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U S S R

TRANSLATIONS ON USSR TRADE AND SERVICES  
(FOUO 4/79)



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INTERNATIONAL ECONOMIC RELATIONS

CEMA ROLE IN INTERNATIONAL SOCIALIST DIVISION OF LABOR DISCUSSED

Moscow VOPROSY EKONOMIKI in Russian No 1, 1979, pp 92-99

[Article by Yu. Shirayev: "The Role of the CEMA in the Development of the International Socialist Division of Labor"]

[Text] The Council for Mutual Economic Assistance within whose framework ten European, Asian, and Latin American countries with a total population of 430 million are cooperating is effectively helping to strengthen the positions of socialism in the world economy.<sup>1</sup> The CEMA countries account for approximately one-third of the industrial output and one-fourth of the national income produced in the world. The activities of the CEMA are becoming not only an increasingly important factor in the social and economic development of its member states. They are exercising a growing influence on world economic relations as a whole.

At all of the stages of socialist construction the CEMA countries have provided each other with extensive economic and technical assistance. The CEMA, as L. I. Brezhnev emphasized, has given the world "a unique experience in equal cooperation by a large group of countries, in the harmonious combination of their national and international interests, and in the practical realization of the principles of socialist internationalism."<sup>2</sup>

In 1979 the world's largest economic cooperation organization is celebrating two important dates--three decades of its work and the tenth anniversary of the 23rd Session of the CEMA (1969) which adopted at the highest party and government level a decision to develop socialist economic integration. Both of these dates are important landmarks in the practical utilization of the advantages of international economic relations of a new type and in the concretization and development of the forms and methods of socialist economic management in the international arena.

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The formation of the CEMA in 1949 was a logical consequence of the establishment of relations of a new type between the Soviet Union and the countries which had taken the path of the construction of socialism. Even before the complete liberation of the countries of Eastern and Central Europe from the fascist yoke people's-democratic agencies of power were formed on the territory of a number of them. As early as 1944-1945 the first inter-governmental agreements were concluded which provided for mutual aid in the restoration of the war-torn economies and which laid the basis for mutual relations organized on the principles of socialist internationalism. In subsequent years the political and economic alliance of the fraternal countries acquired increasingly clear forms. Economically, this alliance was made formal by the creation of the Council for Mutual Economic Assistance.

The system of cooperation by the CEMA countries has undergone several stages in its development during the course of which problems of diverse socio-economic character and scope were solved. Thus, the basic forms of interaction between these CEMA countries which were used during the first postwar years played the role for most of them (with the exception of the Soviet Union) of the foreign economic conditions for the construction of a socialist economy and the accomplishment of the tasks of the transitional period from capitalism to socialism.

The new social system in each country which had taken the path of socialism had to be based on an adequate material and technical base. However, the development of the material and technical base of socialism is the result of a quite long process of the transformation of the elements of the material and technical base inherited from capitalism, of the formation anew of a number of them, and, finally, of the unification of all of these elements into a single system which ensures the functioning and dynamic development of all of the spheres of the production and non-production activities of socialist society.

One of the most important characteristics of the formation of the material and technical base of socialism in the foreign CEMA countries consisted in the fact that to a large extent it was founded on the already created material and technical base of the new social system in the Soviet Union, and then in a number of other countries of the socialist commonwealth.

The role of the Soviet Union in the accomplishment of this very large socio-economic task is well-known. The USSR's natural resources have been and continue to be of decisive importance for providing the growing industry of the foreign CEMA countries with fuel, mineral raw materials, and metal. Thus, at the present time the Soviet Union covers more than 70 percent of the import needs of the CEMA countries for these goods, while for certain basic types of raw materials and fuel this proportion reaches practically 100 percent.

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The USSR has become the largest supplier for the CEMA countries of machinery, equipment, and transportation equipment and has given them technical assistance in the construction, reconstruction, and expansion of more than 2,000 diverse enterprises, shops, and other objects. The Soviet Union has given these countries around 78,000 sets of technical documents and product and materials models and has provided extensive help in the training of national cadres. At the same time, the Soviet Union has served and continues to serve for the countries of the socialist commonwealth as the basic market for the sale of their machinery, equipment, and industrial consumer goods.

As the economic and scientific and technical potential of the foreign CEMA countries has grown they have also joined on a wide scale in the process of collective assistance for the formation of the material and technical base of the whole socialist commonwealth. Mention should be made, in particular, of the large deliveries of machinery and equipment (including overall equipment) from the GDR, Czechoslovakia, and Poland and about the increasing amounts of deliveries of specialized output from Bulgaria, Hungary, and Romania.

An essential characteristic of the formation of the material and technical base of socialism in the foreign CEMA countries has been the substantial differences in the initial levels of their economic development and in the unequal degree of the development of the preconditions for accomplishing the above task within the framework of the preceding formation. Only two countries--Czechoslovakia and the GDR--possessed a developed industry, skilled labor resources, a marked scientific and technical potential, and a highly productive agriculture. As a result, they did not have to carry out, for example, socialist industrialization in its classic form; that is, to practically recreate the basic branches of industry which serve the economy and the system of the production and non-production infrastructure and to shift all agricultural production onto a modern technical base.

In addition to solving the problem of eliminating the consequences of the war on their territory which was common for all of the countries, the Czechoslovakian Socialist Republic and GDR were faced by the task of the socialist reconstruction of industry and of the economy as a whole and of overcoming the disproportions in the branch and assortment structure of production which had been inherited from the past. This task was an especially acute one for the GDR. Despite the above difficulties, the Czechoslovakian Socialist Republic and the GDR quite rapidly restored and increased their industrial potential and began to make an appreciable contribution to the process of the socialist industrialization of the other CEMA countries.

The remaining European socialist countries belonged to the medium-developed (Hungary, Poland) or the least developed states (Romania, Bulgaria). All

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of these countries had to carry out socialist industrialization at forced rates, making use in certain cases of certain elements of the old production apparatus (the coal industry, ship building, and some of the enterprises of light industry in Poland; bauxite mining, and some enterprises of the light and food industry in Hungary; petroleum fields and the wood-working industry in Romania), while in other cases (the most typical example in this respect is Bulgaria) they had to form the industrial base of the national economic complex practically anew.

The qualitatively different conditions in which the foreign CEMA countries began the formation of the material and technical base of socialism<sup>3</sup> meant, in essence, that within the commonwealth an experiment of unique dimensions and socio-economic consequences was being conducted: the accomplishment of an essentially single task in the face of diverse initial preconditions and sharp gaps in levels of economic development.

The successful accomplishment of this task in all of the above countries has demonstrated the exceptionally high effectiveness of socialist methods of economic management and of the international relations of a new type. As, for example, approximate calculations show, the gap between the individual CEMA European countries in the production of per-capita national income decreased from 3.2 times in 1950 to 1.4 times in 1976, while for the production of industrial output the decrease was from 5 to 1.5 times.

Within the socialist commonwealth the process of the formation of the material and technical base of the new social system in the foreign socialist countries is thereby being carried out with incomparably more favorable foreign economic preconditions than was the case in the Soviet Union which had to accomplish this task in the face of a capitalist encirclement.

The formation of the material and technical base of socialism in the foreign CEMA countries was connected with the necessity of solving a number of difficult problems. It has to be considered, first of all, that this process could be carried out only on the basis of the concrete production possibilities which were possessed by the CEMA countries. The production apparatus which was in the process of being formed, especially in those countries which did not possess a developed industry, inevitably had to reproduce the most essential features of the production apparatus which existed in the other socialist states. One of the side effects of this was a definite universalization of production structures whose emergence, in addition, was made objective by the existence of a number of common deficits for the most important types of output.

The realization in all of the CEMA countries of programs of postwar reconstruction and development engendered shortages of many types of resources, including resources of investment goods, which at first objectively decreased the possibilities for a collective maneuver and

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prevented the formation of production structures oriented not only toward the satisfaction of basic intra-economic needs, but also the needs of other countries. The movement across national borders of goods and services under these conditions (especially during the first postwar years) was to a substantial extent, above all, a material expression of international mutual help, and not a result of a planned division of labor strictly based on the criteria of economic efficiency.

Finally, it also has to be noted that the historical situation, above all the policy of the "cold war" which was carried out by the imperialist states, demanded a rapid reorientation of the geographical directions of the foreign economic relations of many of the socialist countries in order to unite their efforts for economic progress. This reorganization placed many countries before the necessity for an accelerated creation of productions to satisfy economic needs which previously were traditionally satisfied through imports from third countries.

All this could not but have an effect both on the qualitative and on the quantitative characteristics of the development of the international socialist division of labor during at least the first two post-war decades. In addition, time was also required for the creation of an effective mechanism of economic cooperation adequate to the new type of international division of labor. As practice has shown, this was a difficult task which in a number of its essential aspects has retained its importance today.

The solution of the above problems was achieved (and is being achieved) through a deepening and development of the international socialist division of labor and through bringing the production capacities of the CEMA countries into correspondence with the collective needs of the socialist commonwealth, all of which presupposes an active utilization of the possibilities connected with the work of the CEMA and its agencies.

At the first meetings of the CEMA concrete proposals were worked out on the solution of the most important problems of the "start-up" period of its work. In particular, at the Second Session of the CEMA (August 1949) it was found advisable to develop mutual trade among the member countries on the basis of long-term agreements, the principles of scientific and technical cooperation and of an exchange of technical experience were worked out, and the question of the development in the CEMA countries of the production of ballbearings was examined, which, in essence, was the first approach to the development of international production specialization and cooperation.

The subsequent meetings of the CEMA were of great importance for the formation of the mechanism of planned cooperation in the sphere of production. The Seventh Session (1956) discussed the problems of coordinating development plans for the basic branches of the economies of the CEMA countries for the period 1956-1960: the machine building, coal, petroleum and gas,

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and chemical industries, a number of branches of light industry, ferrous and nonferrous metallurgy, and agriculture. The growth of the dimensions of the cooperation resulted in the adoption at this session of a decision to establish permanent CEMA commissions on economic and scientific and technical cooperation which had the task of promoting the development of economic relations among the CEMA countries and organizing multilateral economic and scientific and technical cooperation in the most important branches of the economy.

