16 JULY 1979 (FOUO 9/79) 1 OF 1

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TRADE AND SERVICES

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USSR REPORT

TRADE AND SERVICES

(FOUO 9/79)

CONTENTS PAGE

CONTENTS (Continued) Page

TRANSPORTATION

INTERNATIONAL ECONOMIC RELATIONS

CEMA COOPERATION IN COMMUNICATIONS DISCUSSED

Moscow ELECTROSVYAZ' in Russian No 5, May 79 pp 1-4

[Article by S. K. Sergeychuk: "The Cooperation of the CEMA Countries in the Field of Communications"]

[Text] Thirty years ago, in January 1949, at an Economic Conference of representatives of Bulgaria, Hungary, Poland, Romania, the Soviet Union, and Czechoslovakia it was found to be necessary to create the Council for Mutual Economic Assistance -- CEMA. The movement by the countries which had taken the socialist path toward the planned development of their economies, the common nature of their economic base, and the international situation which had developed during the post-war period had given rise to the possibility and necessity for creating a new form of economic cooperation between the socialist countries.

In April 1949 there was held the first CEMA Session which defined the basic directions of the work of this organization -- economic cooperation on the basis of a consistent deepening and expansion of the international division of labor in the interests of the construction of socialism and communism and of ensuring a stable peace in the world.

Today the members of the CEMA organization 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 Soviet Union, and the Czechoslovakian Socialist Republic; the Socialist Federated Republic of Yugoslavia, the Finnish and Iraqi Republics, and the Mexican United States are cooperating with the CEMA.

At first the work of the Council for Mutual Economic Assistance amounted to coordinating the developing the trade between the participant countries in order to increase the efficiency of trade operations. By the beginning of the 1960s the basic difficulties of the post-war

period had been overcome in the countries of the socialist commonwealth. The economies of the European people's democracies were developing at rapid rates. By 1962 the industrial production of the socialist countries had increased by an average of 7.5 times compared to 1940 (while during the same period the increase in the capitalist countries was 2.7 times). Substantial successes were achieved in agriculture and qualitative changes occurred in the structure of productive forces. A dynamic development of the key branches of industry upon which supplying the economy with the means of production and raw materials depend was occurring in the European socialist countries, as well as an intensive development of power engineering, machine building, and chemistry -- that is, the development of the branches which are essential for technological progress.

Thus, in the 1960s in most of the CEMA countries, the time had come for a shift to a more planned formation of the productive forces, and in the relations between the countries it was found useful to have a mutual coordination of national economic complexes within the framework of an international socialist division of labor. In accordance with this, one of the basic tasks of the Council for Mutual Economic Assistance became the coordination of the plans for the development of the economic branches of the CEMA countries.

During this period the CEMA member countries adopted a decision for a shift in the work of the Council toward a new type of economic relations -- socialist economic integration. The new stage is characterized by the development and, then, by the beginning of the realization of an Overall Program for a Further Deepening and Improvement of the Cooperation and for the Development of Socialist Economic Integration of the CEMA Member Countries which was unanimously adopted by the 25th CEMA Session in 1971.

The intensive development of all of the branches of the economies of the CEMA countries and their strengthened inter-state political, economic, and cultural relations gave rise to a need for a sharp increase in the amount of services and for an accelerated and coordinated development of electricity and postal communications.

The question of creating an international agency which would manage all of the problems connected with providing for the needs of the state apparatuses, the economies, and the populations of the CEMA countries for electricity and postal services was put on the agenda of the Council for Mutual Economic Assistance. In 1971 at the 25th CEMA Session, at the same time that the Overall Program was adopted, a decision was made to create a CEMA Permanent Commission on Electricity and Postal Communications. In the same year of 1971 there was held the first

meeting of the Commission at which the Commission Statute was adopted, the Commission Chairman was elected, and the basic directions of the international cooperation of the CEMA countries in the field of communications were mapped out. All of the CEMA member countries and the Socialist Federated Republic of Yugoslavia take part in the work of the Commission.

The Commission's basic tasks are:

-- the creation of a reliable, far-flung and large-capacity international network of communications for the CEMA countries with a centralized system of operations and technical management;

-- the development of the technical specifications for the systems, equipment, and apparatus which are necessary for the creation and operation of an international communications system and for the development of national communications networks in the CEMA countries;

-- the organization of the development and production of the equipment, mechanisms, devices, and specialized transportation equipment which are necessary for the mechanization and automation of production processes in postal work and in the dissemination of printed matter.

