category in the overall volume of production and evaluate the technical and economic level of the items. The creation in the ministries of a unified fund for the development of science and technology, from which they will finance scientific research and experimental design work and prepare for and assimilate series production of new items, will contribute to the strengthening of the role of these centers.

Assigning the NPO's the functions of scientific and technical centers will make it possible to provide for links between all stages of research, development, assimilation and production of new technical equipment and to increase the coordination of the activity of the scientific research, planning-design and technological organizations and enterprises of the corresponding subbranch.

It should be noted that the NPO's, being scientific and technical centers of the branch, in their activity do not replace leadership from the all-union (republic) associations, but are called upon to become the main proponents of the branch scientific and technical policy. An essential function of the branch scientific and technical centers is the development of branch services, particularly for scientific and technical information, and also patent and licensing work, preparation of technical and economic justifications, scientific organization of labor, training of scientific personnel, normalization, standardization and unification, prognostication and study of the demand for the products that are produced, the development of material and labor normatives, installation and adjustment of new technical equipment, and so forth. Services are created as part of the centers for scientific service for enterprises and organizations of the branch, including for performing computer, copy-reproduction, information and other jobs.

The function of scientific and technical centers requires the organization of good information support for the system. To this end one should envision receiving along with the help of a special subdivision, information on the highest world achievements in the area which embraces the activity of the NPO and also an in-depth study and analysis of the need for the technical equipment which is being developed on the basis of the demand of the consumers.

It is also important to provide for synchronicity of the activity of all organizations that are included in the scientific and technical center and to make sure that it is autonomous. The scientific and technical center is essentially a subsystem of the system of production management.

An all-union or republic industrial association with a separate staff cannot successfully conduct a scientifically substantiated technical policy or have a sufficient number of qualified specialists. But to transfer to the scientific production associations the functions of the branch (subbranch) scientific and technical centers opens up great possibilities of improving control of scientific and technical progress, accelerating it and increasing its effectiveness.

The successful functioning of scientific production associations depends largely on the selection of the optimal structure of their management. Traditional forms of the organizational structure of management do not always provide for sufficient flexibility or adaptability of production under the conditions of the scientific and technical revolution. The selection of a variant of the system of management of the enterprise is determined by a number of factors, including the production volume (series and experimental), the number of personnel and the available equipment, the technical support for production, the level of technology and scientific potential, the complexity of the cycle "research--production," and the degree of centralization of the main functions of management.

In the structure of the association it is necessary to create effectively operating special subdivisions for prognostication and comprehensive planning and management. It is important to form an organizational structure of the collectives of researchers, developers and engineering and technical services which would combine, on the one hand, specialization and integration of functions, and, on the other, the possibility of solving both long-range and current problems. Solving system problems requires the participation of a considerable number of organization developers and a large number of specialists. In this respect a most important advantage of the NPO consists in its possibility of combining their efforts, which makes it possible to essentially increase the effectiveness of expenditures on science. Inherent in such a management structure are features of self-regulation and the ability to develop programs which consist of a totality of measures directed toward the achievement of the concrete goal. Here it is necessary to formulate the goal that is to be achieved. Experience shows that it is precisely goal-oriented management that enables the NPO to perform its functions most successfully.

The function of improving planning, stimulation and financing of the activity of the NPO has been raised repeatedly before planning and financial agencies of the USSR State Committee for Science and Technology and the State Committee for Labor and Social Problems. The Science and Technology Commission under the USSR Supreme Soviet in 1981 adopted a number of valuable recommendations which, unfortunately, have not yet been carried out by the aforementioned agencies. The NPO's continue to be in the position of the mythical centaur. But time will not stand still. The decisions of the December (1983) and April (1984) plenums of the CPSU Central Committee emphasize that the methods of

planning and the system of material incentives should contribute to unifying science and production. "The forms of management..." noted Comrade K. U. Chernenko, "should correspond to modern requirements." The interests of the state and acceleration of scientific and technical progress require that normal conditions be immediately created for further development of existing NPO's and the creation of new ones, and on the basis of this, increased effectiveness of all public production.

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WAYS OF EVALUATING WORK DISCUSSED

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[Article by B. I. Tabachnikas, doctor of economic sciences (Leningrad): "In What Indicator Should Work Be Evaluated?"]

[Text] Problem No 1

If one were to judge the effectiveness of the work of the economists according to the number of proposed (and sometimes introduced) indicators for evaluating the activity of enterprises, and also in terms of the number of instructions and methodological guidelines issued then perhaps there would be justification for thinking that recent years have been the heyday of economic science.... Since 1965 the composition and methods of construction of indicators have been revised repeatedly, and the range of directive assignments has continuously expanded. Incidentally, this wave has not touched the system of the indicators for scientific production associations. The only normative document that pertains to indicators of the NPO was approved in December of 1975, and it includes 13 indicators. In the instructive methodological documents adopted since the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 problems of planning and providing incentives for NPO's were not dealt with, and the standard methods for developing the basic planning document of the NPO, the NIOKR-industrial financial plan, has not been prepared.

Yet the existing system of indicators does not reflect the experience that has been accumulated in the NPO and does not provide a description of their actual contribution to the achievement of the economic effect obtained in the national economy (the only exceptions are the NPO's in the electrical equipment industry), they do not orient them toward reducing the cycle of "research--production," and they do not provide for a combination of economic interests of individual structural units in the association as a whole. The indicators of the structural units do not include "traces" of the existence of an association in their make-up. Sanctions have not been determined for the majority of indicators, nor has their position been determined in planning and stimulation. In the majority of NPO's the scientific, planning-design, production and other kinds of activity are planned separately. Thus, for example, in the NPO's Kriogenmash, Kondensator, Mikrobiolprom, Bumash,

Plastpolimer, and Spetstekhosnastka, the activity of the structural scientific and production units that are included in them is planned according to indicators that are no different from the indicators of independent scientific and technical organizations and enterprises. Many scientific research institutes, design bureaus and enterprises which are parts of NPO's and were previously independent, even if they have forfeited their rights as a corporate body, continue to receive planning assignments from the VPO and functional subdivisions of the ministries separately. For example, in the NPO Bumash the plan for NIOKR is approved by the technical administration of the ministry, and the production plan--by the VPO. The NPO Kriogenmash receives assignments for production from the planning and economics administration of the Ministry of Chemical Machine Building, and for scientific research and design activity--from the technical administration. The special design bureau and the experimental plant of the Minsk NPO Dormash have changed over to the position of structural units, but their planning assignments are set individually: the thematic plan for NIOKR--by the technical administration of the ministry, and the production volume--by the VPO Soyuzdormash.

But even when the planning indicators are set for the NPO as a unified whole the situation does not change since the list of directive indicators retains only those which reflect the results of scientific and production activity individually. For example, the NPO Pishchepromavtomatika was the first in the country to be given assignments as a unified complex. But study of the list of these indicators shows that only formally are they common for the entire NPO. Thus for production it plans the indicator "volume of work--total," but from it they single out "including" separately the volume of scientific research work, experimental design work, planning work, industrial output, and installation and adjustment work. The wage fund is also planned separately in terms of these kinds of work. The management of the association has only been granted the right to redistribute among the structural units the sum of capital investments. The indicators established for the NPO do not play an active role in the system of cost accounting and the associations until recently had not created unified incentive funds.

Analysis gives justification for drawing the conclusion that Problem No 1 is the construction of overall criteria which enable us to judge the results of the activity of the NPO as a unified cost-accounting scientific production complex.² Strange as it may be, this apparently obvious point has many opponents.

Eliminating the Barriers

"Why when evaluating the activity of an NPO can we not limit ourselves to individual application of two groups of indicators that characterize the scientific and production activity?," scientists and workers of the NPO's, ministries and departments asked us. "Why artificially construct 'mixed parameters'?"

We answered that without common indicators there is no unified cost-accounting mechanism, community of interests, and therefore stimuli, moral and material incentives or responsibility, a system of fund-forming and awarding bonuses cannot be created nor can there be incentives for the results of competition,

and so forth, there are no unified criteria for effectiveness when conducting technical and economic calculations both in the stage of planning the NPO and when substantiating organizational and technical measures conducted in existing associations.

"But, excuse us," they say to us, "say that you are right and practice actually does require the construction of such parameters. But, after all, this is impossible since the indicators of the production and scientific subdivisions of the NPO, which belong correspondingly to the production and nonproduction spheres, are not the same in size. Figuratively speaking, the national income is created in the shops and it is eaten up in the laboratories. As distinct from labor and industry the labor of scientific workers is nonproductive, and its product is not a commodity."

Here we see that outdated ideas based on an incorrect interpretation of individual points in Marxist-Leninist theory stand in the way of solving an important economic problem. Yet the classics of Marxism-Leninism never considered only labor which creates a materially tangible product to be productive. The criterion for the productive nature of labor for Marx is not the actual substance of its results, but whether or not it corresponds to the objectively conditioned goals of production (under capitalism--maximization of the added value). The product of the sphere of applied science under socialism fully meets this indicator. Its consumer value consists in its ability to be useful in subsequent stages of the scientific and production cycle. The final goal of the labor that created it is fuller satisfaction of the physical and spiritual needs of the workers in a socialist society and comprehensive development of the individual. The relative organizational and technical as well as economic separation of the primary units of the national economy (including scientific and technical organizations and scientific production complexes) determines the need for the realization of their products through exchange and give it the properties of a commodity. With all of its specificity this commodity has value and cost, whose role under modern conditions is performed (although not very successfully) by the estimated cost of NIOKR.

A practical confirmation of the justification for the point of view that has been presented is the actual process of expanding the sphere of commodity and monetary relations and strengthening the role of financial levers and the control of applied science as well as the changeover of control of scientific and technical progress to a cost-accounting system. We cannot but note that in the VPO's, ministries and regional organizations as well as as many NPO's they regularly calculate the summary volume of all kinds of work, general expenditures and the wage fund. But this is done "under a working policy," in spite of the traditional requirements and the existing instructions.

The elimination of these barriers is a most important prerequisite for the construction of unified evaluation indicators of the activity of the NPO. But what should they be? In order to answer this question let us turn to certain disputed problems in the theory of indicators.

Better Fewer, But Better

Indicators are the simplest models of economic phenomena and processes. The help of the system of the corresponding measurements (physical, value, labor) and proportion estimates (prices, normatives, wage rates) they create a basis for quantitative and qualitative characterization of the condition and the dynamics of the results, expenditures, resources and effectiveness of production. The world of indicators is as rich as economic activity is saturated with content. It is possible to classify them according to dozens of signs. In the system of management they perform various functions, the most significant of which are directive and evaluative. In literature these two groups of indicators are frequently equated with one another. Yet their interconnection is considerably more complicated than that.

The evaluation indicators are the ones which are used to determine the level of activity of the collectives by the higher economic and social organizations, to sum up the results of socialist competition, to form the incentive funds, to award bonuses to workers, and to determine the measure of moral and material responsibility. It goes without saying that for various levels of management, types of enterprises or their structural subdivisions the range of evaluation indicators differs. Here it seems that, as a rule, they should include directive indicators (except those which serve to limit the distribution or expenditure of funds--for example, the limit of capital investments). The directive indicator which "does not work" in the system of evaluation and stimulation, forfeits the effect of its influence, as though it is "suspended in air."

Yet it is not only indicators that are established directly that can be used for evaluation. The evaluation function can be successfully performed by a group of indicators which, although they do not play the role of assignments and are not utilized for characterizing the degree of fulfillment of the plan, do reflect in physical and substantial or value form the actual amount of expenditure of resources and the results of production activity. Their numerical value characterizes the existence of sources of funds for implementing a planned process of individual reproduction--the reimbursement for consumed production capital, payment for labor of accumulation and social development, and also augmenting of funds from the state budget. Among the resulting value indicators of this type are all indicators of output that are based on the utilization of existing prices (including net and conventional net output), profit (balance and net) elements into which profit breaks down in the sphere of scientific and technical progress (cost-accounting economic effect of new technical equipment, and so forth).