The greater complexity in subsequent years of the production structures in the CEMA countries and a further deepening of their economic relations led to the necessity for improving the forms and methods of regulating their cooperation. The coordination of the direction of its development solely by means of coordinating foreign trade deliveries, which was practiced at the initial stage of the cooperation, ceased to correspond to the increased maturity of the economies of the CEMA countries. The need arose to move to new and more effective forms and methods of regulating the international socialist division of labor and, above all, to move to a strengthening of planning principles in its development.

By the middle of the 1950's, when the foundations of planned socialist economic management had been formed in all of the CEMA countries, it became possible to move to the coordination of five-year national economic plans. At the same time, important steps were taken in rationalizing the developed system of mutual relations by means of working out recommendations on international production specialization and cooperation for individual types of industrial output.

The recommendations which were adopted during those years helped to develop bilateral and multilateral cooperation and to achieve the coordination of the first CEMA long-term national economic plans. The practical realization of these recommendations promoted the successful fulfillment of the national economic plans, the achievement of high economic development rates, and the realization of fundamental socio-economic transformations in the states which were solving the problems of the transitional period from capitalism to socialism.

The Conference of the Representatives of the Communist and Workers' Parties of the CEMA Member Countries (May 1958) which mapped out a concrete program of work for it for the forthcoming years was of great importance for the realization of the important new tasks of cooperation. Basing itself on the cooperation experience which had been gained, the Conference gave instructions to coordinate the national economic plans for 1961-1965, concentrating the efforts of the countries and CEMA agencies on a comprehensive development of the raw material branches of the economy and of power engineering, on a further development in introduction of new equipment, and on strengthening production specialization and cooperation in machine building.

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In subsequent years decisions were made which were aimed at improving the forms and methods of the organization of mutual economic cooperation. Thus, the Conference of Representatives of the Communist and Workers' Parties of the CEMA Countries (June 1962) recognized the coordination of national economic plans as the basic method of the CEMA's work and the chief means of the planned development and deepening of the international socialist division of labor. This conclusion followed from the objective need to place their mutual division of labor at the service of optimizing the development of the national economic complexes of the fraternal countries and of ensuring greater balance in the basic proportions of the commonwealth as a whole. The Conference approved "The Basic Principles of the International Socialist Division of Labor" which had been worked out by the Fifteenth Session of the CEMA. These principles were the theoretical and practical foundation for the realization of measures aimed at an intensification of the international socialist division of labor and they helped to solve a number of new problems which had arisen as a result of the increased dimensions and complexity of the structure of mutual cooperation.

The period of the 1960's was characterized, in this way, by a substantial intensification of mutual cooperation and an expansion of the international market of the CEMA countries. The movement of the growing commodity masses among the CEMA countries took place during this period not so much under the influence of temporary needs and relative "surpluses," as of a profound long-term division of labor. An especial role was played here by the coordination of many important indicators of the national economic plans for 1961-1965 and 1966-1970 and by collectively developed recommendations regarding the international specialization of the CEMA countries in the production of more than 5,000 types of machines and equipment and more than 2,600 items of chemical products. Of considerable importance was the conclusion of bilateral agreements which provided for cooperation in the production of parts and units, joint scientific research and planning and designing work, and the joint financing of the development of the production and exportation of raw materials.

The increasing internationalization of the economic life of the CEMA countries manifested itself during this period in the joint development of international transportation, the unification of power systems, and the creation and development of the activities of international economic and scientific and technical organizations.

The growth of their economic and scientific and technical potential and the accumulation of practical experience in economic interaction made it possible to set the system of CEMA cooperation even more complex and large-scale tasks, including assistance in the construction and further development of a highly developed socialist society, a consistent unification of the advantages of socialism and the scientific and technological revolution, and the strengthening of the economic foundations of the national economic complexes of all of the fraternal countries.

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During the 1960's the necessity began to be felt with increasing urgency for the formation of the kind of model of economic interaction between the socialist countries which would make it possible to create an integrated system of economic relations organized with regard to the long-term tendencies of scientific and technological progress, the future tasks of the socio-economic development of the socialist commonwealth, and a consistent realization of the potentials existing in the planned mutual division of labor.

The degree of socio-economic homogeneity which the CEMA countries had attained by that time created favorable preconditions for strengthening their interaction. The higher level of the development of the socialist social system was urgently demanding a maximum use of all of the possibilities of cooperation for the accomplishment of such key tasks as increasing production efficiency, accelerating technological progress, and raising standards of living.

The 23rd Session of the CEMA which was held in April 1969 in Moscow with the participation of the leaders of the communist and workers' parties and heads of governments of the member countries of this organization was an historical landmark in the development of the economic cooperation of the CEMA countries and of an overall improvement of its forms and methods. The especial importance of the session consists in its validation of a shift to a qualitatively higher stage of cooperation--international socialist integration. "Practice has brought us," L. I. Brezhnev said in his report at the 24th Congress of the CPSU, "to a common conclusion: it is necessary to deepen production specialization and cooperation and coordinate national economic plans more closely, in a word, to move along the path of the economic integration of the socialist states."

The 23rd Session of the CEMA defined the basic directions for the development of an overall long-term program for the development of the economic relations of the CEMA countries. The overall program for the deepening and improvement of the cooperation and for the development of the socialist economic integration of the CEMA member countries which was approved by the 25th Session of the CEMA in July 1975 developed and concretized the principles of relations between the socialist states. It contains, in essence, a general plan for the joint economic and scientific and technical work of the CEMA countries for several five-year plans in advance. While deepening and enriching the foundations of the cooperation, the Overall Program at the same time defines a broad aggregate of interconnected concrete measures (it contains around 200 measures of diverse character which are slated for study, development, or realization) and establishes the schedules and organizational and legal mechanism for their realization through the joint efforts of the fraternal countries. The adoption by the CEMA countries of the Overall Program laid the basis for a systems approach to the achievement of their collective goals in all fields of cooperation.

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Among the measures to develop cooperation in the field of science and technology, the Overall Program maps out means and methods which cover the joint development of strategies for the further development of science and technology. Among them the most important are the systematic holding of consultations on the basic problems of scientific and technological policy, the development of scientific and technological forecasts, and the joint planning of development work by interested countries on the most important scientific and technical problems.

As is noted in the Overall Program, the basic method of the organization of cooperation is cooperation in the field of planning work whose distinctive feature at the stage of integration consists in a shift from the coordination of mutual commodity turnover to the coordination of the economic work of the CEMA countries directly in the sphere of production, science and technology, and capital construction.

This is to be promoted by an improvement of the forms of joint planning, in particular the adoption by the countries at the 29th Session of the CEMA (1975) of the Coordinated Plan for Multilateral Integration Measures, and the inclusion in economic plans of sections on economic cooperation within the CEMA. The CEMA Committee on Cooperation in the Field of Planning which was created at the 25th Session of the CEMA has an important role in working out the measures to raise the level of planning in economic cooperation.

As a result, an overall system of cooperation in the field of planning has developed in the CEMA which makes it possible to successfully accomplish major economic tasks in industry, transportation, agriculture, and capital construction and to carry out large-scale projects to develop raw material and power resources and protect the environment.

The development of long-term special-purpose cooperation programs is the next step in improving the planning base for the solution of important problems of the socialist commonwealth. The work of the countries and CEMA agencies in this field has already produced important practical results. The 32nd Session of the Council (June 1978) approved long-term special-cooperation programs in the field of energy, fuel and raw materials, agriculture, and the food industry, and also in machine building. These programs have been worked out in accordance with the decisions of the communist and workers' parties of the CEMA countries concerning the development and deepening of economic and scientific and technical cooperation among the CEMA countries and they reflect the agreement of their leaders.<sup>4</sup> Cooperation programs are being worked out in the field of the production of industrial consumer goods and of transportation.

The long-term special-purpose programs define the coordinated long-term cooperation strategy of the CEMA countries in various fields of material production and are a concretization and development of the Overall Program for the Socialist Economic Integration of the CEMA Member Countries.

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The basic purpose of the measures included in the long-term special-purpose programs of cooperation is to provide for the economically valid needs for energy, fuel and raw materials, foods, means of production, and technologies of an advanced technical level. The development and realization of these programs has become a new step in the development of the multi-lateral cooperation of the CEMA countries.

The realization of the long-term special-purpose programs in close coordination with the measures to coordinate the national economic plans of the CEMA countries, and also the bilateral long-term plans for production specialization and cooperation will make it possible to increase the effectiveness of collective efforts to solve key economic problems and to achieve a more efficient use of material and financial resources and of the advantages of an international socialist division of labor.

The work of the CEMA is creating favorable preconditions for the development of tendencies toward the internationalization of the economic life of the socialist states which is manifesting itself at the current stage as a law of the gradual equalization of their development. This process leads in the final result to an ever greater equalization of the basic parameters of the socio-economic development of the socialist countries, to a gradual leveling off of their economic levels, and to an increasing similarity of their national economic structures. There is a steady expansion and deepening of the international interaction of the socialist countries in all spheres of social life and a rising level of the integration of the commonwealth of sovereign socialist states as a new inter-state community formed on the principles of socialist internationalism, voluntariness, and complete equal rights.

Thus, the practice of CEMA cooperation, especially the experience of developing long-term special-purpose programs in the key sectors of the economy, shows that in a number of branches of their economies stable and essentially international production proportions are taking shape, an ever-wider joint use of resources for the attainment of coordinated common goals is being carried out, and more and more common features in their socialist way of life are appearing.

The deepening of mutual cooperation and progress in socialist economic integration has already led and, undoubtedly, will continue to lead to an increased role for planning and management, including in the systems of managing foreign economic relations in related or analogous elements, indicators, and economic levers.