In order to realize these basic directions of work which have been defined for the Permanent Commission by the Overall Program, a large number of measures have been provided for in the Commission's work plans. In particular, in order to accomplish the first of the above tasks a plan has been worked out and agreed upon by all of the countries for the creation of an inter-coordinated automated overall system of communications (IAOSC) of the CEMA countries for the transmission of all kinds of information and an Inter-Governmental Agreement has been concluded on the creation and operation of this system. An inseparable part of the Agreement is the "Plan of Measures for the Creation of an IAOSC" which contains concrete measures for the construction (reconstruction) of electricity facilities with a specification of agreed-upon amounts of work and fulfillment schedules for each concrete facility.

By decision of the 29th CEMA Session the problem of the creation of an IAOSC was included in the Coordinated Plan of multilateral integration measures of the CEMA countries for the years 1976-1980. The Coordinated Plan is a new step forward in improving the cooperation of the CEMA countries in the field of planning. Of the approximately 300 facilities which are being built by the countries within the framework of the CEMA, it included only nine whose creation was found to be of the greatest importance for the development of the economies of the socialist countries. The fulfillment of the measures of the Coordinated Plan is

under the constant control of the leading agencies of the CEMA countries. The inclusion of the IAOSC among the facilities in the Coordinated Plan speaks of the great importance that is being attributed to the development of a communications network between the CEMA countries.

The performance of joint measures to develop and improve the networks and equipment of international communications is giving rise to the necessity for coordinating the plans for the development of the communications of the CEMA countries. This large amount of difficult work which is being performed by the countries within the framework of the Commission provides for a preliminary exchange of information on the planned development of communications, the performance of mutual consultations by the countries on the most important economic and scientific and technical programs, a coordination of the amounts and schedules of work which is of mutual interest, and so forth.

Serious attention is being devoted by the Commission to providing the communications of the CEMA countries with promising equipment which has been created in accordance with technical specifications which satisfy all (or a majority) of the countries participating in the work of the Commission. During the time which has passed since the organization of the Commission up to 1979, specialists have worked out the technical specifications for 12 types of electric communications apparatus, 21 types of postal equipment, and 8 types of equipment for the mechanization of the construction of communications installations. These materials were agreed upon and approved by the Commission; that is, they have acquired the force of a directive document for the countries in determining the technical parameters of apparatus.

Within the Commission specialists from the CEMA countries are conducting a large amount of scientific research work in the field of communications which is aimed basically at ensuring the accomplishment of the tasks which have been posed for the Commission by the Overall Program.

In accordance with the Program, development work has been completed on the technical specifications for the equipment for quasi-electronic commutation systems and for the apparatus of radio-relay communications lines. The prerequisites have been created for further production specialization and cooperation in the CEMA countries for unified equipment on an auspiscious element basis. The approval in 1978 of technical specifications for quasi-electronic automatic intercity telephone stations and the introduction of this equipment at communications networks will make it possible to modernize the existing telephone networks of the CEMA countries and to make use of all of the advantages and possibilities of centralized program management.

Development work is being continued on an integral-digital communications system and its apparatus. Of practical importance in this respect was the approval by the Commission of the technical specifications for electronic automatic telephone exchanges for city telephone networks involving the use of uniform digital methods of transmission and commutation, and also programmed control. The use of such stations will promote the further development in the CEMA countries of local networks which will ensure high parameters of reliability and accuracy for transmission, which will be especially important in the future when there will be an extensive introduction of digital transmission and commutation methods which will be the prerequisite for the use of an integral-digital communications system.

Research has confirmed the possibility of using electronic automatic telephone exchanges in the old neighborhoods of large cities on the basis of the existing telephone networks without their fundamental reconstruction.

The completion in 1978 of research and comparative tests on equipment for secondary digital transmission systems with positive and bilateral staffing was an important step forward in the creation of unifed digital transmission systems and in curtailing the types of equipment being used. The possibility was determined of creating in the CEMA countries unified equipment for secondary temporary group formation with a universal cycle on the basis of a uniform method of uniting digital flows. This will make it possible to ensure the work of secondary transmission systems in the many operational modes which are used at the communication networks of the CEMA countries, including digital commutation systems with a speed of 8,448 kbit [expansion unknown] per second. The result has been a decision by the Commission to develop the technical specifications for unified secondary temporary group formation equipment with a universal cycle.