When these indicators are used money acts not only in the function of a measure of value, but also in the function of a means of circulation, payment and accumulation of funds of the economic units. The application of this group of economic parameters makes it possible to expand the possible area of "self-evaluation," "self-control through the ruble," which fully corresponds to the requirement of expanding the rights and increasing the responsibility of the enterprises which was formulated in the July (1983) decree of the CPSU Central Committee and the USSR Council of Ministers, "On Additional Measures for Expanding the Rights of Production Associations (Enterprises) of Industry

in Planning and Economic Activity and Strengthening Their Responsibility for the Results of Their Work." This decree contains a number of principal instructions pertaining to the selection of evaluation indicators. It not only emphasizes the need to "limit the number of indicators established in the five-year plan for production associations and enterprises," but it also recommends, instead of the numerous criteria for evaluation which were previously applied, only two main criteria: first, those which characterize the final results--the volume of product sales taking into account commitments for deliveries according to products lists, quality and time periods in keeping with agreements that have concluded (schedule orders); second, any of the indicators (depending on the specific features of the branch) which reflect factors, the level and the dynamics of the effectiveness of production--fulfillment of basic assignments for the development of science and technology, higher technical level (quality) products, labor productivity, reduction of expenditures on production (increase in profit), utilization of production capital (when forming the material incentive fund).

It would be expedient to extend these fundamental principles to the NPO taking into account their specific tasks. As was pointed out in the "Provisions for the Scientific Production Association" adopted in 1975, the main one of these is acceleration of scientific and technical progress in the branch. The other tasks--reducing the duration of the process "research--production," increasing the effectiveness of scientific and technical developments and all scientific production activity of the association--ensue from the first and concretize it.

The Final Product of the NPO

Which indicators characterize the final results and the effectiveness of the work of the NPO?

In its most general form the answer to this question was already contained in the list established in 1975 of the main indicators of the activity of the NPO, which envisioned planning assignments for the entire complex of work (from research to the production of new technical equipment, including technical developments, the creation of basic models and technological processes, and industrial output of the new technical equipment).

But for a long time this indicator has not been planned and has not been taken into account. The "technology" of its calculation has not been determined, and we do not have the necessary methodological documents. These difficulties were overcome to a considerable degree after the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, which contains direct instructions concerning the policy for the development of these assignments. They should be based on schedule orders (contracts) which reflect the final results, and they should indicate the responsible parties and the deadlines for the performance of the work at all stages of the scientific production cycle.

In order to characterize the final results more completely, the assignment for the entire complex of work should, in our opinion, also encompass previously assimilated products stipulated in agreements (if they are within the profile

of the given NPO) and also scientific research and experimental design work that is being completed in the planning period and is being performed for other organizations; technical documentation that has been transferred to production associations and manufacturing enterprises; models of new technical equipment; and patronage installation and start-up and adjustment work. This indicator should be established through calculation, and the fulfillment of the assignment should be evaluated "in terms of deliveries," that is, only with the sale of the products and the realization of the NIOKR according to agreements and orders (without including overfulfillment of the plan for individual kinds of products or subjects of NIOKR).

The proposed criterion has a number of advantages. It reflects, on the one hand, the natural and physical aspect of the NPO since its amount is determined by the fulfillment of the subject plan for NIOKR and the plan for the list of industrial products; additionally, it makes it possible to give a general characteristic of the results of the work: they are evaluated in value form--wholesale prices of the products that are sold and the estimated cost of NIOKR that is released and paid for.

The fulfillment of the assignment for the entire complex of work calculated according to the recommended method characterizes the degree of satisfaction of public needs for scientific and industrial products. With the utilization of this indicator the function of public control of the results of the activity of the association is performed by the consumer--the client in the form of the ministry, all-union industrial association, enterprise or scientific and technical organization.

The changeover to the application of this indicator does not require breaking down existing planning and report documentation since it is fully included in the already introduced cost-accounting system of control of scientific and technical progress.

The Overall Effectiveness of the Activity of the NPO

It is known that the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 envisions directive planning for production associations of the indicator of the economic effect from conducting scientific and technical measures. But its content and methods of calculation continue to be questionable. Certain authors equate this indicator with the economic effect which is formed as a result of the utilization of new technical equipment in the national economy, that is, with the so-called second kind of effect. But with this approach the real savings received within the NPO as a result of applying new technological processes and methods of organization and control of production "falls out of" the sphere of the evaluation. It would be equally one-sided to characterize the effect from conducting scientific research measures in the NPO solely on the basis of data concerning the reduction of the production cost of the products they produce.

The indicator of the effect of new technical equipment is used in the system of cost accounting in scientific production associations only in the electrical equipment industry, where the economic effect from the production of new products of the highest quality category is taken into account when

determining the dynamics of the volume of production and labor productivity. Moreover, at the beginning of the 11th Five-Year Plan in the scientific production associations of this branch one of the fund-forming indicators was the so-called effect of the first kind--reduction of production cost achieved as a result of the utilization of new technical equipment and technology and improvement of the organization of production and management within the association.

The experience of the electrical equipment industry has already been sufficiently discussed in literature and has been given a positive evaluation. Of special interest in it is the attempt to integrate the evaluation of the results of current production activity and scientific and technical progress. But this problem is not fully solved here either since in this variant both kinds of effect ("for oneself" and "for the society") are in effect in the system of incentives individually and are not coordinated with the most important indicator of the cost-accounting activity of the NPO--profit. Nor do they take into account the economic effect from the application of scientific and technical developments of the NPO which go to the consumers in the form of experimental models, technological diagrams, blueprints, methods and so forth.

It is possible to overcome this contradiction through constructing an indicator of the overall economic effect of the activity of the NPO (E_{npo}), determined by the total of profit from the sales of industrial products (P), the annual economic effect from production and the utilization outside of the association of new products (E_p) and scientific and technical developments (E_n). In order to avoid repeated accounting one should subtract from this amount the sum of money obtained by the NPO as a result of increments to wholesale prices for products of the highest quality category (N) since it enters as a constituent part of the profit from product sales:

$$E_{npo} = P + E_p + E_n - N$$

The amount P takes into account the base (normative) amount of profit from product sales, their increase as a result of extensive factors, and the annual savings from the application of new technological processes and improvement of organization and management of production. The variables E_p and E_n characterize the contribution of the NPO to increasing the net income f of the society which is realized outside the association.

The application of the criterion we propose can cause the objection that the sum E_{npo} does not reflect the real sum of money coming into the account of the NPO (it receives money only in the amount of profit from the sale of material products and deductions from profit of the industrial enterprises, which goes into the economic incentive fund of the NPO). A considerable part of it is profit of the enterprises that utilize the new technical equipment throughout the entire period of its service. But we have already pointed out that the system of economic indicators can and should include more than just the parameters that characterize the real movement of material values and monetary funds. In the practice of planning and stimulation a large place is occupied,

in particular, by indicators that are based on comparative prices. But the main requirement placed on the selection of indicators for evaluating activity is their objective nature, their capability of reflecting and encouraging those aspects of the activity of the NPO whose development is dictated by the tasks of gross and improvement of production.

Moreover, as the necessary prerequisites are created--the establishment of prices for scientific products, improvement of price-setting and methods of determining, accounting for and distributing the effect from new technical equipment among its developers, manufacturers and consumers, and the introduction of payments for all kinds of resources--the role of the indicator of the overall effect of the activity of the NPO can be strengthened through the calculated profit. Under these conditions it will reflect more fully the total savings received in the national economy as a result of the production and utilization of all kinds of "products" of the association, minus expenditures on feedback caused by the utilization of limited material, labor and natural resources.

The indicator of the overall economic effect can be augmented (and in a number of cases replaced) by a relative characteristic of the level of effectiveness of the activity of the NPO which is determined by relating the overall effect to the total one-time and current expenditures on NIOKR and the production of industrial products calculated according to the formula of adduced expenditures which characterize, by the definition of V. V. Novozhilov, "the complete national economic production cost."³ In economic literature writers have long been raising the question of the need to overcome the disparity between the two systems of economic accounting: the one applied when determining the effectiveness of capital investments and new technical equipment and the one utilized in the system of planning and evaluating cost-accounting activity.⁴ Under conditions of the NPO the integration of these two approaches becomes especially important. To do this, to be sure, it is necessary to do preliminary work to determine the numerical values of the normative coefficients for relating the amount of one-time investments to the current expenditures of the association.

And so, final results and effectiveness are the two main criteria. But the system of evaluation cannot be the same for all NPO's, not to mention their structural subdivisions and individual workers.

Avoiding Perfunctoriness

The composition of evaluating indicators depends primarily on the sphere of influence of the NPO. The associations acting in the role of branch scientific and technical centers (for example, Mikrobioprom in the microbiological industry, Soyuznauchplitprom in wood processing, Pishchepromavtomatika in the food industry, and Soyuzgazavtomatika in the gas industry) solve problems which are different from the functions of the NPO's which are significant as subbranches (Plastpolimer, Sakhar, Bummash, Lakokrasko-Pokrytiye and others). But selecting a system of indicators it is also necessary to proceed from the degree of comprehensiveness of the NPO which completes the stages of the scientific and production cycle carried out within their framework, and hence also the nature of their final product. The

analysis we conducted of the structure of 41 NPO's showed that 25 percent are creating new instruments, machines and equipment. They include scientific research, design, technological and industrial subdivisions. Seven of the scientific production associations specialize in the development and assimilation of means of mechanization and automation of production. They include, in addition to the aforementioned units, installation and adjustment administrations, centers for training personnel who are necessary for operating the new technical equipment that is created, and also, in a number of cases, offices for supply and batching of equipment. In associations of the third group (nine NPO's), whose main task is planning and assimilation of new technological processes, installations and materials, planning organizations are also included.

According to the data of K. I. Taksir and M. I. Krasnokutskiy, in 30 NPO's of various branches 17 percent of the personnel are engaged in scientific research work, 22 percent in experimental design work, 2 percent in planning and research work, 2 percent in installation and adjustment work, and 48 percent in industrial production.⁵ But the amplitude of the fluctuations here is very great. In NPO's of the electrical equipment industry the share of NIOKR in the overall volume of their "output" in value terms amounts to an average of 8.8 percent, and in terms of the number of personnel--18.4 percent. Moreover, for individual NPO's these figures fall within a range of from 1.9 to 20.2 and from 10.5 to 34.3 percent, respectively. In the NPO Spetstekhosnastka of the Ministry of Agricultural Machine Building the proportion of products produced in the basis of developments of planning design and technological research of the association amounts to less than 12 percent. At the same time 90 percent of the developments are transferred by the institute to enterprises of the country, bypassing the production of the NPO, that is, without going through the stage of assimilation in the association.

Depending on the composition, type, functions and participation in various stages of the process of "research--production," the product of the NPO assumes various natural and physical forms. The result of applied scientific research work is reports and recommendations, diagrams of developments and methods; the developments (design, planning, technological) are culminated with sets of working documentation; experimental work--the release of experimental models and installation; the process of assimilation--the output of new products or the application of new technology within the association; and, finally, the stage of dissemination of new technical equipment and technology--the production of new products produced by enterprises of the branch. It goes without saying that there is also a corresponding change in the method of constructing the indicators of the fulfillment of assignments for the entire complex of work and the effectiveness of the operation of the NPO.

It is also necessary to calculate in different ways the length of the process "research--production"--an indicator which, being directive, should occupy an important position when evaluating the results of the activity of the management personnel of the NPO.

In the press one frequently finds figures that show an essential reduction of the length of this process as a result of the creation of an NPO. But these calculations are done, as a rule, "by eyeballing," subjectively, on the basis of selective data. Most frequently the length of the cycle within the framework of the MPO is determined as the average weighted duration of this period for individual developments, divided by the number of these developments. But this kind of calculation stimulates an increase in the number of small projects (developments) which are intended for a short period of time, regardless of the annual national economic effect received as a result of their introduction. In order to overcome this tendency, it would be expedient to utilize precisely this last amount as the weighted evaluation when calculating the average duration of the process of "research--production." But its "finishing" line, and hence the method of calculation and also the area of utilization (for example, the range of workers who receive bonuses) should vary, depending on the type of association.

In order to evaluate the activity of structural subdivisions and individual workers, it would be expedient to utilize in the most varied combinations the broad spectrum of evaluation indicators:

those that characterize the degree of influence of the NPO on the technical and economic level of the branch or subbranch (proportion of products of the highest quality category produced in keeping with developments of the NPO, the change in labor productivity as a result of their utilization);

those which reflect the scientific and technical level of the NPO products (coefficient of introduction, proportion of work performed at the level of inventions, number of licenses and so forth);

those that show the effectiveness of the utilization of individual kinds of resources (labor productivity, output-capital ratio, material-intensiveness).