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The process of the gradual coming together of economic mechanisms is the result of the same types of changes in the material and technical base and the socio-economic structures of our countries and of the increasing equalization of the levels of their social and economic development. The equalization of the levels of economic development, of the socio-class structure of society, and of the degree of concentration of social production and the increasing similarity of the immediate goals of socio-economic development (an increasing orientation of the economies toward improving the well-being of the workers and improving their working and living conditions) and of the means of achieving these goals (the necessity for a profound intensification of the entire reproduction process on the basis of a unification of the achievements of scientific and technological progress and the advantages of socialism) are objectively leading to greater similarity in the systems of economic planning and management.<sup>5</sup>

The constant development and improvement of the forms and methods of the cooperation of the CEMA countries is at the same time both the result of and the precondition for the growing international socialization of socialist production which develops during the process of the deepening of the mutual division of labor and of socialist economic integration. This manifold process at its current stage cannot be reduced to any single aspect or to some manifestation at a definite level of economic activity. It includes at least the following components:

- An acceleration of the process of the socialist socialization of production within individual national economic complexes on the basis of their fuller inclusion in the system of the international socialist division of labor;
- A strengthening of the planned relations between the national economic complexes of the individual countries and the establishment of the elements and preconditions for the development of the international socialist division of labor into international cooperation on a macro-economic level (the end result of the process of international socialist socialization through a strengthening of planned relations among the cooperating countries);
- The formation of stable and technologically anchored interrelations between definite elements of the production apparatuses of the individual countries, the realization of joint capital construction plans, and so forth (the process of the "informal" socialization in fact by means of the pooling and collective use of the resources of the interested countries for common and concretely specified goals);
- The development of the organizational forms of the collective management of production or other types of economic activity which, with definite preconditions, may turn into experimental forms (a kind of laboratory) of the direct international socialization of production (of course, taking account of their "built-in nature" into the above-named forms of "indirect" and "informal" socialization).



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The unfolding of this objective process and an awareness of it during the coordination of the economic policies of the sovereign socialist states is making it possible to draw the conclusion that the forthcoming period of socio-economic development for the CEMA countries will be characterized by an even more overall and consistent realization of the advantages of the socialist system both intra-economically and internationally. This will ensure stable socio-economic progress for the fraternal states, and, at the same time, a steady development of the process of the internationalization of their material and spiritual life and of a strengthening of the unity of the countries of the socialist commonwealth. A new stage of maturity will be reached for the international economic relations of a new type.

FOOTNOTES

1. At the present time the CEMA member countries are the People's Republic of Bulgaria, the Hungarian People's Republic, the Socialist Republic of Vietnam, the German Democratic Republic, the Republic of Cuba, the Mongolian People's Republic, the Polish People's Republic, the Socialist Republic of Romania, the Union of Soviet Socialist Republics, and the Czechoslovakian Socialist Republic.
2. L. I. Brezhnev, "Following Lenin's Path. Speeches and Articles," Vol. 5, Politizdat, 1975, pp 79-80.
3. Examining the given process in application to the foreign socialist countries the conclusion can be drawn that it has been completed at the present time (at least in its basis) in the European CEMA member countries. Their experience emphasizes the common nature of the basic directions of the formation and development of the material and technical base of socialism which became defined during the process of the construction of a developed socialist society in the USSR. At the same time, the experience of the foreign CEMA countries testifies to the broad diversity of the concrete conditions, forms, and methods of accomplishing this common task. It can be foreseen that in the future, as has already occurred in the practice of the formation and development of the material and technical base of socialism in the Mongolian People's Republic, Cuba, Vietnam, and Laos, this diversity will be expressed even more clearly.
4. "Declaration of the Heads of the Delegations of the CEMA Member Countries Connection With the Approval by the CEMA Session at its 32nd Meeting of Long-term Special-purpose Cooperation Programs," PRAVDA, 30 June 1978.
5. This similarity manifests itself both in the tasks which are formed in the national economic plans and in the establishment of the concrete forms and methods of the realization of the planning goals. In this connection, it can be stated that the economic planning and management

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systems of the CEMA countries are at the present time characterized by an expansion of the horizons of planning, a greater consideration of social factors in the development and realization of economic policy, the development of overall, program-purpose planning, the extensive use of mathematical economic methods and electronic computers in planning calculations, the creation of various kinds of associations in industry and other branches of the economy, the development of cost accounting, and so forth.

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INTERNATIONAL ECONOMIC RELATIONS

BRIEFS

MACHINERY FOR USSR--Mitsui Precision Machinery Industry has signed a 3.2 billion yen contract to export 51 machining centers, 11 boring machines [Bora], and 12 grinding machines to the USSR. The contract price will be paid in dollars and the shipment will be completed by the end of 1979. Toyota Machine Works has also signed a contract with the All-Union Automotive Industry Import Association for export of 20 grinding machines worth 320 million yen. [Tokyo NIHON KEIZAI SHINBUN in Japanese 7 Feb 79 morning edition p 7 OW]

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MANPOWER: LABOR, EDUCATION, DEMOGRAPHY

LABOR IN A DEVELOPED SOCIALIST SOCIETY

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Article by R. Ivanova, D. Kozlova: "The Nature of Labor in a Developed Socialist Society"

Text Production relations, which determine the social system, also form the socio-economic essence of labor, its nature. Socialism eliminated the system of hired labor, changed the means of uniting the means of labor and manpower, which made it possible to eliminate the antagonistic contradiction between necessary and surplus labor, to use surplus labor in the interests of the workers. The integral unity of the worker and the subject of the ownership of the means of production created the basis for the assurance of the unity of the fundamental interests of the workers. Labor freed from all forms of exploitation became the sole source of existence of both society as a whole and each of its members. V. I. Lenin wrote: "For the first time after centuries of labor for others, of forced labor for exploiters there is the possibility of /working for oneself/ in italics...."<sup>1</sup> Closely connected with this trait of the nature of socialist labor is another one--the discipline of labor. Under conditions when the worker himself is simultaneously both the subject of the ownership of the means of production and their co-owner, the discipline of labor is the indicator of the new, conscious attitude toward it, toward the use of all the components of the process of labor, toward the development of the labor and social activeness of the workers.

Labor under socialism is the criterion of the participation of a person in social production, the criterion of distribution and consumption. The greater the productivity and efficiency of national labor are, the greater are the possibilities of the increase of the level of well-being of both society as a whole and each of its members. The antagonism, which was inherent in preceding formations, between the various types of labor:

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1. V. I. Lenin, "Polnoye sobraniye sochineniy" Complete Collection of Works, Vol 35, p 196.

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physical and mental, industrial and agricultural, simple and complicated, was eliminated under socialism.

The reality of the right of each citizen to work is recorded in the new USSR Constitution and is secured by the socialist economic system, the steady increase of the productive forces, free education, the development of a system of vocational guidance and job placement. In this lies the fundamental difference of the questions about the right to work and its real guarantee in the Soviet Constitution and the constitutions of bourgeois states. Under socialism not only is practically all the able-bodied population involved in the labor process and is truly full employment achieved, but enormous opportunities for the expansion of the spheres of the use of labor in physical production and in the nonproductive sphere are afforded in connection with rapid socio-economic development. Thus, the number of those employed in the national economy of our country increased from 62.9 million in 1940 to 121 million in 1977. During the years of the Ninth Five-Year Plan alone the number of those employed increased by 8.3 million. In the developed capitalist countries the number of those unemployed is increasing: in the United States from 4.1 million in 1970 to 7.8 million in 1975, in the capitalist countries of Western Europe from 2.6 million to 5.2 million. According to the official data of the American Government, in the next five years another 7.8 million people will be without work as a result of the introduction of automation equipment. In 1977 in the developed capitalist countries there were 15.9 million officially registered unemployed people. Socialism is a society which for the first time in the history of mankind solved the problem of universal employment both on the social plane--for it attracted all classes and strata of the population to socially useful labor, and on the personal plane--within each class, social group and stratum practically all the able-bodied citizens are employed. An essential feature of the nature of socialist labor is its universality.

The socialist cooperation of labor on the basis of the public ownership of the means of production made it possible to establish a direct tie between all the subdivisions and links of the unified national economic complex which was organized according to plan, which made labor directly national. The planned nature in the management of the economy is an enormous advantage of socialism as compared with the capitalist economy, for it makes it possible to avoid those colossal losses of living and embodied labor, which inevitably accompany capitalism. A graphic example is the economic crisis of 1974-1975, the consequences of which are being felt very acutely by the developed capitalist countries. Thus, the considerable underloading of production capacities in the materials-intensive and power-intensive sectors of Japanese industry led to the demolition of 20 of the 59 blast furnaces belonging to the 5 largest metallurgical companies, 20-30 percent of the capacities were eliminated in a number of other sectors as well.

In socialist society the inequality in distribution and consumption is reduced on the basis of economic growth and the increase of the general educational and skills level of the workers. However, the socio-economic

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differences between mental and physical, industrial and agricultural labor, differences in the conditions, difficulty and danger of labor, the degree of its mechanization and intensity still remain. This requires the measuring and precise standardization of labor, which is carried out at the present stage not only directly in units of working time, about also in value form, and at the same time predetermines certain differences in pay, the general educational level and the vocational training of workers. Labor under socialism is not yet communist labor in the strict sense of the term, for its obligatoriness and material interest are specifics of socialist labor. "...A duty and matter of honor of each USSR citizen capable of labor is conscientious labor in the field chosen by him..." This specific trait is governed by the fact that labor has not yet become the first vital need of all citizens of socialist society.

Whereas the nature of labor is its socio-economic essence within the entire society, as applied to each specific type of labor (sector, enterprise, occupation or specialty) the nature of labor is manifested in its content. The content of labor is closely connected with the technical and economic aspect of labor and changes at a more intensive rate. The nature and content of labor reveal the qualitative and quantitative certainties of the labor of a given mode of production.

The period of developed socialism is the most important stage of the building of a socialist society, of which the change of the conditions, content and nature of labor is one of the essential tasks, which affords the opportunity for the use of the capabilities and the development of the personality of workers in the process of labor activity.

The change of the content and nature of labor under the conditions of a developed socialist economy involves above all structural changes in social production, which occur under the influence of technical progress. Tens of new sectors, which promote technical progress, have appeared in recent decades. Whereas in 1918 statistics took into account about 20 sectors of industry, at present there are more than 140 major sectors and 500 types of works.