A decision has been made to make a contribution to the International Telegraph and Telephone Consultative Committee on the structure of the universal cycle for secondary digital transmission systems. The USSR Administration of Communications has been charged with making this contribution in the name of the communications administrations of the CEMA countries.

The introduction of digital transmission methods for radio-relay communications lines is becoming very important. An important step in this direction was development and approval of technical specifications for modern apparatus for ground radio-relay lines with increased reliability and maximum automation which are designed for the transmission of digital information. The first practical step in the introduction of digital transmission methods on radio-relay lines was

the organization of joint transmissions on analogous and digital information trunks. Research has been begun on the methods of joint transmission, and also on the methods of telecommunications services and on reserving digital radio-relay lines.

Research is being performed on a number of problems in the creation of optical communication systems. In keeping with the theoretical research which has been performed on the method of transmission at high speeds and with an improvement of the technological base of the production of optical fibers, a program has been developed and is beginning to be realized for the creation of an experimental complex of equipment which is designed for a transmission speed of 34 nbit [expansion unknown] per second; this will make it possible to organize on the order of 2,000 joining lines between automatic telephone exchanges with a cable with ten fibers; at the present time scarce materials -- copper and lead -- are being expended for their organization.

Scientific and technical research has been completed on the selection of a uniform system of signalization on the telegraph network of the IAOSC and the national networks of the CEMA countries, which is of great practical importance for ensuring the unity of the telegraph networks of the CEMA countries, the unification of the algorithms for providing services to telegraph customers and the operational processes, and also a further expansion of telegraph networks. The development of a uniform signalization system will make it possible to carry out work on multilateral production specialization and cooperation for the equipment of commutation telegraph stations.

The technical specifications have been worked out for a transmission system complex of unified linear circuit equipment for 3,600 channels which provides for the interlinking of systems which have different linear spectrum constructions, which is especially important in constructing the IAOSC network and in developing the national networks of the CEMA countries.

A transmission system for 3,600 channels differs advantageously in its technical and economic indicators which were previously developed and used in the networks of the CEMA countries.

The Commission is also carrying out many other research projects which are of mutual interest for the CEMA countries.

The adoption of coordinated technical specifications for individual types of communications equipment ensures the possibility of producing and using unified equipment in the countries.

One of the chief tasks of the CEMA is the creation of the preconditions for a socialist production specialization in which one of the countries, in accordance with the Agreement, produces equipment for the other CEMA countries which are able to use their production capacities to produce equipment of a different type.

At the present time the Commission is preparing two agreements -- on the specialization of the production of equipment for the formation of mono and stereo radio channels, and on a multilateral international specialization of the production of mechanization and automation equipment for the production processes at postal and printed matter dissemination enterprises. In accordance with the draft of these agreements, one of the countries (in the first case the Polish People's Republic) takes upon itself the obligation of satisfying the needs of the other participants in the Agreement for equipment.

The cooperation of the CEMA countries in the field of postal communications and of the dissemination of printed matter is being carried out in order to improve the quality of services for the population and to increase the labor productivity of the workers of these enterprises. The Commission has worked out unified technological models and systems of mechanization and automation for production processes in postal communications and printed matter dissemination in six basic fields of production activity: the reception of postal matter from the population and from institutions; the processing and intra-production transportation of postal matter and printed matter; the shipping of postal and printed matter; the delivery of postal and printed matter; operations connected with subscriptions for and the retail sale of the periodical press; and the processing of the technological data of postal communications and printed matter dissemination.

A unified technological model is a complex of optimal organizational and technical solutions which ensure maximum efficiency for the production processes which satisfy the needs of the interested CEMA countries. The model contains a description of the technological process, a diagram of the interconnections between individual units of the complex, the basic parameters of the machines being recommended for use, and a definition of the economic effectiveness of the introduction of the decisions being recommended.

During the period 1973-1975 ten models and systems were developed and agreed upon for the most important aspects of the production work of postal and printed matter dissemination enterprises. The coordination of the work on the different models was performed by specialists from the Hungarian People's Republic, the GDR, the Polish People's Republic, the Socialist Republic of Romania, the USSR, and the Czechoslovakian Socialist Republic. Definite difficulties had to be

overcome here, since in different countries historically there had developed different demands upon the services of the post office and of printed matter dissemination and different postal rules had been evolved. In 1978 the CEMA publishing house issued a handbook which contains a brief description of the unified technological models and systems.