An Economic Experiment Is Needed

The great prospects for the development of scientific production associations as a progressive form of combining science and production, whose possibilities are far from being fully utilized, make it insistently necessary to pay more attention to problems of improving economic work within the framework of this type of initial unit of the national economy. One should also keep in mind that many elements of the economic mechanism of the NPO can (with certain adjustments) be used in large production associations which include scientific and technical subdivisions (scientific research institutes, design bureaus and others). Therefore it would be expedient, taking into account the experience in planning the activity of individual NPO's in the branch "Science and Scientific Service" and the results of the large-scale experiment, to conduct

the association in the total amount of the economic effect, increased dependency between wages and the effectiveness, quality and time periods for the assimilation of new technical equipment; expansion of the sphere of application of economic normatives; a better-substantiated, unified and at the same time differentiated system for salaries and wage rates, and a new and

more flexible legal status for scientific and production structural units of the association.

Only this kind of comprehensive approach will make it possible to solve successfully the crucial problems of improving the management of scientific production associations.

FOOTNOTES

1. It should be noted that the initiative here in a number of cases came from below. The systems of all-around planning were developed in the NPO's Soyuzpishchepromavtomatika, Plastpolimer and others, and branch methods for drawing up the NIOKR-industrial and financial plan--in the electrical equipment and food industry.
2. This was correctly pointed out by participants in the "round-table" discussion conducted by EKO magazine (see No 8 for 1983, "Decisive Restructuring Needed").
3. The possibility of utilizing the indicator of expenditures brought forward when constructing indicators of the overall effectiveness of production was justified in the works of a number of Soviet economists: see Medvedev, V. A., "Sotsialisticheskoye Proizvodstvo: Politiko-Ekonomicheskoye Issledovaniye" [Socialist Production: Political and Economic Research], Moscow, "Ekonomika", 1981, pp 140-142.
4. See the works of L. Vaag, P. Bunich, D. L'vov and others.
5. Taksir, K. I., Krasnokutskiy, M. I., "Effective Forms of Introducing New Technical Equipment" in the book: "Sotsial'nyye i Ekonomicheskiye Aspekty Povysheniya Effektivnosti Sovetskoy Nauki. Tezisy Simpoziuma" [Social and Economic Aspects of Increasing the Effectiveness of Soviet Science. Theses of the Symposium], section V (3), Moscow, 1982, p 7.

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NPO'S NEED ECONOMIC STRUCTURING

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 146-156

[Article by L. V. Minin, candidate of economic sciences, senior scientific associate of the Kiev NPO Analitpribor: "Improving the System of Incentives for Workers"]

[Text] The formation of NPO's with specific goals and tasks was not accompanied by the creation of the corresponding system of planning, accounting, analysis and evaluation of their activity. Their organizational restructuring did not entail an economic restructuring, and herein lies the essence of the contradictory position of the NPO's that have been created. This contradiction pertains to all elements of the economic mechanism of the NPO, but it is manifested most critically in the area of incentives.

Perhaps the most serious shortcoming in the existing system of material incentives for NPO's is the lack of normative documents that regulate the policy for the creation and distribution of the unified centralized fund for material incentives. As a temporary measure,¹ in our opinion, one could suggest the mechanism for creating a centralized bonus fund for the NPO through deductions of some of the money from the material incentive funds of scientific and production structural units. It would not be necessary to break down the existing mechanism for the formation of these funds. It is important to find criteria for deducting into the centralized fund a certain proportion of the overall sum of the incentive funds of the structural units of the association. The centralized material incentive fund should be used for awarding bonuses to workers of subdivisions of the centralized administrative staff of the NPO for the results of scientific production activity, and also workers engaged in conducting theoretical research in the creation of a scientific and technical stockpile.

The amount of the funds for incentives for the management of the association and workers of the centralized management staff of the NPO can be determined on the basis of the wage fund of this category of workers and the average percentage of bonuses paid to engineering and technical personnel and employees in the association for the results of current activity.

The amount of the funds for awarding bonuses to workers engaged in the creation of the scientific and technical stockpile can be determined in the same way: on the basis of the wage fund of this category of workers and the average percentage of bonuses paid to scientific and engineering and technical personnel of the association for the creation and introduction of new technical equipment. The funds determined in this way can become the amount that is to be transferred into the centralized material incentive fund from the sum of the funds formed for incentives for the structural units. The proportion of deductions from individual structural units can be determined in proportion to the material incentive funds formed during the report period.

The effectiveness of the entire system of incentives for the NPO's is determined to a considerable degree by the incentives of the workers of its head structural unit--the scientific research institute or design bureau. At the present time the policy for the formation and distribution of economic incentive funds for scientific research institutes (design bureaus) that are included in the NPO is in no way different from those that are on independent books. It is based on the formation of economic incentive funds (FES) depending on the economic effect received from the utilization in the national economy of scientific and technical developments and new technical equipment. Here three main sources for the formation of the FES have been determined:

reduction of the production cost of the products that are produced as a result of the introduction of technological developments;

additional profit in the form of increments to prices for new products which, in terms of their technical and economic level and quality, correspond to the best world models;

funds included in the estimated cost of the work in the following cases: (a) the assimilation and introduction of the results are carried out in other ministries and departments; (b) the economic effect, because of objective factors, cannot be expressed in the form of additional profit; (c) the economic effect from the scientific research and development cannot be calculated.

The work experience of the scientific research institutes (design bureaus) and NPO's that have been changed over to the new system of incentives shows that it has exerted a certain influence on increasing the effectiveness and reducing the time periods for research and development. At the same time certain shortcomings were also revealed. The fact is that a theoretically correct system of incentives which is oriented toward the creation of highly effective technical equipment and a reduction of the time periods for its development and assimilation in practice has not been completely worked out, and in a number of cases it turns out to be ineffective. The policy that has been adopted for the formation of material incentive funds for scientific research institutes and design bureaus is effective for organizations which create new technical equipment for which the national economic need is great, but it is inadequately thought out for organizations which create means of environmental protection, safety equipment, complicated machines, equipment and instruments with unit or small-series output. The amount of the national economic demand most frequently does not depend on the activity of the

scientific research institute and design bureau and therefore the two groups of organizations which were mentioned above have been placed in unequal positions ahead of time.

Moreover the new system of incentives for scientific research institutes (design bureaus) is based on the utilization of the actual economic effect as a basis for the formation of the FEC. But in practice the accounting for the latter has not been organized, and the incentive funds both before the beginning and after the end of the developments are calculated depending on the expected effect which is coordinated with the client or the consumer. But it is known that the expected economic effect, even when coordinated with one of the future consumers of the new technical equipment, as a rule, is different from the actual effect. The clients and consumers of the new technical equipment do not bear economic responsibility for the correspondence of the actual effect to the expected and agreed-upon effect. There are no legal norms which determine the interrelations between the scientific research institutes (design bureaus) and the enterprises that are consumers of the new technical equipment with respect to coordination and confirmation of the actual economic effect. These shortcomings cause scientific research institutes (design bureaus) to form FEC's as much as possible through their inclusion in the estimated cost of the work in proportion to the basic wages of the workers. The work of the organizations that have been changed over to the new system of incentives shows that the main source for the formation of the FEC is frequently not the funds obtained in the form of increments to prices for highly effective technical equipment, but the funds included in the estimated cost of the work and the payments from the centralized bonus fund of the ministry. The existing system of material incentives for scientific research institutes and design bureaus encourages small research projects and leads to the elimination of the scientific stockpile since it is easier to obtain an economic effect as a result of relatively small improvements and modernization of products that are being produced, to establish an increment to the price and to receive deductions from the profit of the enterprises into the FEC than it is to engage in large-scale, principally new developments. It takes long periods of time to resolve large problems and the stimulating significance of the bonus paid in the form of an advance is not great in this case: the scientific research institutes (design bureaus) are unwilling to take advances because of the lack of certainty of the results and the great disparity which can arise between the expected and the actual effect of NIOKR.

Practice has shown that there is a need to create a differentiated system for the formation of economic incentive funds for scientific research institutes (design bureaus) which would make it possible to approach more flexibly the incentives of organizations engaged in the creation of a scientific stockpile and the development of machines, equipment and instruments of a one-time or small-series nature. A certain step in this direction was taken in the Ministry of Instrument Making, Automation Equipment and Control Systems where, on the basis of the all-union provisions, branch provisions were developed for forming incentive funds for scientific research institutes (design bureaus) which envision a differentiated approach to the formation of incentive funds for the creation of the scientific stockpile, the development of a special subject list, means of environmental protection and technical safety, automated control systems, and so forth.

When introducing a new system of incentives for scientific research institutes (design bureaus) it was presumed that the object of stimulation would be the project or its immediate workers. Life showed that if the FEC is formed according to the projects, then the distribution of the bonuses remains equalized as before. There are several reasons for this. In the first place, because of the lack of substantiated recommendations for evaluating labor and determining the contribution of individual workers on the project. In the second place, because of the imperfection of the accepted policy for awarding bonuses for the results of current activity on the basis of coefficients of labor participation in the system of KSUKP with an evaluation of the personal contribution of the workers on the completed project during the entire period of its development. Finally, in the third place, because of the fear of the managers of scientific research institutes (design bureaus) of disturbing the sociopsychological climate in the collectives as a result of changing over to differentiated awarding of bonuses and the loss of personnel which is inevitable when this happens.

In our day improvement of the distributive relations is more and more significant. This pertains also to the practice of awarding bonuses to scientific research institutes (design bureaus) for the creation and introduction of new technical equipment. The standard provisions which are in effect for awarding bonuses to workers of scientific production associations and scientific research institutes (design bureaus)² have not recommendations for evaluating the personal contribution and distributing bonuses for the creation, assimilation and introduction of new technical equipment among the people who work immediately on the project. The lack of such recommendations leads to an equalized distribution of bonuses in keeping with the salary for the position that is held, that is, it becomes an automatic increment to the wages. This frequently ends up meaning higher incentives for managers and engineering and technical personnel of the administrative and management services than for the immediate developers of the new technical equipment,³ and it also creates favorable conditions for subjective distribution of bonuses and incentives to "necessary people." Thus the practice of awarding bonuses to workers of scientific research institutes (design bureaus) is in need of serious improvement.

When distributing bonuses among workers who have participated directly in carrying out research projects, in our opinion, it would be expedient to divide up all participants in the development depending on their role (scientific manager, responsible worker, creative and technical workers) and development requirements (specifications) for the personal creative contribution for representatives of each of the groups. There should be a particular coefficient for each set of specifications. In order to see how this takes place in practice let us look at the recommendations for distributing the coefficients of personal labor contribution (KLTV) and the distribution of bonuses among the direct workers on projects which have been developed and approved by us in the Kiev NPO Analitpribor (Table 1).

Table 1--Recommendations for Determining Coefficients of Personal Creative Contributions of Project Workers

<u>Project Workers</u>	<u>Characterization of Personal Creative Contribution to Project Variants of Degree of Participation)</u>	<u>Normative Coefficient of Personal Creative Contribution</u>	<u>Intervals of Values of Increase (+) and Decrease (-) of Normative Coefficient</u>
Scientific leaders	Formulated basic idea, set task, developed long-range research plan, participated directly in research and experiments from which significant results were obtained. Additionally, brought work to stage of introduction. Participated in the formation of the basic idea (task) and development of the long-range plan for research, did not participate directly in the research, and an administrator brought the work to the stage of introduction. Performed mainly administrative functions.	1.0	+0.1-1.0 -- +0.1-0.5
Responsible workers	Participated in the formulation of the overall task and the development of a long-range plan for research. Actively conducted independent research and obtained significant results. Provided for planning and coordination of research. Made large contribution to the introduction of the developments. Participated in the development of the long-range plan. Participated in research and introduction of development. Coordinated and monitored the work. Performed mainly functions of planning, coordination and control work. Did not himself directly conduct any research.	0.75	+0.1-0.75 -0.1-0.5
Creative workers	Participation in the development of the research plan. Independently conducted research and experiments in his area within the framework of the overall project. Invented things which were used in the project. Actively conducted research under the leadership of the project leader. Participated in the achievement of significant results. Conducted research and experiments under leadership of the project leader.	0.5	-0.1-0.5 -- -0.1-0.25

Table 1--Continued

<u>Project Workers</u>	<u>Characterization of Personal Creative Contribution to Project Variants of Degree of Participation)</u>	<u>Normative Coefficient of Personal Creative Contribution</u>	<u>Intervals of Values of Increase (+) and Decrease (-) of Normative Coefficient</u>
Technical workers	Participated in preparing for and conducting research and experiments, filling out documents and reports. Made a large contribution to the coordination and approval of documents for the project and the introduction of developments.		+0.05-0.25
	Participated in the preparation of experiments and research. Gathered and processed information.	0.25	
	Participated in filling out scientific and technical documentation, gathering information and registering the results of experiments.		-0.05-0.15

When developing the specifications for the personal creative contribution we took into account the degree of direct participation and the results that were received. For each of the groups of workers we gave descriptions of the most typical situations that arise when carrying out projects in scientific research institutes (design bureaus) of an instrument-building profile. The normative value of the coefficient was determined for each group of workers taking into account various requirements placed on their creative contribution.