The shift of the economy to the intensive path of development is affording great opportunities for the emergence of new sectors both in the sphere of physical production and in the nonproductive sphere. The accomplishment of the complete mechanization and automation of production and the accelerated updating of equipment are intensifying the process of the release of manpower not only from agriculture, but also from other sectors of physical production, which is making it possible to utilize more efficiently the living labor of workers both in the sectors of physical production and in the nonproductive sphere.

A complicated structure of social production, which predetermines the set of spheres of the use of national labor and the occupational features of manpower, is typical of the socialist economy at the present stage. The

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structure of the individual sectors and production links has become complicated, many new occupations have emerged. In industry alone at present there are more than 40,000 occupations and specialties. The labor of the aggregate worker has become more diverse and complicated and embraces those sectors of production and processes, which did not exist at previous stages of the development of the economy of the country. More extensive opportunities are thereby being created for the choice of occupations in conformity with the interests and inclinations of the workers. At the same time scientific and technical progress is making more rigid demands on the psychological capabilities of man in the choice of specific occupations. Sociological research has determined that a significant number of adolescents cannot master the initially chosen occupations. There are added to the expenditures of society on the training of this contingent of workers the expenditures on their retraining. This prolongs the process of the social adaptation of a portion of the young people and gives rise to discontent with labor, and at times a negative attitude toward it.

The creation of a unified statewide system of vocational guidance and the choice of a vocation would make it possible to solve many questions which are connected with the determination of the current and prospective demand for personnel in a breakdown by sectors and regions, occupations and skills, with informing the population about the demands of the national economy for workers of specific occupations, with the use of the means of mass communications (movies, radio, television) for the promotion and increase of the prestige of a number of necessary occupations, with the development of work on vocational guidance at general educational schools and among the population, the choice of occupations at vocational and technical schools, secondary and higher specialized educational institutions, at enterprises and others.

Another typical feature of national labor is the considerable increase of the level of its mechanization. The data on the power-worker ratio, which increased from 1940 through 1977 in industry 6.6-fold and in agriculture 13.2-fold, are an important indicator of this process. The mechanization of production processes entails an increase of the number of workers of mechanized labor. From 1959 through 1977 alone, with a 1.5-fold increase of the total number of workers, the number of workers performing work with the aid of machines and mechanisms, as well as on monitoring the operation of automatic machines and automated units, increased 2.3-fold, while the number of skilled workers engaged in the repair and adjustment of machine and mechanisms increased 2.5-fold. At the present stage the material, scientific and technical conditions are being created for the solution of the problem of the maximum decrease of unskilled and semiskilled (above all difficult) manual labor. In the USSR Constitution it is noted: "The state is taking care of the improvement of working conditions and labor safety..., the decrease, and subsequently the complete displacement of difficult physical labor on the basis of the complete mechanization and automation of production processes in all the sectors of the national economy" (Article 21).

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During the Ninth Five-Year Plan an extensive program of the complete mechanization of labor-intensive jobs and the automation of production was implemented. The work on the reequipment of the national economy is being continued during the 10th Five-Year Plan. The production of the implements of labor will be increased 1.6-fold during the current five-year plan, the output of instruments and automation equipment 1.6- to 1.7-fold. The assimilation of the industrial production of the means and complete systems of the automation of the control of technological processes in the metallurgical, chemical, petroleum refining, petroleum, gas, coal and other sectors of industry is continuing. The development of systems of machines, which are designed for the complete reequipment of the mining, coal, timber and wood processing industries, construction and a number of other sectors, will be completed and they will be put into production. Special assignments on the production of equipment, which sharply reduces manual labor and ensures the increase of its productivity, are envisaged. The output of means of the mechanization of labor-intensive and difficult construction, materials handling, loading and unloading and warehouse jobs will increase approximately 2-fold.

The decree of the CC CPSU and the USSR Council of Ministers "On the Further Development of Machine Building in 1978-1980" stipulates specific assignments for the machine building ministries: on the placement into production of machines, equipment, instruments and automation equipment with a productivity not less than 1.5-2 times greater as compared with the 1975 level for the purposes of expediting the work on the accomplishment of the complete mechanization and automation of production processes in all the sectors of the national economy; the increase of the degree of mechanization of labor and the considerable decrease during the current five-year plan of the number of workers engaged in manual labor; the elaboration and implementation of measures on the further decrease during 1981-1985 of the use of manual labor at machine building enterprises; the acceleration of the construction and placement into operation of capacities for the production of means of mechanization, materials handling, loading and unloading and warehouse operations and others.

By March 1979 the machine building ministries should submit proposals on the development of the sectors of machine building in 1981-1985 and for the future up to 1990.

As the complete mechanization and automation of production are accomplished, the functions connected with direct influence on the object of labor are being shifted to a greater and greater extent to machines and mechanisms. At the same time complicated functions, which are conditioned by the greater expenditures of mental energy (calculation, monitoring, control, the maintenance of machines and mechanism, the monitoring of their operation), are assuming primary importance. As the shift of sectors to complete mechanization is completed, these functions begin to play the main role in the content of the labor of workers. The labor of a worker, in which the functions of both physical and mental labor are integrally combined, is becoming



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typical. The change of the functional content of labor in physical production reflects the process of the increase of its complexity, which requires an increase of the level of skills of the workers.

The content of the labor of production managers and specialists is changing and its complexity is increasing. The demands on the special engineering technical knowledge of the workers engaged in the field of the economics and organization of production are increasing sharply. Sociopsychological functions, which require a knowledge of such sciences as pedagogy, social psychology, sociology and others, are assuming greater and greater importance in the work of managers and specialists. The technical functions of the given group of workers are being decreased on the basis of the mechanization of administrative labor, the introduction of computers, the centralization of accounting and the storage of information. Substantial changes are also occurring in the labor of workers engaged in the nonproductive sphere. In the sectors directly serving the population (trade, public dining, consumer services), the content of labor is changing in connection with the more extensive use of advanced forms of service, preliminary orders, service by traveling brigades, mail-order trade and so on. On the basis of the increase of the level of technical equipment the functions of service are being replaced to a greater and greater extent by the functions of accounting, the study of demand, the selection of the most feasible methods of meeting it. The material and technical prerequisites are being created for the considerable decrease in this sphere of manual, inefficient labor.

The process of the intellectualization of labor, which finds expression in: the increase of the importance and proportion of mental labor in the total amount of aggregate labor of society, the acceleration of the process of the intellectualization of physical labor in connection with the change of its content, is accelerated as the structure of national labor becomes complicated and the achievements of the scientific and technical revolution are introduced. The proportion of the people engaged primarily in mental labor in the national economy increased from 19.3 percent in 1959 to 27 percent in 1970. In 1977 the number of those engaged primarily in mental labor was 37.5 million, having increased as compared with 1970 by 6 million.

The increase of the importance of mental labor in the total amount of the aggregate labor of society is characteristic of the present stage of the socialist economy. A developed socialist society is characterized by a high degree of industrialization of production. The increasing diversity of the sectors of production means the implementation in practice of the achievements of various sectors of science, each of which has its own center, scientific research institutes, planning and design institutes, experimental works and so forth. From 1950 through 1977 alone the number of scientists employed in the national economy increased 7.9-fold. Under the conditions of the high technical level of production the material conditions are being created for developing the sectors of the nonproductive sphere, especially those which predetermine the solution of the most important social problems-- in the area of public health, education, culture and so on, where the

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performance of mental functions is the main content of labor. The proportion of those employed in the nonproductive sectors increased from 13.8 percent in 1950 to 25.1 percent in 1977, including from 7.7 to 16.5 percent correspondingly in public health, social security, education, culture, art and so on.

The high level of development of physical production and the nonproductive sectors requires the training of the appropriate labor force of highly skilled specialists. During the period from 1950 through 1977 alone the number of specialists with a higher and secondary specialized education increased 7.6-fold with an increase of the total number of those employed in the national economy by nearly 2-fold.

The increase of the complexity of labor gives rise to the need and creates immeasurably more conditions for the development of the personality of the workers both from the point of view of the very content of labor and from the point of view of the physical possibilities of society for the solution of the problem of increasing the general educational and cultural level of the workers. The new USSR Constitution proclaimed: "In conformity with the communist ideal 'The free development of each is the condition of the free development of all,' the state sets as its goal the increase of the real opportunities for the application by citizens of their creative powers, capabilities and talents, for the comprehensive development of the individual."

Under the conditions of developed socialism, with the achievement of the maximum universality of labor the scientific solution of the questions connected with the general educational and occupational training of personnel, which are acquiring more and more importance as one of the most important functions of the socialist state, is becoming objectively necessary. "In the USSR there exists and is being improved a uniform system of popular education," it is noted in the new USSR Constitution (Article 25), "which ensures the general educational and vocational training of citizens, serves communist education, the spiritual and physical development of young people, prepares them for labor and social activity."

The aggregate labor force under the conditions of a developed economy is characterized by a higher and higher general educational and vocational level. In 1939 per 1,000 people employed in the national economy 123 had a higher and secondary (complete and incomplete) education, in 1959--433, in 1970--653, in 1977--780. At present the training of a skilled labor force of workers, who have an 8-10 year education, is a central national economic problem. The introduction in the country of a universal secondary education, the organization of a vast network of vocational and technical schools which give a secondary education, the further development and improvement of higher and secondary specialized education are creating the necessary conditions for the even greater increase of the general educational level and vocational skills of the workers. The increase of the general educational level and the receipt of the appropriate vocational

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training by workers are ensured by the increased material resources of society, their purposeful use and the high skills level of the labor force. "...In order to be cultured, a certain development of the physical means of production is necessary, a certain material base is necessary."<sup>2</sup>

The right of citizens to the choice of an occupation, the type of work, a job in conformity with their calling, abilities, the possibility for the improvement of skills and the learning of new occupations is realistically ensured by the establishment for workers and employees of a work week which does not exceed 41 hours, a shortened work day for a number of occupations and workers, the granting annually of paid vacations, days of weekly rest, the availability of a system of free education and vocational training.

At the stage of developed socialism the conditions are created for the process of harmonization between the opportunities afforded workers from the point of view of the choice of the type of labor and its content, and their inclinations, abilities, desires and interests. This process is governed both by the acceleration of scientific and technical progress, the change of the content of labor on this basis, and by the development of the entire system of social relations. In particular, universal secondary education means the equalization of the general educational level of young people who are beginning their labor activity. The solution of the problem of reducing unskilled and semiskilled labor to a minimum, the change of the content of labor and the increase of its creative nature are creating immeasurable greater opportunities for the realization of the abilities of the workers in the labor process itself, the formation of a creative attitude toward labor. The possibilities of creativity in labor are also being realized as a result of the development of the movement of rationalizers and inventors, the number of whom in 1977 was 4,466,000, while the amount of the saving from the introduction of inventions and rationalization proposals was 5,296,000,000 rubles. Thus, qualitative changes in the main productive force of society--man--also correspond to the reequipment of labor.

The development of the productive forces, which caused an intensification of the division of labor, at the same time is increasing the cooperative nature of labor, which is manifested in the formation of the socially uniform aggregate worker. At the stage of developed socialism, in connection with the intensive processes of socialization of production and labor, the socio-economic unity of the aggregate worker is obtaining the appropriate material and technical base. The occupational structure of labor at this stage has not only a sectorial, but also a social aspect. The first feature, which it is necessary to take into account in the formation of the occupational and sectorial structure of labor for the future, is the gradual weakening of the influence of the social factor, which is caused by the conservation of the socio-economic differences in labor.

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2. V. I. Lenin, "Polnoye sobraniye sochineniy," Vol 45, p 377.

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The shortcomings of the occupational and sectorial structure of labor at the stage of developed socialism to a considerable extent are caused by the fact that its formation during preceding periods was accomplished mainly at the level of the primary economic link. The training of the bulk of the workers directly at enterprises was opposed to the planned training of a labor force of specialists of the intermediate and highest links. This led to the inequality of the training of workers for individual occupations, to considerable differences in the level of their theoretical knowledge and practical skills and, consequently, in the skills of workers of the same occupation, in the standards of labor and its remuneration not only in different sectors of the national economy, but also within a single sector. To a certain extent the primary training of workers at the level of the primary economic link was caused by the great number of occupations in different sectors of the national economy, which differ little from each other in their content. The standardization of the occupations of workers made it possible instead of 23,000 names of occupations to leave in the new Unified Job and Wage Rates Classification Manual only 6,500.

The second feature of the improvement of the occupational and sectorial structure of labor at the present stage is the regulation of its formation. The solution of this problem is connected with the policy of our party of increasing the efficiency of social production, with the increase of labor productivity, the release of a portion of the workers at operating enterprises and the sending of them to other sections of production, the orientation in the training of the work force on specialized secondary educational institutions.

The acceleration of the rate of scientific and technical progress is the most important and quick-acting factor of the change of the occupational and sectorial structure of labor. This is the third feature of its improvement. In industry a number of new occupations are appearing under the influence of this factor and at the same time hundreds of obsolete occupations are ceasing to exist. Thus, such new occupations as fitter for the assembly of metal constructions, operator of automatic and semi-automatic lines, of machine tools with program control, vacuum furnace steel worker and others, are undergoing extensive development. The occupations of loaders of bore pits, manual granulators, ore dumpers, sandblasters have disappeared. The number of occupations of skilled labor, which require knowledge on the level of the tekhnikum (for example, instrument technician, X-ray technician, plasma equipment operator and others), is increasing. The increase of the material well-being and the comprehensive development of the individual require the increase of the proportion of national labor in the nonproductive sphere, which affects the development of its sectorial structure and the change of the occupational composition of those employed. The redistribution of labor in favor of the nonproductive sphere as the level of productivity of national labor in the national economy increases is another feature of the changes of the occupational and sectorial structure of labor at the stage of developed socialism.

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The completion of the process of forming production associations in industry during the 10th Five-Year Plan, the creation of agro-industrial enterprises and associations and the formation of territorial and sectorial complexes will promote the improvement of the occupational and sectorial structure of labor at a higher level of the socialization of production.

The structure of labor, which is becoming more complicated, and the greater demands on the intellectual level and psychophysiological attributes of workers under the conditions of the scientific and technical revolution are giving rise to the need for the creation of a statewide system of vocational guidance and the choice of an occupation, the functional purpose of which is the achievement of a rational correspondence between the demands of the national economy for workers of specific occupations and skills and the training and distribution of the labor force with the most complete consideration of their physiological capabilities, inclinations and abilities. At the stage of developed socialism the economic potential of the country makes it possible to solve major national economic tasks in the area of the improvement of working conditions. These tasks are becoming an objective necessity, which stems from the more complete realization of the effect of the main economic law. The increasing degree of the socialization of production is making it possible to enlarge substantially the boundaries which are covered by statewide policy in the area of the improvement of working conditions and labor safety. The scientific and technical revolution is creating the prerequisites for a radical change of technological processes. The introduction of automatic remote control, the smokeless loading of coke ovens, electrohydraulic and water jet cleaning ensures the radical improvement of working conditions. At the same time the increase of the technical level of production and of its efficiency under present conditions involves an increase of the capacity and speed of equipment, the replacement of traditional technological principles with electrophysical, electrochemical and ultrasonic principles, the increase of the temperature and pressure of the working mediums, the speeds of the flows of substances, the introduction of new flammable oxidizing agents and construction materials, the increase of the use of radioactive substances, lasers and so on. The gaps in the plans for the section of labor safety when developing gigantic production complexes are leading to undesirable consequences. This raises in a new way the questions of labor safety and labor safety techniques and requires the redoubling of the attention toward these questions. The provision of normal and safe working conditions, of the maximum production comfort is becoming an essential factor of the increase of labor productivity and the output-capital ratio, that is, the increase of the efficiency of social production. The increased economic potential of the country is creating the material prerequisites for the solution of the major national economic problems of the radical amelioration and improvement of working conditions. In our country the necessary technical level of the elaboration of these problems has been provided, a vast network of scientific research institutes, which elaborate special questions of labor safety and labor safety techniques, has been set up. Annually the state expenditures on the improvement of working conditions and labor safety, on the

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provision of workers with special work clothing and shoes and other means of individual protection are more than 3 billion rubles.

Taking into account the increased importance of working conditions as a factor of the increase of production efficiency, the 25th CPSU Congress outlined the task of continuing this work during the 10th Five-Year Plan, of creating more favorable conditions for highly productive labor and the extensive use of the creative abilities of the workers.

The AUCCTU and the USSR State Committee for Science and Technology approved an extensive program of work on the solution of the scientific and technical problems of labor safety, which provides for the elaboration and introduction of methods and means, which ensure the decrease of injuries and occupational diseases and the improvement of the sanitary and health conditions of labor.

The main direction of the improvement of working conditions is the comprehensive consideration of the sanitary, physiological, psychological and esthetic requirements when planning new and modernizing old enterprises. The elaboration of the criteria of the evaluation of the social and economic efficiency of new equipment from the point of view of the improvement of working conditions is becoming one of the most important tasks. In the new USSR Constitution it is written: "The state is taking care of the improvement of working conditions and labor safety, its scientific organization, the decrease, and subsequently the complete displacement of difficult physical labor on the basis of the complete mechanization and automation of production processes in all the sectors of the national economy" (Article 21). The changes of the conditions and content of labor serve as the material basis for overcoming the socio-economic differences in labor. The differences between workers of mental and physical labor, which are caused by the insufficient level of development of physical production on the part of both its physical-material and subjective factors, are the most profound differences, which are connected with the retention of the survivals of the attachment of a person to one type of activity. The surmounting of them is a complicated, lengthy process which in terms of time will take up the entire period of the building of the communist society. V. I. Lenin wrote that the intelligentsia will remain a special social stratum henceforth until the achievement of the highest degree of development of the communist society.<sup>3</sup> The realization of the main directions of technical progress in the foreseeable future--complete mechanization and automation--is gradually changing the place and role of the workers of physical labor in the system of social production. Much attention is being devoted to the increase of the general educational level of working young people. Vocational and technical schools, which train skilled workers in the most complicated occupations and at the same time give a secondary education, are

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3. See V. I. Lenin, "Polnoye sobraniye sochineniy," Vol 44, p 351.

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undergoing extensive development. The development of the network of general educational schools, the free nature and broad accessibility of education are the basis of the considerable increase of the educational level of the workers of physical labor. The gap in the level of education of the population by social groups has been reduced. In 1939 per 1,000 people of the corresponding groups there had a higher and secondary education: workers--84, kolkhoz farmers--18, specialists and employees--542, in 1977 respectively 732, 562 and 972. In the future the differences between them will concern mainly the correlation between the level of secondary and higher education. The gap between the level of income is gradually being reduced on the basis of the increase of the level of skills of the workers of physical labor and the improvement of the system of distributive relations. The overall increase of the standard of living of the workers, which along with the extensive development of the network of general educational and cultural institutions is a necessary condition of overcoming the differences in the consumption of cultural wealth, is of great importance in eliminating the socio-economic differences between workers of mental and physical labor. Article 46 of the USSR Constitution states: "USSR citizens have the right to use the achievements of culture. This right is guaranteed by the general accessibility of the values of domestic and world culture, which are in state and public foundations; the development and uniform location of cultural and educational institutions on the territory of the country; the development of television and radio, the book publishing business and the periodic press, the network of free libraries; the expansion of the cultural exchange with foreign states."

The building of a mature socialist society was accompanied by socio-economic transformations in agriculture, which were aimed at its transformation into an industrial sector of production and at the overcoming on this basis of the substantial differences between industrial and agricultural labor. None the less the level of development of the productive forces, the degree of maturity of socialist production relations and so on are still inadequate in agriculture. The capital-labor ratio and the power-worker ratio, the degree of the division of labor, the level of the skills of workers are lower in agriculture.