When distributing the bonuses among the immediate workers on the project we used as a basis the sum of earnings received for the actual time worked on the given project, which is adjusted by the amount of the coefficient (Table 2).

The most frequently encountered mistake when distributing the bonuses is incorrect determination of the wages from which they are calculated. The bonus is intended for a development which, as a rule, has lasted for more than a year, but in practice when distributing it one uses as a basis the earnings of the last quarter and not the earnings of the worker during the entire period of carrying out the project. It is especially difficult to determine the personal creative contribution of management personnel of NPO's, scientific research institutes (design bureaus) and their subdivisions who have participated directly in the fulfillment of individual projects. In the first place, the management personnel are engaged for a certain amount of time in performing administrative and management functions (they have higher salaries for performing these), as a result of which they spend less time on direct participation in the projects. In the second place, a considerable proportion of the management workers are scientific leaders and participants

in several projects at the same time, and for each of them they claim the full volume of remuneration and not remuneration in proportion to the amount of time they spend on the individual projects. In our opinion, management workers of NPO's, scientific research institutes (design bureaus) and their subdivisions who have participated directly in individual projects should have the actual time credited to them for working on various projects limited by the normative of employment in performing administrative and management functions. The average percentage of employment of managers in the performance of administrative and management functions, developed with respect to NPO's in instrument building, is presented in Table 3. In a case where one person participates in the development of several projects at the same time, the actual amount of time of his work on project when distributing the bonus should be determined in proportion to the estimate value of the projects, with the exception of the time spent in performing administrative and management functions.⁴

Table 2--Sample Distribution of Bonuses Among Primary Workers
on Research Projects

<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>(4)</u>	<u>(5)</u>	<u>(6)</u>	<u>(7)</u>	<u>(8)</u>	<u>(9)</u>
Ivanov, A. I	Scientific leader	Division chief	250	2	500	0.75	375	84.39
Petrova, G. A.	Responsible worker	Sector chief	210	8	1680	0.5	840	189.03
Sidorov, M. N.	Creative worker	Senior scientific associate	180	12	2160	1.0	2160	486.07
Gavrilova, T. Ya.	Technical worker	Engineer	120	6	720	0.25	180	40.51

Project Leader _____ Approved _____
Trade Union Group Organizer _____

Key:

1. F.I.O.
2. Function on research project
3. Position
4. Salary (rubles)
5. Actual time worked on project
6. Total wages for actual time worked
7. Coefficient of personal contribution
8. Total earnings including coefficient (gr 6 x gr 7), rubles
9. Bonus for worker including coefficient (rubles)
(gr8/3555 x 800 rubles)

The policy recommended above for determining the coefficient and distributing bonuses among immediate workers on research projects requires the proper

accounting for the actual time spent on the projects and expansion of the democratic aspects and the public of awarding bonuses. Naturally, a considerable proportion of the workers who are enjoying the fruits of equalized bonuses will not like this and may resist it actively.

Table 3--Average Percentage of Engagement of Managers of Scientific Production Associates, Scientific Research Institutes (Design Bureaus) and Their Subdivisions in the Performance of Administrative-Management Functions (Time Which Cannot Be Used for Research Projects)

Position	Proportion (%) of Time Spent on Administrative-Management Functions in Overall Length of Working Time With Various Numbers of Workers in Institute and Its Subdivisions						
	10-30	30-50	50-100	100-250	250-500	500-1000	Over 1000
Deputy general director for science (director of scientific research institute)	--	--	--	--	30	40	60
Head engineer of institute	--	--	--	--	50	60	75
Head specialists (economist, designer, etc.)	--	--	--	--	50	60	75
Division chiefs	--	30	40	60	--	--	--
Deputy division chiefs	--	50	60	75	--	--	--
Sector chiefs (laboratory workers)	10	20	40	--	--	--	--

When speaking of the distribution of bonuses one cannot but mention one other shortcoming. In keeping with the standard provisions concerning bonuses for workers of NPO's, the bonuses for carrying out projects are paid only to the developers who are registered on the staff at the time the work is completed. This limitation unjustifiably excludes from receiving bonuses those workers who have made a large contribution but for good reasons (going on a pension, being called into the Soviet army, the birth of a child, the transfer to another organization by decision of the higher agencies and so forth) were unable to bring the project to completion.

An important task for improving the system of incentives for workers of NPO's and scientific research institutes (design bureaus) is to achieve an efficient

combination of incentives for the results of current activity and for the achievement of the final long-term results. The provisions which are in effect concerning bonuses for workers of NPO's and scientific research institutes (design bureaus) do not envision bonuses for developers of new technical equipment for the results of current activity, and therefore the managers of the organizations do not have legitimate economic levers for operational influence on the process of developing new technical equipment. But life requires incentives for current (scientific-production) activity of the developers, and therefore in the majority of NPO's in one form or another they retain current bonuses for this category of workers. It would be expedient to clarify the standard provisions concerning bonuses for NPO workers and to expand the possibilities of the associations to provide incentives for the developers of new technical equipment for the results of current activity.

The problems that have been considered here concerning improvement of the system of incentives for NPO workers have been reflected in the "Methodological Recommendations for Comprehensive Improvement of Cost Accounting in Scientific Production Associations of Machine Building." They cannot be solved without improving all elements of the economic mechanism for management of the NPO. Only from comprehensive control of scientific and technical progress can one expect a positive result.

FOOTNOTES

1. Before the development of standard provisions concerning the creation and utilization of the centralized material incentive fund for the NPO.
2. See: "Standard Provisions for Bonuses for Workers of Scientific Production Associations," EKONOMICHESKAYA GAZETA, Nos 48, 49, 1976; standard provisions concerning bonuses for workers of scientific research, design, planning-design and technological organizations, production associations and enterprises that have been changed over to the new system of planning, financing and economic stimulation of work on new technical equipment.
3. Serious shortcomings in the distribution of bonuses in scientific research institutes (design bureaus) of the machine tool and tool-building industry were announced in LITERATURNAYA GAZETA, 9 June 1982 in the article by S. Vologzhanin and O. Moroz, "The Bonus."
4. Example: The manager of a scientific research division with 55 workers is the leader of three projects with the following estimated cost: Project No 1 = 30,000 rubles; No 2 = 20,000 rubles; and No 3 = 50,000 rubles. The time spent in performing administrative and management

functions amounts to 40 percent (see Table 3). Hence the time of his direct participation in carrying out Project No 1 in the given year is:

$$11 \text{ months} - (11 \times 0.4)$$

$$= 20 \text{ months}$$

$$(30 + 20 + 50) \times 30$$

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COST ACCOUNTING (KHOZRASCHET) INTRODUCED IN NPO

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 156-165

[Article by B. Ya. Zheleznyak, candidate of economic sciences, and V. D. Grober, candidate of economic sciences, State Scientific Research Institute of Automated Systems of Planning and Control (Novosibirsk): "The System of Cost Accounting (Khozraschet) in the NPO"]

[Text] In search of unified methodological approaches and requirements which are directed toward improving planning and increasing the influence of economic methods of management on the final results of the activity of NPO's, the State Scientific Research Institute of Automated Systems of Planning and Control (NIIsistem) in conjunction with the Kiev NPO Analitpribor has conducted research and prepared branch methodological materials for comprehensive improvement of the system of cost accounting in NPO's.¹

The methodological materials are intended for comparison of the existing level of development of the system of cost accounting in the NPO with the normative level, quantitative measurement and evaluation of the level reached, disclosure in the process of analysis of existing shortcomings and unutilized reserves and, in the final analysis, determination of the most effective ways of improving the system of cost accounting in the NPO.

Level of Development of the Cost-Accounting System in the NPO--What Is It?

A principal question is that of selection and scientific substantiation of the basis for comparing and evaluating the existing system of cost accounting. This basis, in our opinion, can be a specially constructed ideal model which corresponds to the normative level of the system of cost accounting. We understand normative to be the level which is maintained for a particular period by unionwide and branch normative acts and corresponds to the leading achievements and tendencies in science and practice.

Maximum approximation of the normative level makes it possible to provide for a unified direction of interests of all participants in the cycle "research--production in the process of achieving the goals that are set for us. As a

result of the determination of the normative level, we receive an answer to the question of what the "ideal" system of cost accounting should be in the given time interval and what requirements it should satisfy.

When the normative level is established and registered it is possible to change over to conducting diagnostic investigations of the condition of the cost-accounting system reached by a given NPO and its structural units and to compare it with the normative level.

Data is gathered for the comparative analysis with the help of specially developed tables which characterize various aspects of the system of internal cost accounting. This table is comprised of variants of responses and quantitative evaluations which correspond to them and reflect both the normative level and one or another degree of approximation of it.

The condition that corresponds to the normative level is evaluated by the coefficient equal to 1.0. It is filled in in the table if during the process of cost-accounting methods the NPO fully meets the requirements that correspond to the normative level. But if the cost-accounting methods that are being applied do not correspond to the normative requirements, depending on the degree of this lack of correspondence, the value of the indicator obtained by the calculation and expert evaluation is set within the range of from 0 to 1.

The program for the investigation includes 20 tables which touch upon the main aspects of the analysis and evaluation of the completeness and comprehensiveness of the introduction of the cost-accounting system in the NPO as a whole and also the scientific research institutes (design bureaus) and experimental plants that are included in it. As for series production plants that are included in the NPO of the Ministry of Instrument Making, Control Systems and Automation Equipment, for them a special set of methods has been developed and introduced as standard.²

Coefficient evaluations that characterize various levels of deviation of internal cost accounting from the normative level are used in order to reveal "defective" blocks and nonworking elements of the cost-accounting mechanism for management in a specific NPO.

On the basis of methodological materials that were developed in 1982 an investigation was conducted of the level achieved in the development of cost accounting within the associations in the NPO's of the Ministry of the Instrument Making, Control Systems and Automation Equipment which are engaged in the reimplementation of the cycle "research--production": Impul's (Severodonetsk), Burevestnik (Leningrad), Promavtomatika (Groznyy), Analitpribor (Kiev), Elva and Analitpribor (Tbilisi), Mikroprovod (Kishinev), Spektr and Temp (Moscow), Signal (Tashkent) and Termopribor (Lvov).

What Did the Investigation Show?

First of all it revealed the level of organization of cost accounting within the associations. It turned out that the provisions concerning the organization of cost accounting even in those NPO's which are considered to be

changed over to cost accounting has not been developed, and legal support for the system, although it exists in all NPO's, does not exist in full volume and not for all structural units. Rigid staff limitations make it impossible for the management of the NPO to create special subdivisions that engage centrally in methodological guidance, development and improvement of cost accounting in the NPO as a whole and in its structural units.

Cost-accounting commissions which are to provide for efficient work in the organization and improvement of internal cost accounting have been created and are operating actively in far from all NPO's. Thus the number of NPO's--Burevestnik, Temp, Spektr and Elva--the cost-accounting commissions have been created only in the series production plants.

During the process of the investigation an evaluation was conducted of the degree of progressiveness and comprehensiveness of the economic methods that are being applied in the mechanism for cost accounting management of the NPO. It was clarified that the planning assignments, as a rule, are established for the structural units "from the level achieved," and progressive methods (technical and economic substantiations, target-program and so forth) are applied considerably less frequently. Correspondingly, in economic analysis also the main method that is utilized is that of comparing the values of indicators that have been achieved with the planning values or the technical and economic norms and normatives.

As we know, the country's lack of an established standard methodology for developing both five-year and annual plans for NPO's (NIOKR-industrial financial plan) and the preservation of the existing policy of planning the work of structural units lead to a situation where the majority of associations do not develop a unified plan for the NPO as a whole. As a result the accounting for the expenditures and other cost-accounting results of the operation of the NPO differ for individual structural units.

The work practice of the country's NPO's shows that since the structural units included in them are, as a rule, legally independent, the financing of scientific research, experimental design and technological work and the reimbursement for expenditures associated with the development and assimilation of new kinds of products and technological processes at the present time comes from various sources, and not from a unified centralized fund for the development of the NPO. What has been said pertains also to the material incentive fund: so far a unified material incentive fund has not been formed in the NPO. Yet in certain NPO's of the instrument-building branch--such as Analitpribor (Tbilisi), Spektr, Burevestnik--individual attempts are being made to centralize some of the material incentive funds.

They studied the degree of utilization of economic levers and stimuli in the cost-accounting mechanism for management of the NPO. It turned out that in the practice of planning the indicators that orient people toward the achievement of final results are still not being sufficiently applied as directive ones. At the same time attempts are being made to utilize these indicators on the NPO's Promavtomatika, Spektr, Temp and others. It should be emphasized that the application of these most important final indicators is also being impeded by the lack of established methods for calculations.

The utilization of sanctions in the system of cost-accounting management is being carried out in practically all NPO's of the branch, but the classifier for cost-accounting complaints exists at the present time only in the NPO Mikroprovod. The responsibility for damage caused to structural units of the association is not always substantiated in the cost-accounting complaints that are submitted to the subdivisions who are at fault who are to reimburse for the material damage that has been caused. In the policy for satisfying complaints they have established economic sanctions at plants of only certain NPO's (Burevestnik, Analitpribor (Kiev) Analitpribor (Tbilisi) and others).

On the whole the degree of utilization of economic levers and stimuli in the NPO's is still inadequate: they are used primarily at series production plants, while in the scientific research institutes and experimental plants the degree of their utilization is significantly lower. Of the economic levers and stimuli for encouraging final results they most frequently apply indicators of production cost and economizing on the wage fund: least frequently of all--payments for resources and sanctions for material damage that has been caused.

A study of the level of information and technical support for the cost-accounting system in the NPO's showed that this aspect of the association's activity is also in need of further development and improvement. First of all it is necessary to create centralized normative-reference enterprises, particularly the development of normatives of the labor-intensiveness of NIOKR as a basis for planning the volumes, expenditures and numbers of workers. This work is being conducted in the NPO's Impul's, Elva, Analitpribor and others. It should especially be noted that in the Impul's NPO the normatives of labor-intensiveness are used as a basis for planning the work of all subdivisions engaged in the development of new technical equipment.

Long-term economic normatives have not become widespread in branch NPO's. Certain of these normatives are used only at the level of the structural units. In particular, we are lacking the following normatives: for determining in the five-year plan the volumes of expenditures for scientific research and experimental design work, for the formation of the wage fund for the NPO, for deductions from profit into the unified fund for the development of science and technology, and so forth.

During the course of the investigation they revealed the need to develop a unified system of normative reference information and unified documentation that is suitable for processing on computers. In the end this will make it possible to begin the creation of a multilevel integrated ASU [automated control system] NPO.

The achieved level of development of the system of cost accounting in the NPO is directly related to the utilization of the scientific and technical potential of the association and largely determines the final results of the scientific-production and economic activity of the NPO.

We conducted the evaluation of the potential of the NPO's with the help of a system of 49 indicators which were conventionally divided into three groups:

personnel, the material and technical base, and the scientific information base. Naturally, most of the attention was devoted to the scientific and technical potential of the head structural units of the association--scientific research institutes and design bureaus. Here the most important characteristics are: for the personnel component--the composition and skill level of the workers of the scientific research institutes and design bureaus; the material and technical component is determined by the capital-availability and the provision with production space; and the scientific-information component--by the information availability for labor, the proportion of research work and also work of national economic importance.

As a result of the investigation we revealed essential differences in the scientific and technical potentials of scientific research institutes of the head structural units and the NPO's as a whole. Thus, for example, the greatest potential of personnel with high qualifications--doctors and candidates of sciences--are found in NPO's that are located in existing scientific centers of the country--Moscow, Leningrad and Kiev. But the so-called "peripheral" NPO's are much better equipped with production sites than the ones in the capital are and they have greater capital-availability.

As for the final results of the activity of individual NPO's, during the course of the investigation it was established that the scientific and technical potential is undoubtedly a decisive factor, although not the only one. The final results of the activity of the NPO are essentially influenced by the achieved level of development of cost accounting, the degree of specialization, the conditions for functioning, the degree of unification of the work, and other factors. On this plane the most essential results are regularly achieved, for example, by the NPO's Impul's and Spektr as a result of series assimilation of the majority of their developments, the great national economic need for them, their considerable amount of exports, and their high degree of unification and specialization.

On the whole the investigation showed that in scientific production associations of the branch, after the publication of the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 and the other normative acts that were adopted after it, the work for increasing the influence of cost-accounting methods on the effectiveness of production and the quality of work became more active. But this still has not led to all-around development of cost-accounting in the NPO's to a level which corresponds to the normative.

Evaluation Conducted. What Next?

During the course of the investigation of NPO's of the Ministry of Instrument Making, Control Systems and Automation Equipment shortcomings and unsolved problems related to the application of cost-accounting methods were revealed. The opinions of general directors and their deputies for economics as well as leading specialists of economic divisions and services of the associations were studied. These opinions were studied with the help of questionnaires.

The leading workers of the NPO's that were investigated consider the incomplete implementation of measures envisioned by the decree of the CPSU

Central Committee and the USSR Council of Ministers, "On Improving Planning and Stepping Up the Influence of the Economic Mechanism on Increasing the Effectiveness of Production and the Quality of Work," of 12 July 1979 to be the main reason for the shortcomings and difficulties in the implementation of internal cost-accounting.

Second in importance was the lack of a direct dependency between material incentives and the labor contribution of the collective of the structural unit to the final results of the activity of the NPO. In two associations--Analitpribor and Elva--the people who were questioned called this reason No 1. The most important reasons (approximately the same value) were given to be the separation of the plans of scientific research institutes (design bureaus) and experimental and series production plants; the absence in the associations of a special subdivision which provides methodological guidance of the improvement of cost accounting; the great labor-intensiveness of the work associated with the introduction of accounting, reporting, evaluating and revealing the labor contribution of each subdivision and worker.

During the process of the investigation we also revealed factors that impede the reduction of the cycle "research--production." Specialists think that the main factor impeding the accelerating of developments and the introduction of their results and production is the weak experimental base.

Second in significance is the factor of the lack of balance of the capacities of scientific research and production subdivisions.

In spite of a certain range of opinions, specialists of the NPO's are fairly unanimous about a number of factors: the complicated system for coordinating technical documentation, prices for new products, increments to prices for products which have been awarded the State Emblem of Quality, shortcomings in material and technical supply and material incentives.

Thus we can name the main factors that impede the deepening and application of cost-accounting methods everywhere in the management of NPO's. They are generated by the dispersion and lack of balance of scientific and production constituents of the NPO, the poor operational and management independence of the NPO in the area of managing structural units, the hypertrophied role of series production plants that are included in the NPO, the imperfection of methods of substantiating planning assignments and evaluations of their fulfillment, the poor quality of norms and normatives for the utilization of production resources, the imperfection of the system for accounting for expenditures in the structural subdivisions of the NPO, the ineffective system of sanctions for material damage that has been caused, the lack of a simple dependency between the amount of material incentives and the labor contribution of the collective and of each worker to the final results of the activity of the NPO.

In order to render practical assistance to NPO workers in improving cost accounting, the Ministry of Instrument Building, Control Systems and Automation Equipment has developed and is introducing methodological recommendations, as was pointed out above. They give answers to the questions of what must be done and how it must be done in order for the cost-accounting

system in each NPO to approach the established normative level. But one must say directly that practical application of these recommendations is impeded because of the fact that the country does not have a number of unionwide provisions that regulate the activity of the NPO. The development of these provisions and their experimental testing in various branches of the national economy is a primary task.

Existing practice in the creation of NPO's in the branches of the national economy has shown that some of them were formed hastily, without properly accounting for specialization, scientific and technical ties or even the territorial location of the structural units that are included in the associations. Such NPO's have not lasted for very long. But the tendency to transform an NPO into a PO remains even today. In order to eliminate it it is necessary to develop and approve unionwide provisions concerning the technical and economic justification for the creation of NPO's in the branches of industry.

It is necessary to solve a complex of problems associated with the organizational structure of the NPO, naturally, taking into account the specific features of the branches. Such structures should reinforce the optimal proportions between science and production, which will make it possible to avoid including the NPO's enterprises and organizations that do not have the correct profile. The main thing here is the question of the expediency of including enterprises with series production in the NPO's and the possibility of separating out large series production plans from the composition of associations that have already been created. This will make it possible to achieve an economic, and not an administrative unity of the NPO. Let us note that at the present time even summing up the results of the all-union and branch socialist competition is carried out separately for the scientific research institutes (design bureaus) and series production plants that are included in the NPO. The existence of standard organizational structures of NPO's in the branches will contribute to the elimination of disproportions in the development of both science and production.

As concerns the system of moral and material incentives for NPO workers, it is in need of radical improvement. It is necessary in reality to relate the amount of remuneration to the amount of actual contribution of the collectives of the structural units to the final results of the scientific and production activity of the NPO's. Here it is necessary to regulate in normative documents the policy for the formation and distribution of the unified material incentive fund of the NPO. And it is not at all necessary to break down the existing policy for providing incentives for individual structural units: it is important to find correct criteria for deducting from the centralized material incentive fund of the NPO a certain proportion of this fund for one structural unit or another, depending on its concrete contribution.

In order to transform an NPO into a unified scientific and production complex, it is necessary to essentially expand the operational and economic independence of the management staff of the NPO at the expense of limiting this independence on the part of the structural units. This will make it possible to efficiently redistribute resources--labor, material, financial and

others--among the structural units in the interests of the association as a whole.

In order to eliminate the undesirable consequences from the various categories of structural units, the NPO management must be given the right to equalize the wages of workers of scientific and production structural units who are performing identical functions.

As we can see, the shortcomings of the existing cost-accounting systems in the NPO's were generated not by any single factor, but a complex of factors that both do and do not depend on the efforts of the labor collectives of the NPO's. The creation of favorable economic conditions for the functioning of the NPO's requires immediate measures. The implementation of these measures lies in the mainstream of the restructuring of the economic mechanism which has been started.

FOOTNOTES

1. "Methods of Comparative Analysis, Evaluation of the Completeness of Cost Accounting and Its Improvement in Scientific Production Associations of Instrument Building," Novosibirsk, 1982, 165 pp; "Methodological Recommendations for Comprehensive Improvement of Cost Accounting in Scientific Production Associations of Instrument Building," Novosibirsk, 1984, 147 pp.
2. "Methods of Comparative Analysis, Evaluation of the Level and Improvement of the System of Cost-Accounting Management in Production Associations and Enterprises of Instrument Building," Novosibirsk, 1982, 96 pp.

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ECONOMIC WORK IN NPO'S DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 166-168

[Article by A. V. Moldavskiy, candidate of economic sciences, deputy general director for economics of the NPO Promavtomatika (Groznyy): "Changing the Style of Economic Work in the NPO"]

[Text] Our association, which was formed on the basis of a scientific research institute, a special planning and design bureau and an experimental industry, has been in existence for 8 years. With this kind of combination of structural units, within the framework of an NPO we think that the conditions exist for successful development and introduction of automated systems for control of technological processes (ASU TP), instruments and means of automation. In order to accelerate the introduction of the ASU TP, in industry and other branches of the national economy this year an installation and adjustment section has been included in the NPO.

At the present time the NPO Promavtomatika has assimilated the creation of distributional microprocessor systems on the basis of the KTS LIUS-2.¹ One of our microprocessor complexes, "Biotsikl," which is intended for controlling processes of fermentation in the microbiological industry and in the production of antibiotics, is recognized as the best development in the ministry in 1983.

Production of microprocessor complexes in NPO's increased fourfold in the overall volume of output in 1984 as compared to 1980, and in 1985--5.5-fold. In addition to these products the NPO produces a considerable quantity of instruments and means of automation which have been developed by the scientific subdivision of the NPO.