The kolkhoz form of ownership gives the differences between agricultural and industrial labor the nature of class nonantagonistic differences. This is manifested in the fact that the reproduction process in the kolkhoz sector is accomplished mainly by means of the assets of the kolkhozes themselves. Kolkhoz ownership sets definite limits to the redistribution of material and labor resources. The pay of kolkhoz farmers and its level depend on the level of the income of the individual kolkhozes, although at the present stage the state guarantees the provision of the necessary minimum pay by means of granting credits. At state enterprises the amounts of the stimulation funds are regulated by uniform norms, within kolkhoz ownership there is not such uniformity, therefore there are substantial differences in the supplementary pay. In 1977 the average monthly wage of sovkhoses workers was 80.1 percent of the level of the wage of industrial

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workers, while the average monthly pay of kolkhoz farmers was 61.3 percent of that level. With allowance for the private subsidiary farm, to which 26.3 percent of the budget of the family of the kolkhoz farmer falls, the differences in the level of income are less significant than the differences in the level of pay.

The industrialization of agriculture serves as the material basis for surmounting the socio-economic differences between agricultural and industrial labor. Much was done in this area during the Ninth Five-Year Plan. During the 10th Five-Year Plan the capital investments in agriculture are planned in the amount of 171.7 billion rubles. Important measures on the further development of the agro-industrial complex are being implemented. Interfarm cooperation and agro-industrial integration underwent extensive development during the industrialization of agriculture. As a result of the development of these processes the framework of the group ownership of individual kolkhozes will be overcome. Interfarm cooperation is, in particular, an important form of the integral convergence of kolkhoz ownership with state ownership. In the new USSR Constitution it is noted: "The state is promoting the increase of the social uniformity of society--the obliteration of class differences, the substantial differences between the city and the countryside."

The effect of the main economic law, which predetermines the need for the change of the nature and content of labor, the improvement of its conditions and the decrease of the duration of the working time, is creating the possibility for the development of the personality of the workers in the process of labor activity, and on the whole the increase of the attractiveness of national labor. Attractive labor is, as Marx expressed it, labor which is the self-realization of the individual, that is, labor which enables a person to realize his creative abilities, and at the same time an activity, in the process of which a person develops and improves these abilities.<sup>4</sup> V. I. Lenin indicated that socialism opens for workers the way to creative labor, they will be able "to show their worth, to develop their abilities, reveal their talents, which in the people is an untapped spring...",<sup>5</sup> connecting this not only with material and technical, but, what is the main thing, with socio-economic conditions. The question of a new attitude toward labor, Lenin said, "could/ *in italics* be raised in practice only after the gaining of political power by the proletariat, only after the expropriation of the landowners and capitalists, only after the decisive victory of the proletariat which has won state power...."<sup>6</sup>

The data of sociological research attest that the aspiration to engage in creative labor, to work for the good of all of society is becoming to a

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4. See K. Marx and F. Engels, "Soch." *Works*, Vol 46, Part II, p 110.

5. V. I. Lenin, "Polnoye sobraniye sochineniy," Vol 35, p 195.

6. V. I. Lenin, "Polnoye sobraniye sochineniy," Vol 40, p 314.



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greater and greater extent the most important stimulus of the participation of the broad masses of the workers in social production at the present stage.<sup>7</sup>

The formation of the demand for creative labor for the good of all of society as one of the most important spiritual demands of the individual under the conditions of developed socialism is evidence of the increased level of intellectual development of the broad masses of workers, the increase of their social self-consciousness. The high general educational and occupational level is increasing the interest of the workers in scientific and technical creativity, is promoting the further improvement of production. The creative nature of labor and its social significance are influencing the formation of the attitude toward labor as a vital need.

One of the typical features of a developed socialist society is the further increase of the social activeness of the workers, the main forms of which are the participation of the workers in the management of production and the extensive scope of socialist competition. Public socialist ownership of the means of production objectively governs the fulfillment by each member of society of specific functions on the management of production. The participation of the workers in the management of production, on the one hand, substantially increases their responsibility for the fulfillment of the national economic plans (which involves the tightening up of labor discipline) and, on the other, requires (owing to the increase of responsibility) the considerable increase of their rights, the granting of greater independence and the display of initiative in the organization of the fulfillment of the assignments of the national economic plan.

The increase of the participation of the workers in the management of production at the present stage is objectively governed by the changes both in production itself (the enrichment of the content of labor) and in the aggregate labor force. The level of the general and vocational education of the bulk of the workers has increased substantially, the proportion of engineering and technical personnel has become significant, various forms and methods of involving the workers in the management of production have been developed by many years of practical work.

Socialist competition is the most massive and effective form of participation of the workers in the management of production. It is capable of involving nearly all the competitors in participation in the management of production. At the 25th CPSU Congress it was noted that mass socialist competition has become an effective method of influence of the working class, the kolkhoz peasantry and the intelligentsia on all aspects of

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7. In the past 15 years alone tens of new creative organizations and associations of workers have emerged: permanent production conferences, scientific and technical societies, societies of rationalizers and inventors, public design and economic bureaus, councils of specialists, leading workers and innovators, personnel divisions on a public basis and so on.

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economic activity. At present more than 90 million people are taking part in socialist competition, including more than 50 million in the movement for a communist attitude toward labor. The competition participants, by assuming obligations, are revealing reserves of the increase of labor productivity, the economy of material resources, the organization of labor, are promoting the drafting of more stepped-up plans and the increase of the efficiency of social production. The extensive dissemination of various forms of the participation of the workers in management confirms the objective dependence of this process. It is typical that at present there is being revealed a shift from the fulfillment of the tasks of promoting the development of production, which previously faced various public organizations, to the direct exercise by them of a number of functions of management. Generalizing what has been achieved, the new USSR Constitution in Article 8 recorded the increased role of labor collectives in the solution of state and production problems. The main direction of the development of the political system of Soviet society--the further development of socialist democracy--is promoting further changes in the nature of socialist labor on the path of its development into communist labor.

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TRANSPORTATION

I. G. PAVLOVSKIY, MINISTER OF RAILWAYS, VIEWS RAIL TRANSPORT

Moscow ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA in Russian No 1, Jan 79 pp 2-7

[Article by Hero of Socialist Labor I. G. Pavlovskiy, USSR Minister of Railways: "Raise the Level of Transport Operations"]

[Text] Under present conditions transport is, according to the concise expression of Comrade L. I. Brezhnev, general secretary of the CC CPSU and chairman of the Presidium of the USSR Supreme Soviet, one of the decisive sectors in the campaign for efficiency and quality in our national economy. As for the role of railways, the volume of transport operations is sufficient to provide a full description of their role: we perform almost three-quarters of the country's domestic freight turnover and nearly 40 percent of all passenger hauls.

A leading place belongs to employees of the locomotive and power services and of plants making repairs on the rolling stock and producing spare parts in accomplishing the main tasks connected with the further development and raising the level of the operational activity of rail transport. These problems, which were brought to the forefront in the decisions of the 25th CPSU Congress, the decrees of the subsequent plenums of the CC CPSU, the decree of the CC CPSU and USSR Council of Ministers: "On Measures to Develop Rail Transport for 1976-1980," and other documents of directive organs, are well known, understood and close to us. The aforementioned documents are regarded by all railway workers as a continuing display of the immense concern of the Communist Party and Soviet government for the country's main steel highways and the toilers on them.

Basic Results

Three years of the 10th Five-Year Plan, which were three years of persistent and purposeful work by all Soviet people, have passed. This was deeply and comprehensively illustrated in the speech by Comrade L. I. Brezhnev at the November (1978) Plenum of the CPSU Central Committee.

Our economic achievements find general reflection in such a comprehensive national economic indicator as national income. In 1978 it increased by 4 percent

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or nearly 16 billion rubles over 1977, while it increased by 48 billion rubles for the three years of the five-year plan. In connection with this, three-quarters of it has been channeled into increasing the public welfare.

Productive capital in the national economy has been substantially expanded and replaced during the years of the 10th Five-Year Plan. It has grown by 195 billion rubles and by the end of 1978 had reached one trillion rubles. More than 700 major industrial enterprises were built.

Industry is developing dynamically. During the past three years output worth 450 billion rubles more than that of the first three years of the Ninth Five-Year Plan has been produced. A feature that is new in principle has been the creation and development of a series of territorial-production complexes, first and foremost, in the country's East.

The Party's course of improving the material and technical base of agriculture is being purposefully implemented. Last year 235 million tons of grain were gathered, which constituted the greatest harvest in the history of our country. Unabated attention is being paid to improving housing conditions for workers. Since the beginning of the five-year plan, nearly 6.5 million new well arranged and managed apartments have been put into operation. Successes in other sectors of the national economy have also been considerable.

There are also certain achievements in rail transport. Under difficult conditions Soviet railway workers achieved a volume of transport operations, the likes of which had not been known in the history of domestic transport. Freight turnover on railways in 1978 increased by 24 percent over the third year of the previous five-year plan, the dispatch of freight grew by 350 million tons and the departure of passengers by 250 million individuals. Now more than 10 million tons of various types of freight are dispatched and almost 11 million passengers set out daily. All the same, as was noted at the November (1978) Plenum of the CC CPSU, railways still do not satisfy the requirements of the national economy and population for transport.

During the period of the five-year plan which has already transpired, 1,700 km of new railways, on the whole in the eastern regions of the country, were built, 1,860 of second (double) tracks were put into operation, stretches with a length totaling 2,000 km were electrified, and 9,200 km of lines were equipped with automatic block system and centralized traffic control installations. Traffic carrying capacity was increased by a length of 18,000 km on the testing ground [poligon?]. Industry supplied the railroads with 1,350 electric locomotives, 1,800 main-line diesel locomotives, 225,000 freight and 9,000 passenger cars.

If you're talking of the development of locomotive services, then one must take note, to begin with, of the acceleration in the rate of its technical renovation and of introduction of new technology. During the three years of the five-year plan, nearly 200 objects were newly built and modernized, on which more than 100 million rubles were spent. Work is now underway on 300 more objects. In addition, a series of prefabricated buildings for technical service

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points for light metal design locomotives is being installed, which will enable one to raise substantially the quality of work and to improve working conditions. More than 1,100 flow (transfer) lines and more than 1,200 mechanized sections and points are operating at depots.