One can say with complete confidence that only the creation of the NPO has made it possible to sharply raise the scientific and technical level of developments of microprocessor equipment and, on the other hand, provide for increased production through its own efforts. Such are the fruits of economic and technological integration of science and production within the framework of the NPO. But how does one measure the growth of the initiative of scientific workers who can see how the embodiment of their ideas in practice is accelerated!

But the successes of the association in the scientific and technical area could be even more significant with the creation of the appropriate economic conditions whereby all of its structural units would be equally directed toward the achievement of the final results.

The final result of the activity of NPO's similar to ours is the introduction of the ASU TP at the appropriate technological facilities. All subdivisions of the NPO should be interested in this. But in fact the conditions for the formation and utilization of the economic incentive funds are different for each structural unit. There is no normative document that establishes the policy and the approach to the centralization of the economic incentive fund within the framework of the NPO. The provisions concerning the NPO point out the right of the general director to carry out this centralization, but it does not stipulate the conditions for the exercising of this right.

The all-union industrial associations that are under the jurisdiction of the NPO's, according to existing practice, conduct their own planning and economics work directly with the experimental plants, bypassing the leadership of the NPO. This violates the principle of one-man management, and the economic services of the experimental plant act in the interests of the plant, which do not always coincide with the interests of the NPO.

At the present time there has been an appreciable increase in the load on the economic services. But in many NPO's the distribution charts do not have the position of deputy general director for economic problems, and if it exists it does not stipulate that he must have a scholarly degree. Many general directors are forced to place the responsibilities of their deputy for economics on the chiefs of the divisions for technical and economic research and substantiation. The performance of these duties by the division chief who is sitting in "two chairs" as it were, has clear negative sides: in the first place, the economic work requires decisive actions which involve the interests of the structural units, individual managers and workers, and the division head occupies a competitive position... In the second place, it is impossible to hold such a deputy fully responsible. In the third place, in the higher organization they might simply refuse to recognize his authority, and so forth.

The question of the level of centralization and decentralization of management in the NPO is not a new one, but it seems to us that the solutions to many problems rely precisely on it. The branches should develop, taking into account their own peculiarities, standard structures for management of the NPO which would make it possible for the general director to change existing organizational structures and bring them in line with the increased requirements.

One of the major tasks set for the NPO's is a sharp reduction of the cycle "research--production." This reduction is achieved, along with other factors, as a result of parallel-sequential work within the framework of a unified all-round plan. But in NPO's that are creating an automated system for controlling technical process on the basis of microprocessor complexes that they have already developed and produced there arise serious obstacles on the

path to reducing the duration of the assimilation and introduction of new technical equipment. One of the peculiarities of computer equipment items is that one needs a technological testing ground and verification of the workability of the items and the system as a whole using imitation testing ground conditions. This is when they adjust the software for the system, eliminate bugs that are revealed and so forth. But according to existing instructions of the USSR Central Statistical Administration, commodity output of the experimental type should be packaged and sent to the warehouse as final products, that is, there is no mention of any testing ground or adjustment of the system....

Another variant of the solution to this problem is to increase the normative of circulating capital necessary for compensating for the increased duration of the manufacture of products (in connection with the need for a testing ground and testing the system). But even this problem cannot be solved simply. The solutions to these problems will make it possible to reduce the time periods and the costs of developments in NPO's without detracting from the results of their financial and economic activity.

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WAYS OF IMPROVING LABOR DISCIPLINE SUGGESTED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 169-174

[Article by N. V. Nogayev and K. M. Sul'dzhenko, associates of the division for scientific organization of labor: "In the Shops and Divisions: Experience--7 Years"]

[Text] In party documents the strengthening of discipline and order is regarded as one of the major prerequisites for solving socioeconomic problems. Here it becomes especially important to have deliberate discipline, self-discipline of the workers. Its formation and development is achieved by various methods, among which recently flexible schedules for work and recreation have occupied an important place.

The extremely great potential of "flexible" schedules, it seems, is far from exhausted. We are offering a small selection of materials in which the authors discuss the experiment in applying "sliding work schedules."

In our enterprise since the beginning of the 1970's we have achieved a satisfactory condition of discipline. But losses of working time because of departure from work with permission of the administration (so-called administrative absences) remained considerable as before. We did not manage to put all of the non-job-oriented matters outside of the working day. During working time we visited consumer service enterprises, hospitals, children's preschool institutions, schools and so forth. Time was simply lost and no one could make up for it.

In 1974 in the press there appeared an announcement concerning a new schedule: the "sliding work schedule" in Kokhtla-Yarve in the Estonian SSR. There, within certain limits, the worker himself planned the beginning and end of his working day, and with a mandatory working of an established norm of hours per month.

Having become familiar with the existing work experience on flexible schedules, we made a decision to begin an experiment in our plant. Initially it was necessary to select a variant of the working conditions.

For conducting the experiment we selected the section for winding condensor sections. This was not a random selection. Only women work here, they do only individual work and during the process of their labor the women do not depend on one another, and the wages are piece-rate. The work requires a great deal of attention, precision, spiritual calm and a healthy psychological climate in the section.

The temporary provisions concerning the flexible schedule envisioned granting the worker the right to determine the beginning and end of her working day, and it also established the hours when it was permitted to leave the work station and when it was necessary to be there.

During the subsequent year and a half certain advantages were revealed in working according to the new conditions as compared to the old ones. In the section there were no administrative leaves for doing personal errands, and there were no people who were late for work. An analysis showed that interrelations among the members of the collective and between the collective and the foreman improved. The authority of the foreman increased as did his rights: the worker could change the beginning or end of her work shift only with his permission. One can understand the psychological comfort when there is no need to hurry or to ask for permission to leave work for personal matters each time or fill out an application for leave without pay for a couple of hours.

The changeover of the section to the flexible schedule had a positive effect on production activity as well. After the introduction of the schedule the average output increased from 115 to 118 percent, labor productivity increased by 1.3 percent as compared to the plan, losses of working time were reduced considerably, the section had no overtime work during the course of the year, and there was a marked increase in the personal responsibility of the workers for the matters entrusted to them.

When everyone began to feel these advantages, the return to the old way seemed to be a deviation. There were requests to expand the experiment. As of 1 January 1978 the flexible schedule encompassed 744 people, including 622 piece rate workers, 78 time rate workers with normed assignments and 44 designers of the head technologist's division. A favorable effect was produced by the fact that the automated system of table accounting with the application of computers was in effect at the plant. It provides a reliable accounting for the time worked by all workers during the day, week and month, as well as other figures.

The administration and the public organizations devote a great deal of attention to the flexible schedule. This question has been discussed at an expanded meeting of the plant's technical council; at a meeting of the party committee they heard about the question of the results of the introduction of the flexible schedule and measures for improving this work. The discussion showed the expediency of even more extensive dissemination of it.

In 1978 the division for scientific organization of labor and the production administration in conjunction with the plant personnel division conducted a

comprehensive test of all subdivisions that were operating on the flexible schedule. A questionnaire of 300 people showed the high economic and social effectiveness of the work under the new conditions. In the subdivisions that use the flexible schedule, because of the sharp reduction of administrative unpaid leaves, the losses of working time decreased. For example, in Shop No 41, 152 workers who had been changed over to the flexible schedule used 330 days for administrative leaves during the course of the year, and the 151 workers who had the "rigid" schedule--1,652 days, that is, 5 times as many; and in Shop No 6 it reached 8 times as many. The utilization of overtime hours when changing over to the flexible schedule, for example, in Shop No 69 increased to one-third. In all of the subdivisions that are operating under these conditions there was a reduction of tardiness and there was also an improvement of the interrelations between the collective and the foreman.

The questionnaire showed the following:

all of those questioned think that the flexible schedule most successfully combines the interests of production and the workers;

most of the workers perceive the right granted to them to use the flexible schedule as an incentive for good labor and discipline;

80 percent of those questioned in three shops think that violators of discipline should not have this right;

the administrative of the shop takes advantage of the possibilities of the flexible schedule to eliminate mistakes that have been made in the organization of planning and management of production.

In order to clarify why the workers change their working conditions, the division for scientific organization of labor and the personnel division have developed and introduced in 35 production sections where the flexible schedule is used a journal for accounting for the time worked, and a coder of reasons for the "sliding" schedule. Within a half-year an analysis was conducted of the data from the report, which showed the following:

in collectives where the majority of workers are women the main reason for changing their schedule of the day is the need to care properly for their children (visit children's preschool institutions, schools, the dairy kitchen and so forth). Thus in the winding shop about 10 percent of the women begin their work day 20 minutes later than the time set for the shop because of this reason;

on an average for the plant more than 25 percent of the cases of changing the work schedule involve taking care of consumer services, organizing repair of housing or household equipment, and paying various taxes;

in third place comes study in evening training institutions, the performance of laboratory work, consultations and taking tests;

an insignificant number of workers of the third shift had to complete the working day early in order to hurry for city transportation;

on an average for the plant each day no more than 5 percent of the workers on the flexible schedule change their working conditions. During the summer months, especially on Friday, this number in individual shops, for example, the instrument shop, increases to 20 percent;

about 30 percent of all those transferred to the flexible schedule change their working conditions and the rest of them work according to the schedule set for the shop and do not take advantage of the possibilities of the flexible schedule;

the workers notify their colleagues, brigade leader and foreman of their intentions to change their hours on the previous night. As a rule, they take advantage of the flexible schedule for a particular period which is always the same, and everyone in the section knows about the reasons for this;

in many sections they have completely eliminated tardiness, absenteeism and early departure from work, and overtime work has also disappeared.

Today more than 1,700 workers and 243 engineers at the plant work with the flexible schedule.

During 7 years of application of the flexible schedule it has become clear that the most difficult problem is the organization of the accounting for the time worked, which we are constantly improving. We are making adjustments in the temporary provisions concerning the conditions for the flexible working day. We are studying the possibility of establishing for individual workers a 2-hour meal break without reducing the amount of time of mandatory attendance in production. A technological assignment has been issued for changing the design of the turnstiles in the foyer, and so forth.

We do not think that introducing the flexible schedule will solve all problems, but in our city one does not see workers of our plant who are mothers running (sometimes even with baby carriages) to avoid being late for work. We should like to recommend to those who are thinking about doing this: there is no need to fear that the majority of workers will all at once begin to change the schedule for their working day. Far from all of them will take advantage of this measure and, as a rule, it is because of serious reasons, for example, the illness of a child.

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EXPERIENCE IN PLANNING AND DESIGN WORK DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 174-178

[Article by A. S. Kustarev and N. M. Prokhin (Leningrad): "In Planning-Design Work: Experience--3 Years"]

[Text] In the scientific production association entitled "All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev" the flexible work schedule was introduced in January 1981. It involved nine divisions of the special design bureau (260 people). The basic conditions were the following. The work day of the designer can begin from 7 until 10 in the morning and end from 3:30 until 7 in the evening. The amount of working time can range from 4 hours, 45 minutes to 10 hours. Then it is necessary to work the same amount of time in a month as a "rigid" schedule. Accounting for the arrival (departure) of the workers and the time worked is done with a journal.

The changeover to work according to the flexible schedule, as a rule, passed through the following stages: preparation, introduction and investigation of the effectiveness of work with the new schedule.

In order for the flexible schedule to take hold, it was necessary for such production indicators as labor productivity, quality of documentation and discipline not only not to decrease, but even to rise to a higher level. For this it was necessary:

to prepare in an organized way for the introduction of the flexible schedule; to develop provisions that regulate the policy of work and to coordinate it with social organizations; in the subdivisions that have been changed over to the flexible schedule, to explain the rights and responsibilities of the workers; to coordinate the new schedule with other subdivisions;

to precisely adjust the system of accounting for working time--arrival, departure and overall amount of time worked, with effective control by the administration and social organizations;

the results of the labor of the workers who have been changed over to the flexible schedule should be strictly accounted for on the basis of normatives or other regulating documents and individual production assignments;

to allow a changeover to a flexible schedule only in those subdivisions for the level of production discipline and a conscientious attitude toward labor are sufficiently high.

In our organization an attempt was made to study comprehensively the influence of the flexible schedule on the productivity and quality of labor, discipline, the moral-psychological climate, and the conditions for the labor and recreation of the workers. To this end, for 2 years we studied:

1. The reasons for the deviations from the established working conditions. They were divided into three groups: production, nonproduction (social), and psychological.