The collectives of many railroads and enterprises are marching in the forefront of competition for achievement of high production indicators and ahead-of-schedule fulfillment of assignments for the five-year plan. The following can serve as an example: the Belorusskaya [Belorussian], Odesso-Kishinëvskaya [Odessa-Kishinëv] and Moskovskaya [Moscow] Railroads, the collectives of the Sol'vychevodsk, Zhmerinka, Moscow-Sortirovochnaya [Marshaling], Rybnoye, Uzlovaya, Kiev-Passazhirskiy [Passenger], Kurgan, Moskovka, Inskaya, Georgiu-Dezh [Gheorgiu Dej], imeni Ilich and Petrozavodsk locomotive depots, as well as the Tuapse, Penza, Georgiu-Dezh, Perm', and Moskovsko-Paveletskiy electric power supply sections, the Daugavpils, Moscow and Smelyanskiy plants and others. One must note that 52 depots have been awarded the honorary title of "Enterprise of Communist Labor," while the movement for a Communist attitude toward labor was itself born, as everyone knows, at the Moscow-Sortirovochnaya depot—the homeland of the "Great Initiative." Collectives at six depots have been honored with high government decorations.

What then distinguishes these leading collectives now? To begin with, scientific organization of labor, the introduction of flow (transfer) lines and mechanization, strict industrial and labor discipline and a high sense of conscientiousness.

Let's take, for instance, the collective of the Sol'vychevodsk depot, which was favored with a greeting from Comrade L. I. Brezhnev.

Shops have been modernized here and 12 flow (transfer) lines and 14 mechanized points have been organized here, i.e., practically all the basic operations have been transferred to flow systems. A great impact is being provided by the network schedule and the new technology for repairing diesels. The qualifications of workers in the basic trades have been substantially raised.

As a result, the collective at the depot is achieving high indicators in the operation, repair, technical maintenance and efficient utilization of locomotives. The layover of diesel locomotives has been reduced for all types of repairs, while it has been reduced to 2.5 days for the TR-3, i.e., it is more than two times lower than the average network-wide norm. The average daily run of the diesel locomotives exceeds 700 km.

An efficient system for quality control in repairing electric locomotives is employed at the Rybnoye depot on the Moskovskaya RR, which enables one to check the work of each fitter-repairman and to obtain a steady reduction in the number of breakdowns of locomotive equipment.

The collectives at many depots are continually reducing the proportionate expenditure of fuel and power resources. The leading Sol'vychevodsk and Kupyansk depots, where practically all the locomotive brigades fulfill the established

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norms for the expenditure of power resources, can serve as an example. One can also include the depots at Barabinsk, Yaroslavl'-Glavnyy [Main], Dema, Poltava, Chusovskaya, Zlatoust, Rtishchevo, Chernigov and elsewhere among the pacemakers. In all, since the beginning of the five-year plan, 1,100,000,000 kwt/hr of electric power and 144,000 tons of standard diesel fuel were saved on traction for the trains.

The reduction in a further expenditure of power resources is the duty of each locomotive brigade, which, to a large extent, depends on skill in running trains as well as on the ability of dispatchers to organize unobstructed train traffic and on the tracks, cars, etc. being in good working order. One must compete against engineers V. P. Orlov (Barabinsk), V. A. Fomichev (Oktyabr'sk), Yu. V. Korotkov (Shar'ya), K. D. Magdenko (Poltava), and others in the competition for thrifty expenditure of fuel and electric power.

Under conditions characterized by growing shipments and a shortfall of production capacities, the least infraction of the rules for operation and repair of locomotives and electric power supply installations can lead to serious complications in operations work. Hence, we are speaking today of the need for every kind of increase in qualifications, responsibility and businesslike efficiency in your work, comrade locomotive engineers. The level of qualifications of locomotive brigades had grown in the network as a whole in 1978. When compared with 1970: the number of top-grade operators had increased from 47.7 to 56.6 percent, while the number of assistant operators who had obtained a license to operate a locomotive had grown from 12.1 to 23.4 percent. And in this work no small amount of credit should go, first and foremost, to operator-instructors, operator-tutors, as well as to the mass-circulation journal ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA and to employees of the "Transport" Publishing House.

A most treasured possession of any enterprise are the pacemakers of production, who are distinguished by irreproachable fulfillment of duties to the Party and Homeland. High-quality labor is a matter of their honor and conscience and an object of their pride. One can name the following among them: Heroes of Socialist Labor S. Ye. Yatskov (Depot imeni Ilich) and V. F. Sokolov (Moscow-Sortirovochnaya), operators; G. F. Fatin (Saratov II), fitters' brigade leader; Order of Lenin recipients N. I. Porkhun (Kazatin), N. I. Vygovskiy (Korosten') and V. K. Yegorov (Zlatoust), operators; Third Degree Order of Labor Glory recipient V. P. Mironenko (Dema), senior foreman. And recently we all learned with great satisfaction of the award of the USSR State Prize for 1978 for outstanding achievements in labor to pacemakers in the All-Union Socialist Competition: V. A. Zhilin, senior foreman of the Sol'vychevodsk depot, N. F. Mikhayev, fitter, and N. A. Savin, operator.

The managers of all links in the locomotive services must also further carry on the work of training the labor force, of instilling a sense of responsibility in them for the work entrusted to them, and of further developing socialist competition and tutorship.

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Important social measures are being carried out during the current five-year plan. During the [past] three years, 4.5 million square meters of living space have been built and children's preschool institutions with 31,000 places, general educational schools for 34,000 and hospitals with 6,000 beds have been opened for railway workers. Supplementary payment for work during night hours has been raised and the wage rates for employees in a series of leading occupations have been increased. Coefficients for the salaries of railway workers working in regions with harsh natural and climatic conditions have been introduced. The average monthly salary in our industry is 174 rubles, as opposed to 159 rubles in 1975. The salary for locomotive brigades in 1978 has grown by 40 percent over that of 1970, while that of repairmen has grown by 37.9 percent. The wage rates and salaries of wiremen and electricians for the overhead wire network who are engaged in work involving heights and off-ground activity as well as of a series of electricians at traction substations and repair and inspection shops of the electric power supply sections have been raised.

A decision has been reached to pay a one-time lump award for prolonged meritorious service to employees engaged in the basic activity of rail transport. The size of the award, which is directly dependent upon the length of uninterrupted service, will be 0.6 to 1.5 [percent?] of the monthly wages rates or salary. What will this provide, for instance, for a locomotive engineer operating a passenger train with a length of service of 10 years? When the year's results are cited, he will receive a one-time lump award in the amount of 242 rubles. An electrical wireman of the Fourth Category engaged in maintenance of the overhead wire network will receive an award of nearly 185 rubles upon a length of service of 15 years.

The first payment of the one-time lump award to employees of the Dal'nevostochnaya [Far Eastern], Zabaykal'skaya [Transbaykal], Vostochno-Sibirskaya [Eastern Siberian], Zapadno-Sibirskaya [Western Siberian], Alma-Atinskaya [Alma-Ata], Tselinnaya [Virgin Land] and Zapadno-Kazakhstanskaya [Western Kazakhstan] Railroads will be made when results of the work for 1979 are cited, the payment to employees of the Sverdlovskaya [Sverdlovsk], Yuzhno-Ural'skaya [Southern Urals], Kuybyshevskaya [Kuybyshev], Gor'kovskaya [Gor'kiy], Severnaya [Northern], Privolzhskaya [Volga Valley] and Sredneaziatskaya [Central Asian] Railroads when results for 1980 are cited, while awards to employees of the remaining railroads and subway systems will be made when results for 1981 are cited.

A series of other important social measures is also being carried out.

## Lagging Sections

The situation in rail transport could be substantially better if the so-called "bottlenecks" were eliminated with greater vigor.

Employees of the locomotive services of the Sverdlovskaya, Alma-Atinskaya, Sredneaziatskaya, Zapadno-Kazakhstanskaya, Kuybyshevskaya, Zapadno-Sibirskaya and a series of other railroads still do not provide for steady and normal



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operation of the locomotive fleet. The percentage of diesel locomotives in a state of disrepair is 1.5 to 2 times higher than the established norm on these railroads, while the number of instances of damage to machinery en route to and while stopped for repairs that were not stipulated in the plan is substantially higher than the average network-wide indicators.

The basic reason for this is a violation of the planned preventive maintenance system for locomotive repairs, their low quality, weak discipline, the lack of a full complement of personnel and the slow development of the repair base at depots. The technical condition of locomotives is substantially worsened by their operation on stretches for traffic turnover that are not securely fastened, at speeds lower than the rated speeds and pulling trains weighing more than the critical weight.

The level of the technical condition of locomotives has been reduced also owing to the fact that the commanders of a series of railroads, services within locomotive services and depots are managing their units in an insufficiently organized and operations-effective manner. Thus, a need arose on the Alma-Atinskaya, Zapadno-Kazakhstanskaya and Tselinnaya Railroads for a sharp increase in the size of the fleet owing to frequent instances of locomotives being out of order--a need which depots were not ready to meet. As a result, the traffic handling capacity of the technical service points and repair base of these depots does not provide for prompt preparation of diesel locomotives for operations, which leads to an even greater increase in the number of machines in a state of disrepair. A vicious circle is formed, like a chain which one can break if one performs the necessary task of extracting one decisive link, which is done in this instance by improving the technical condition of locomotives through prompt execution of planned repairs and maintenance.

Meanwhile, in some depots diesel locomotives are turned out from certain types of repairs that are provided for in the plan at a rate that is 1.5 to 2 times less than what it was in 1974, since the basic work forces of repairmen here are being channeled into repairing diesel locomotives damaged during the course of operations, the number of which is growing as the number of repairs provided for by the plan is reduced and the care for locomotives on the part of brigades deteriorates. This situation is also aggravated by the fact that the dispatcher personnel send locomotives for repair at inopportune times.

Plant repairs play an important role in restoring locomotive resources, increasing their reliability and improving their technical condition. Measures are now being taken to expand and modernize the plant locomotive repair base, which, of course, requires a certain amount of time. Hence, employees of our industry, first of all, at the Tashkent, Orenburg and Voronezh plants, must be more persistent in utilizing internal resources to increase the productivity of shops, more widely incorporate advanced methods of organizing labor and new technology for repairs and raise the quality of work.