An analysis of the results showed that 65 percent of the workers changed the accepted schedule because of social reasons, primarily family reasons, including caring for children, and also because of the possibility of selecting a time for traveling to work when the transportation is not overloaded.

2. The density of the arrival of workers at work in the morning in various time intervals---from 7 until 10 am.

Most of the workers (75 percent) arrive at work between 8 and 9 (for divisions that have not changed over to the flexible schedule the beginning of work was set at 8:30). Only 11 percent take advantage of the extreme intervals of permitted time of arrival: from 7 until 7:30 and from 9:30 until 10. Thus the permission to arrive at work in a broad time interval has very little effect on the disturbance of contacts among workers during the morning hours. The same thing can be said of the evening hours.

3. The effectiveness of the application of the flexible schedule and its influence on the production process and social-domestic conditions. For these purposes we conducted a questionnaire, an economic analysis and a written interrogation of workers who had been transferred to the flexible schedule, and we studied and generalized the subjective evaluations of the influence of the schedule on various aspects of production activity.

Participating in the questionnaire were 238 people or 90 percent of the workers who had been changed over to the flexible schedule, of whom 168 were women and 70 were men. The results were analyzed not only as a whole, but also for particular groups of workers, for example, for men and women; managers and rank-and-file workers, and youth and older workers.

When processing the results all the questions on the questionnaire were broken down into three groups for studying the influence of the flexible schedule on the production characteristics of labor, the psychological climate in the collective, and the conditions for daily life and recreation. For each group of questions we obtained a generalized evaluation of the flexible schedule by

the workers, and then an integrated evaluation of the flexible schedule. It was given a positive evaluation by 73 percent of the workers, 15 percent of them had not determined their attitude and only 12 percent of those questioned think that the flexible schedule does not exert a positive influence on the problems touched upon in the questionnaire.

In order to conduct a calculation of the economic effectiveness of the utilization of the flexible schedule, for the base period of time we used the 2 years preceding the introduction of the flexible schedule: 1979 and 1980. During the calculation we took into account losses from people in the hospital, the number of discharges, and the relationship between losses of time with the rigid and the flexible work schedules, as well as expenditures on the introduction of the flexible schedule and the annual output of documentation.

In order to clarify the attitude toward the flexible schedule of workers of various categories, lists of questions were distributed in the divisions. The respondents were asked to give responses with substantiation and examples, and indicate their name and position. Responses were received from 26 workers, including four division chiefs, six sector chiefs, three leading designers and eight designers of Category I--in a word, managers of the middle level and leading specialists. They are primarily responsible for such indicators as labor productivity, product quality, labor discipline and the moral and psychological climate in the collective. On the other hand this is precisely the group who were given extra work because of the introduction of the flexible schedule (checking on the time worked, increased requirements for individual planning, provisions of mutual interchangeability and so forth), and they are the ones who experience certain inconvenience from the flexible schedule: for example, there could be an urgent need for one worker or another, and he may not have appeared for work yet. Therefore it is accepted to think that the flexible schedule is convenient for the workers, but it considerably impedes the work of the managers. This is why the opinions of this group of workers were especially interesting.

Processing the results of the questionnaire showed that not a single one of the 12 questions was given an answer which indicated negative influence of the flexible schedule. On the contrary, everyone noted its positive influence on various aspects of production activity, and it was particularly emphasized that with the changeover to the flexible schedule labor productivity and quality documentation increased. The reasons indicated in the answers can be combined into four groups:

1. Labor organization improved: they began to plan more efficiently the work of the immediate workers, developed interreplaceability, increased independence in decision-making, and it became possible to take into account individual peculiarities of the ability to work and also to coordinate the work schedules of the subdivisions.

2. Labor discipline became stronger: there were no more departures during working time for personal problems, the morning time of getting ready for work decreased, and tardiness practically disappeared.

3. The value of working time increased since the worker becomes his own boss to a considerable degree and tries to utilize for work those hours when his productivity is high and when he is not distracted by outside concerns.

4. The number of stress conditions decreased and social and domestic conditions improved. To a considerable degree we solved such problems as transportation, caring for children, trade and medical service, and so forth.

Thus the flexible schedule served as a kind of catalyst for further strengthening of labor discipline and increasing productivity and improving the quality of labor. The output per one designer increased by 15 percent. The flexible schedule produces greater possibilities of preventing illness: it is more convenient to go to see the doctor and one can reduce the length of the working day if one is not urgently needed. The food conditions also improved: in the morning it is possible to have a peaceful breakfast without being afraid of being late to work, and groceries can be purchased for the family either in the morning before work or in the evening when one completes the work day early. Losses from illness decreased by 19 percent. The annual economic effect as a result of more complete utilization of more complete utilization of working time (not including increased labor productivity) amounted to more than 22,000 rubles, which is tantamount to working 2,500 man-days as compared to preceding period, or translated into one individual--10 days.

There were practically no more conflicts in the collective and people became calmer and more even-tempered. In the questionnaire this was noted by the majority of the workers. There was greater satisfaction with working conditions, which had an influence on reducing the level of labor turnover--from an average of 24 people in 1979-1980 to 10 in 1981-1982.

Working for a certain period of time without a supervisor and sometimes performing work of comrades who are temporarily absent, for example, answering questions that arise among workers of other subdivisions--scientific laboratories, plants and so forth--the collective acts in a new capacity: the factor of high performance and reliability of work increases. A calm, favorable situation and a favorable moral and psychological climate are created. There is a qualitatively higher degree of organization of the process of labor--its self-regulation whereby all random misunderstandings and delays caused by external factors are successfully overcome. The ability to continue work under changing conditions and the development of initiative characterize the degree of maturity of the labor collective.

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FLEXIBLE WORK SCHEDULE AND BOOKKEEPING OFFICE DESCRIBED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 179-180

[Article by V. M. Livshits, candidate of psychological sciences, head of the laboratory for scientific organization of labor, Scientific Research Institute of Shales (Kokhtla-Yarve): "In the Bookkeeping Office: 10 Years of Experience"]

[Text] The experiment with the flexible work schedule has been continuing in the country for more than 10 years now. We began to apply it on 1 December 1972. The spreading of the flexible schedule in our region is now characterized by the following data. In Estonian SSR industry in 1981 this kind of schedule was used at 22 enterprises; it encompassed 1,803 people, of whom 853 are workers. In Kokhtla-Yarve in 1982 it was used at 10 enterprises and organizations, affecting 650 people. Of course, people working according to this progressive schedule still comprise a small proportion, but the number of enterprises and organizations enlisted in the experiment makes it possible to assert that we now have sufficient experience in introducing the flexible schedule among leaders of many collectives.

In this note we wish to show that the flexible schedule is applicable and useful in such institution collectives as the bookkeeping office.

The bookkeeping office of the PO Slantsekhim in Kokhtla-Yarve has been operating on a flexible schedule since 1 December 1972. We have been observing its operation since 1974. In 1977 we conducted a questionnaire in the collective in order to study the effectiveness of the flexible schedule, and in 1982 we repeated the questions on the same questionnaire. Here is how its usefulness is evaluated by the collective that was investigated (see table).

From the summary results it is clear that during the past 5 years on an average the indicators of the effectiveness of labor of those who utilize the flexible schedule has increased 1.2-fold. There has been an especially strong influence on the psychological climate (a fivefold increase in ratings), a reduction of illness (to one-third) and a reduction of labor stress (to five-ninths). Although 10 years have already passed, maximum level has not yet been reached with respect to certain indicators. Obviously, in order to

establish a flexible schedule even a decade is not a very long period of time. The collectives need sufficient social experience.

Results of Questionnaire of Bookkeeping Office in PO Slantsekhim

<u>Indicators</u>	Positive answers, % of those questioned	
	<u>1977</u>	<u>1982</u>
Increased satisfaction with work	71.5	88.5
Increased labor productivity	59.1	73.1
Improved relations with collective	11.2	55.6
Improved relations with superior	44.5	76.9
Improved relations with subordinates	42.9	44.4
Reduced work strain	48.1	85.2
Increased attention to child-rearing and cultural leisure	85.1	84.0
Improved work planning	80.8	80.0
Improved utilization of nonworking time	99.1	95.8
Increased value of time	75.0	92.0
Improved food services	72.0	74.1
Reduced illness	12.0	37.0
Recommend flexible schedule to others	75.8	81.1
Average data for all indicators	59.8	74.5

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BOOK ON RESOURCE ECONOMY REVIEWED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 181-185

[Review by R. N. Yevstigneyev, doctor of economic sciences, Institute of Economics of the World Socialist System of the USSR Academy of Sciences (Moscow), "Ekonomiya Resursov. Opyt Sotsialisticheskikh Stran" [Economizing on Resources. Experience of the Socialist Countries], edited and foreword by R. A. Belousov and V. I. Pavlyuchenko, Moscow, "Progress", 1984, 280 pp]

[Text] I wish to begin the review of this book, which was written by authors from nine CEMA countries, with words which are usually used to end a review: one can only regret that the work was published in a small edition--only 4,500 copies. In my opinion, it should seriously interest managers of associations and enterprises, workers of ministries and departments and EKO readers. This is a real encyclopedia of the experience in economizing on resources which has been generously shared by specialists of the sister countries.

The book has many levels. It gives both a broad approach to the problem associated with the changeover to the intensive type of expanded reproduction and the corresponding changes in the economic mechanisms of the countries, and a narrower approach--an analysis of the concrete experience of the countries in economizing on individual kinds of resources. This experience originated under the conditions of the rapid rise of world prices for energy resources. For foreign CEMA countries which are connected to the world market by close ties economizing on resources has become a vitally important issue.

Each country has made and continues to make its own original contribution to solving this problem. Unfortunately, even a simple list of measures which are useful for our practice cannot be given within the space of this review. Therefore we shall focus attention mainly on the experience of two countries--the GDR and Hungary--which, by general recognition, have managed to achieve the greatest success in the area of economizing on resources. In the GDR the proportional expenditure of energy bearers, raw material and processed material per unit of national income has dropped each year: during 1971-1975--by 2.8 percent, during 1976-1980--by 3.9 percent, and the plan for 1981-1985 envisions a reduction of 6.1 percent. In 1981-1982 the increase in national income was achieved with a reduction of the overall volume of material resources by approximately 1 percent. In Hungary the proportional

consumption of energy per unit of national income in 1978-1983 decreased by 7.6 percent while in the preceding 5 years it annually increased by 3.5 percent. The proportion of consumption of petroleum in the country's energy balance during 1978-1983 decreased from 41 to 30 percent.

By what methods was this achieved?

In the GDR, as was noted in the book, all the diverse questions of economizing on resources have been considered in recent years from the standpoint of the output of products with the deepest degree of processing: "It is impossible to achieve the necessary economy of energy bearers, raw materials and processed materials by turning to traditional methods alone. For a decisive increase in the effectiveness simply reducing expenditures per unit of output is no longer sufficient. It is necessary on the scale of the national economy to consistently multiply the final result of production activity, in other words, to achieve output of products with the deepest degree of processing. The enrichment of products is carried out within the framework of a broad national economic program for increasing the consumer value and providing for high quality of products and productivity, that is, in the final analysis, for creating useful properties which are oriented toward satisfying qualitatively higher demands" (pp 117-118).

The author of the chapter emphasizes that enriching products involves all phases of expanded reproduction and all branches of the national economy. A primary role in this matter is played by the development and introduction of new technical equipment which determines almost 80 percent of the savings on material resources in the GDR today.

The experience of the GDR in the area of economy encompasses practically all kinds of resources. Let us give a couple of examples. First of all let us note the country's success in utilizing secondary raw material, whose proportion in the overall volume of consumption of materials amounts to all of 10 percent, and for individual kinds it reaches even more impressive amounts. Thus the steel-smelting industry satisfies more than 70 percent of its need for raw material with scrap metal, the pulp and paper industry--47 percent from scrap paper, the production of lubricants--20 percent from used oils, and the production of glass--75 percent from salvaged glass.

The book discusses in detail the methods by which one can successfully achieve such serious results. Here is one of them: the formation of special combines for enriching metals and utilizing secondary raw material. In Halle, for example, the combine for enriching metals includes more than eight enterprises and 170 branches, which are joined to 40,000 procurement points. In order to increase the effectiveness of the gathering of metal scraps, specialized receiving points are created: for procuring cable, scrap alloy steel, scrapped electronic equipment, and also for obtaining silver from photochemical elements. They are located in such a way that transportation expenditures are optimal.

Another area for economizing is improvement of the consumption of secondary industrial heat, which is the most inexpensive and relatively easily utilized energy resource. According to calculations of GDR economists, putting it to

work requires only one-sixth of the funds necessary for the corresponding expansion of the primary energy base. The Loyna Chemical Combine is already utilizing approximately 75 percent of the heat wastes. The country has accumulated interesting experience in compiling so-called "atlases of discharged heat" which include all of the most important sources of secondary energy and are the basis for developing territorial comprehensive programs for its utilization.

The reader can also glean much that is useful from the GDR experience in the area of effective utilization of initial energy bearers and raw material, extensive application of microelectronics in order to deepen the degree of a broad assortment of items, and so forth.

In Hungary since the end of the 1970's they have been carrying out a long-term energy program, and in 1982 they drew up and began to implement two more comprehensive programs: for streamlining the utilization of materials and salvaging wastes (secondary raw material). In these programs, first and foremost, they have formulated quite clear-cut concrete assignments with calculations of the proposed effect and capital expenditures. For example, the energy program contains such assignments are reducing the proportion of consumption of coke in the production of iron during the five-year plan from 677 to 587 kilograms per ton (expenditures--2.8 billion forints); burning wastes from agriculture and forestry, and also the food industry, which will make it possible by 1985 to obtain as much energy as is produced by about 300,000 tons of petroleum a year (4.5 billion forints); reduction of the consumption of energy by automotive transportation (0.7 billion forints), and so forth. Let us note, incidentally, that the consumption of gasoline per motor vehicle in private use has decreased in the country (mainly because of the increase in prices for gasoline) even during 1975-1980 from 819 to 640 liters. In order to save on energy in daily life, since the second half of 1981 new apartments have been equipped with instruments for measuring the temperature in the premises and of hot water, regulating it and making the consumer responsible for paying for the expenditure of energy.

A typical feature of the Hungarian programs for economy is the extensive utilization of economic levers for implementing them--prices, credit, the income policy. Thus, for purposes of economizing on materials, they envision taking into account in price formation the world level of prices, consumer qualities of materials, the possibilities of replacing them and the degree of their shortage. When implementing programs for the utilization of wastes special significance is attached to the observance of a correct ratio of prices between primary and secondary raw materials.

The book also discusses in detail the experience and the development and implementation of programs in a number of other CEMA countries. In particular, in Czechoslovakia this is a program for efficient utilization of fuel and energy resources (the so-called "State Target Program-0.2" and "State Target Program for Efficient Consumption of Materials--03." In Bulgaria as early as 1976 they adopted the "National Comprehensive Program for Effective Utilization of Raw Materials, Processed Materials, Fuel and Energy" and the "Comprehensive Program for Gathering and More Fully Utilizing Secondary Raw Material."

Certain special financial and economic measures which are being applied in order to consume resources more economically deserve attention. For example, in Bulgaria the savings on material resources is a factor whose effect is stimulated to the greatest degree when forming the wage fund. If the enterprise's gross income is increased as compared to the preceding year as a result of reducing the production cost because of economizing on direct material expenditures per unit of output, the final wage fund increases by 30 percent of the amount saved. At the same time a number of sanctions are envisioned for overexpenditure of raw and processed materials. Since the beginning of 1983 the enterprises have been deducting into the budget sums equal to the value of the overexpenditure of the raw and processed materials that are in short supply, and for liquid fuel and electric energy--5 times the value of the overexpenditure. This exerts a regulating influence on the amounts of the resultive-residual wage fund.

Also in Bulgaria it is envisioned that in cases where the consumer of liquid fuel, natural gas, electric energy or thermal energy refuses to receive or does not fully utilize the quantity of these established in the agreement because of economizing on them, he does not bear property liability for failure to fulfill the agreement. But if the consumer of electric energy, natural gas or thermal energy exceeds the quantity indicated in the agreement without the permission of the supplier, he pays a penalty in the amount of twice the rate cost of the overexpended resources.

While trying to draw the readers' attention to the experience in economizing on resources in foreign CEMA countries, I have not discussed in detail the fact-filled chapter about improving management of economic resources in the USSR. This chapter really does deal comprehensively with the experience in economizing on resources, which, unfortunately, cannot be said about every chapter.

I should like to conclude the review with the words of the author of the chapter devoted to the GDR. I think these words can apply to all CEMA countries: "The practical experience of recent years shows that the achievement of high production growth turns out to be possible without increasing the consumption of raw material and energy resources, and sometimes even while reducing it. Not only theory, but also practice shows that the time has come for profound changes in the relationship between the rates of increase of raw material resources and economic growth" (p 122).

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CONFERENCE OF EKO READERS HELD

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 186-187

[Article by Yu. Voronov: "Readers' Conference in Petropavlovsk-Kamchatka"]

[Text] In Kamchatka on 5 October 1984 there was a conference of EKO readers which was conducted by the chief of the sector for the press of the Kamchatka CPSU Obkom, V. L. Gorbanko.

The speakers made many remarks, thus the chief of the Rybkholodflot base, V. M. Mikhaylov, said that the recommendations on this subject--how one must work--could only be irritating when in practice many innovations run counter to the recommendations of science. It seems to him that the central aspect in further improvement of the economic mechanism consists in increasing the mutual responsibility of the upper and lower echelons of management. Vladimir Mikhaylovich illustrated this idea with the example of associations of the fish industry. When they were formed there was a natural centralization of functions and it turned out that there was less demand for the performance of centralized functions than for the performance of functions that remained within the enterprises. V. M. Mikhaylov thinks that EKO still does not devote enough attention to describing such systems of economic management in which the responsibility for the performance of functions is balanced, regardless of the administrative level at which they are carried out.

The deputy general director of the Kamchatrybprom Production Association, V. N. Krasnokutskiy, noted that EKO readers might be very interested in the description of the history of the appearance of new ministries and certain other organizational formations. It would be useful to have a chronological description of the creation of new departments and if an article appeared with an analysis of the corresponding tendencies and patterns, this would be even better. V. N. Krasnokutskiy noted that one of EKO's shortcomings when discussing foreign practice is the clear preference for firms of Japan and the United States, and he felt that the geography should be expanded. And another thing: it would be very good to know the reaction of the ministries and departments to the majority of the materials in EKO. Other participants in the conference--production workers, instructors and scientific workers--also noted the shortcoming of the work of the magazine: weak concern for the effectiveness of the publications.

K. K. Kirko (ship repair yard of the Ministry of the Maritime Fleet) would like to read on the pages of EKO a presentation of the views of the USSR Ministry of Finance regarding regular reductions of administrative and management personnel.

Many of the speakers think that EKO does not devote enough attention to the Far East and the fish industry, although from examples of both the region and the branch one could raise a number of generally significant economic and organizational problems. The chief of the Kamchatka sector of the Institute of Economic Research of the Far Eastern Scientific Center of the USSR Academy of Sciences, F. I. Kolomiytsev, pointed out in particular that disproportion between the return of fishing associations of the Far East and the capital investments that are allotted, which does not contribute to increasing the interest in the final results. Everyone agreed with the opinion that the interbranch nature of EKO should be maintained more consistently and it should not print articles that are interesting only to a narrow range of readers.

A docent of the Kamchatka branch of Dal'rybvtuz, N. V. Gritsenko, noted the need, on the one hand, to strengthen the section "Questions of Theory," and, on the other, to improve further the accessible form of the presentation of materials.

Participants in the conference noted the growing popularity of EKO in the work practice of propagandists and expressed the wish that in some form there could be an indication of the connection between the materials for the subjects studied in the system of economic and political education.

On 8 October 1984 there was an organizational meeting of the business club of friends of EKO, which will work at the Kamchatka House of the Journalist. Candidate of Economic Sciences Fedor Ivanovich Kolomiytsev became the chairman of the club.

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RED TAPE MANEUVERS SATIRIZED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 1, Jan 85 pp 188-190

[Article by Yegor Belyayev: "And the Boomerang Never Returned...."]

[Text] It was clear that the quarterly plan was failing 15 days before it was over. One could look for the guilty parties, but that would not be constructive. In a friendly collective they do not waste time sweeping garbage out the hut. We still hope that our associates would let us down. That had happened frequently, and it was always appropriate.

Life is so dialectically layered that everything down to the last disgrace can be explained, which is simply marvelous! Let us take a strictly scientific example. Electrons flow in one direction, and the holes from them flow in another. Look at either the holes or the electrons but it is still electrical current....

With respect to blocks from the associates--it is the same thing and even simpler. The first variant: you, associate, give us electrons, that is, blocks. The second: instead of blocks give us objective circumstances whereby one thing or another has not been carried out. And then we together, in a friendly way, without separating will transfer this hole, that is, the circumstances, further along the chain. The movement is clear, and what is actually flowing--the holes or the electrons--is a different question....

The head engineer dropped his fishing line in various places five times, but did not catch any circumstances. Our associate did not want to come to our rescue, and did not give us the objective circumstances.

What kind of people are they? Have they no pride? They provide us with batching items according to the requirements and exactly on time! Everyone has sufficient qualifications nowadays, and an airplane can be made at any plant. But they do not do it because they have a conscience and a plan! The ask you: understand our position, rescue us, do not work for rewards, we do not need your blocks, it is better to give your associates objective circumstances, and then we will be useful to you as well!

But our associates did not understand simple things, and did not take our transparent hints. Therefore all of us almost agreed that it would be necessary to fulfill the plan at any price.

And then somebody submitted a good idea. The well-known idea about saving a drowning man. If we ourselves give our associates not parts, but assurances of the impossibility of providing them, in the end the required circumstances will return to us because of the universal interbranch relationship of cause and effect. The only doubts can be about the times. The boomerang absolutely must return before the end of the quarter.

Feeling out the chains of the associates was entrusted to the deputy chief who was respected for his talent with all measures. He immediately brought together two search detachments. They began an analysis in two areas: one--meeting the incoming flow of parts and semimanufactured products, and the other--going with the flow of products that were produced.

By evening the researchers had gone off in different directions. Satisfied, as if on vacation. It was pure scientific research work.

The breakthrough of the detachments came on the third day. The chain that was discovered consisted of only three links and amounted to a simple algorithm. If we do not deliver the terminals to plant A on time, the silver cannot be applied to them and they cannot be delivered to plant B; if plant B has nothing on which to apply silver, the plants cannot be sent to enterprise C, where they are to be pressed into cable; unpressed cables cannot be put into the rectifier which plant C is supposed to deliver to us in the set and precisely on time. And so, by sending to plant A objective circumstances instead of terminals, we will receive what we are looking for from plant C.

On top was a cautious warning: the quarterly plan may not be fulfilled because of a threat of the failure to deliver the rectifiers. They were silent. This means that they bit on it! We are especially brazen in calculating our future bonus in our minds.

And suddenly--bang! On the intercom like thunder out of the blue everything was going well--it was the voice of the sales chief saying that we had sent the container with terminals on time....

Everyone jumped up and ran to check. It turned out to be a false alarm. It has long been time to bring order into the sales division, there is unconscionable confusion in the documents. A brilliant idea was almost destroyed.

The quarter is coming to an end and we are waiting for a "hole" instead of the rectifiers.

But...in that quarter the boomerang did not return. The rectifiers came in good order! They were sent to us when we were already preparing the plan for overfulfillment by the method of excluding all doubtful positions.

We heard about this from above and began to turn our planning mechanism backward in order to put these positions back in. They said you have received the rectifiers, so produce your products--you have 5 days!

Well, our director explains to them in a human way: Where did you get the rectifiers? After all the pressed cable did not arrive at plant C....

"Why?" they ask.

"Because at plant B they did not apply silver to the terminals...."

"Because there was nothing to apply silver to."

The higher-ups were silent and they were bored with this cock-and-bull story.

"All right," they said, "write an explanation. But we will consider that there are no rectifiers because there can be none...."

And not until later, when everything was straightened out, did someone bring the explanation. Someone had made the terminals for our associate on a completely illegal basis. Hence the rectifiers. We had a feeling that there was sort of violation behind all this! We are not the only ones who pull strings. Because if everything were on the up and up, why would the boomerang not return?

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