Recently, serious violations of the labor schedule and time off for locomotive brigades have been permitted on a series of railroads. Thus, in 1978, more

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than half of the violations of the established duration of work by brigades for the entire network were concentrated on the Yuzhno-Ural'skaya and Sverdlovskaya Railroads.

In December of last year the Board of the Ministry of Railways in conjunction with the Presidium of the Central Committee of the Rail Transport Workers' Trade Union examined the state of affairs on the Sverdlovskaya Railroad. It was noted that the administrators of the railroad, as well as of a series of other railroads, are attempting to explain the situation that has been created basically by pointing to inadequate traffic carrying and processing capacities on freight-intensive stretches and at major marshaling yard junctions, forgetting about their own shortcomings in work. As a matter of fact, the basic reasons for this are often to be found in serious omissions in operations planning for train operations and control of the locomotive fleet, in the organization of the passage of trains, above-norm layovers en route, cancellation of trains owing to damage to the rolling stock and a weakening of industrial discipline at marshaling yards. In a series of instances less-than-conscientious dispatchers simply do not follow the work schedule of locomotive brigades, since their commanders do not hold them responsible for this. Unjustified orders by chiefs of railway branches to lengthen the work schedule are also not rare.

V. M. Skvortsov, director of the Sverdlovskaya RR, has been strictly warned concerning serious violations of requirements of the labor legislation, failure to execute Ministry of Railways orders No. 34Ts of 1971 and 30Ts of 1978, unsatisfactory organization of the labor and time off of locomotive brigades, and a growth in instances of detaining them at work beyond the established norm.

The Ministry of Railways will also henceforth hold those administrators strictly responsible who permit violations of labor legislation and of normal working conditions and terms for time off of locomotive brigades.

One must note that on many railroads, including the L'vovskaya [L'vov], Odessko-Kishin'evskaya [Odessa-Kishin'ev], Pridneprovskaya [Dnepr Valley], Zabaykal'skaya, Yuzhnaya [Southern], Belorusskaya and Pribaltiyskaya [Baltic Coast] Railroads, the necessary working conditions and terms for time off by engineers and their assistants have been provided for over the course of a series of years. More than 82 percent of the brigades engaged in freight traffic worked last year according to the non-volunteer system [bezvzyvnaya sistema?] and name schedules [imennoye raspisaniye?], which are drawn up in a series of depots with the use of computers. There must be more urgency in incorporating this trend in practice.

#### Chief Tasks

Very crucial tasks in assimilating growing shipments face railway workers in the next few years and in the long term. The chief ones were formulated in Program Order 30Ts. The reserves of locomotive services were pointed out recently in an article by V. F. Sosnin in the journal ELEKTRICHESKAYA I TEPLOVOZNAJA TYAGA (No. 11, 1978). Hence, let us dwell for a moment on the immediate problems.

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It is very important under the conditions that have arisen to incorporate in every way possible advanced experience from the work of enterprises and innovators in production and to make this experience the property of all. In the area of locomotive utilization, one must compete with the Georgiu-Dezh depot, where many brigades have achieved a 1,000 km average daily run and 1,000 minutes of useful (effective) work from a locomotive in 24 hours.

At the Sol'vyhegodsk depot, as was already noted earlier, the useful (effective) run of diesel locomotives as a whole is equal to 700 km a day, while here at the Emba depot on the Zapadno-Kazakhstanskaya RR, the average daily run of main line 2ET10V diesel locomotives is only 303 km. In other words, one must maintain a fleet of diesel locomotives here that is 2.3 times larger than the aforementioned in order to perform identical transport operations.

High productivity of electric locomotives—1.5 times higher than for the network on the average—was achieved by the collectives of the Kuybyshevskaya, Tselinnaya, Yugo-Zapadnaya [Southwestern], Zabaykal'skaya and Yugo-Vostochnaya [Southeastern] Railroads. At the same time, the average daily productivity of an electric freight locomotive on the Zakavkazskaya [Transcaucasian], Sverdlovskaya, Dal'nevostochnaya and L'vovskaya Railroads was substantially lower than the average network-wide figure.

Reserves for improving locomotive utilization are available on all railroads. The task of transport employees—from fitter at the locomotive depot, engineer or dispatcher to manager of an enterprise or a railroad—is to utilize them more fully.

A special question is that of providing for traffic safety. During recent years a series of railroads, first of all, the Yugo-Vostochnaya, Kuybyshevskaya and Yuzhno-Ural'skaya Railroads—have been operating without accidents and wrecks, while on some others the number of slow orders and instances of defective performance in train operations have been reduced. The chief task of locomotive brigades is one of not permitting slow orders to occur in the future, for which the efforts both of the engineers themselves as well as of operational administrators and of public organizations must be mobilized.

As before, electrification of railways will be the chief trend in further increasing the carrying and traffic capacity of freight-intensive lines. Important lines in Western Siberia, Kazakhstan, the Urals and elsewhere must be electrified as early as the next few years.

Electrification will, in the main, be carried out according to a progressive system with an alternating current of 25 kilovolts. One of the sections is being electrified according to a new system with a current of 2 x 25 kilovolts, which is being proposed for use in the future on the Baykal-Amur Main RR Line and in Kazakhstan.

An important task in the electric power supply services is that of increasing the reliability of a series of installations, to begin with, of the overhead wire network, particularly on ice-covered ground. In terms of needs for

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electric power supply installations, one must make still wider use of the assemblies for diagnosis of the technical condition of basic connections and equipment, take the necessary measures for a further reduction in the wear on overhead wires and prolongation of their service life and introduce new, more efficient servicing methods that guarantee a high quality of maintenance of technical facilities.

Modern electrified lines providing for intensive train traffic and high speeds are unthinkable without improved means of automation and telemechanics.

At the present time 28,700 km of electrified lines, or 71 percent of their total length, operate on remote control. By the end of the five-year plan the length of the telemechanized sections will grow to 31,000 km. Work will continue in 1979 on the further extension of station tracks, strengthening of tracks and development of other installations.

In the future industry will begin to supply rail transport with electric locomotives with a power of 8,000 to 10,000 kw with support-frame suspension [oporno-ramnoye podveshivaniye?] in the traction motor and an electronic control system on thyristors [tiristory?] and diodes with high parameters, electric trains, diesel locomotives with a power of 4,000 to 6,000 horse power in a unit, new six-car diesel trains with electrical drive and rail diesel cars with cars which can be coupled to them.

A diesel switching engine with a power of 2,000 horse power and an 8-axle carriage has been created for work at major hump marshaling yards and for heavy switching and haulage operations. Employees at depots must be trained promptly to operate the new locomotives and to perform technical maintenance and repairs on them.

Great attention must be paid to working conditions and conditions for the everyday life of employees of locomotive services and plants. Improvement in the working conditions for more than 35,000 work places through automation of sand-conveying units and compressor stations, the introduction of flow lines for the repair of locomotives and their joints, modernization of the systems for suction-and-exhaust ventilation and dust removal, improvement in the sound-proofing of engineers' cabs and improvement of control devices is envisaged during the current five-year plan. It will be necessary to put new sanitary and living accommodations for 30,000 employees into operation.

In recent years scholars at the Central Scientific Research Institute of the Ministry of Railways and at higher transport educational institutions have expanded their connection with railroads, depots and repair yards. For instance, research on the reasons behind the unsatisfactory technical condition of diesel locomotives on the railroads of Kazakhstan and the Gor'kovskaya RR and study and dissemination of the positive experience on the Severnaya and Belorusskaya Railroads have enabled the drafting of a series of measures to improve the operations of the diesel locomotive fleet.

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All the same, we expect an even closer tie with practical work on the part of scientists and an even greater yield in terms of practical results.

A system and apparatus for diagnosis of the condition of diesels through a spectral analysis of the oil, which has been developed and introduced on 26 railroads, enables one to prevent some damage to diesels while en route. However, a well-proportioned system is needed to diagnose the condition of all the joints in the locomotives, which would enable one to uncover defects during the course of operations and prior to being sent for repairs and to evaluate the quality of repairs when the locomotive departs from the enterprise performing them.

It is not a simple situation that has developed in rail transport, as Comrade I. I. Brezhnev noted at the November (1978) Plenum of the CC CPSU. In this connection, in accord with the State Plan for the Economic and Social Development of the USSR adopted at the 10th Session of the USSR Supreme Soviet, more capital investments are being allocated in 1979 than envisaged by the five-year plan to improve the material and technical base and to increase the capacity and ease of movement of the railways.

In order to increase the traffic and carrying capacity of main lines, 820 km of second (double) tracks will be put into operation, 1,300 km will be electrified and more than 3,300 km of railway lines will be equipped with automatic block systems and centralized traffic control. There will be 770 km of new lines that will go into operation, of which 220 km will be the Tynda-Berkakit line, along which shipment of southern Yakut coal will begin. Particular attention is being paid to the development of railroads in the eastern regions of the country to provide for the growing volume of shipments of Kanskoginskiy [Kansk-Aginskoye], Ekibastuz and Kuznetskiy coal.

There will be 1,330 new diesel locomotive units, 440 electric locomotives, as well as freight and passenger cars, containers, etc., delivered to railroads.

Plans are being outlined for a further improvement in the qualitative indicators for utilization of rolling stock. Freight railcar turn-around time must be accelerated by 5.5 percent and the average daily productivity of a locomotive must be raised by 1.5 percent.

On account of the measures which have been outlined, railway workers must assimilate a freight turnover of 3,518 billion ton-kilometers, or 2.6 percent higher than in 1978, and likewise must carry 3.0 percent more passengers than in 1978. In this connection, the growth in labor productivity must be 2.1 percent as opposed to 1.4 percent last year.

Considering the great and heightened tension in the operations of the railroads, railway workers must do an even fuller job of bringing to light the internal resources which are available to transport in order to perform successfully the important tasks that have been set forth by the Party and the government and to ensure high quality and efficiency in the operations of the country's main steel highways.

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