For each of the models there has been an agreement on a list of equipment which is necessary for the most efficient performance of the production process which includes the machinery and mechanisms already being produced in the CEMA countries, and those which have to be created. The approximate needs of the CEMA countries are defined for each type of equipment.

All of the work in the Commission is conducted in a friendly and business-like atmosphere with regard to the forecasts which have been developed by specialists of the development of the electricity and postal communications of the CEMA countries until 1990.

One of the basic commandments of the CEMA is to raise the level of the industrialization of the countries with a less developed industry and the gradual bringing together and equalization of the levels of economic development of the CEMA countries. For this reason, during the first years of its existence the question was posed for the Commission's participants of providing assistance in the development of communications of the Mongolian People's Republic. Proposals which have been developed by Mongolian specialists together with representatives of the CEMA countries include measures for the construction and reconstruction of communications facilities, for equipment deliveries, for the training of specialists, and so forth on the basis both of the extension of credit to the Mongolian People's Republic by the CEMA countries and non-repayable assistance. After they had been carefully worked up in the Commission, these proposals were approved by the CEMA Executive Committee and recommended to the CEMA countries for use in bilateral negotiations with the Mongolian People's Republic on the coordination of economic development plans.

As is the case in the work of any CEMA working body, all of the basic directions of the Council's activities have found a reflection in the work of the CEMA Permanent Commission on Electricity and Postal Communications with regard to "communications" problems -- the coordination of the efforts of the countries in developing communications, an acceleration of progress in improving the means and services of communications and in creating new types, socialist specialization and cooperation in a development of communications equipment, a rise in the level of the development of communications in countries with a less developed communications enterprise, and so forth.

Created in 1949, during the period of the establishment of socialism as a world system, in 30 years the Council for Mutual Economic Assistance has covered an enormous path of development. Its work has been expanded and improved, being enriched with new forms and methods which accord with each new stage in the development of the CEMA member countries.

The flexibility of the economic principles of the Council for Mutual Economic Assistance which is founded on a profound understanding of the historical laws of the economic and social development of society, on equality, mutual respect, mutually advantageous cooperation between the CEMA countries, and on ensuring the gradual equalization of the levels of their economies has made it possible for the countries which participate in the work of the CEMA to achieve enormous successes in their economic development. Over a period of three decades per capita industrial production in the CEMA countries has increased by 8 times (the average world indicator is 3.2 times). The share of the CEMA countries in the production of world industrial output has increased from 18 to approximately 30-32 percent. National income in the CEMA countries as a whole has increased by almost 9 times while the amount of capital investments in their economies has increased by 10 times.

From a coordination of the development of trade at the beginning of its activities the Council has moved on to the coordination of the economic development plans of the CEMA countries and has developed such historical documents as the Overall Program and the Coordinated Plan. Today, at the center of the Council's attention, in addition to the realization of the Overall Program, is the development of long-term special-purpose programs of cooperation in various fields of the economy. It was emphasized by a Council session that these long-term programs define the coordinated cooperation strategy of the CEMA countries for the long term in the fields of material production and are a concretization and development of the Overall Program.

The 25th CPSU Congress very clearly defined the direction of the long-term special-purpose programs -- to provide through the common efforts of the countries cooperating in the CEMA for the needs of the countries for energy, fuel, and the basic types of raw materials, to satisfy their demand for consumer goods, to raise the level of machine building, and to accelerate the development of transportation. The accomplishment of any of these tasks is impossible without the widest development and improvement of the communications services and equipment of the CEMA countries, both on a national and an international level, and this is the aim of the work of the CEMA Permanent Commission on Electricity and Postal Communications.

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INTERNATIONAL ECONOMIC RELATIONS

INTEGRATION OF CEMA COUNTRIES IN THE FIELD OF MECHANICAL ENGINEERING

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/Text/ In January of this year the community of socialist countries, all progressive humanity marked the 30th anniversary of the Council of Mutual Economic Assistance--the first organization of economic cooperation of the countries of socialism in the world. The formation of CEMA, realized at the will of communist and workers parties of socialist countries, was a big step forward on the way to strengthening the economic power of the countries of the community. During 30 years CEMA countries have multiplied the economic potential manyfold. Thus, the national income of states, members of CEMA, has increased 10 times as compared to 1948, and industrial production has increased 17 times. Occupying 19 percent of the territory and having 10 percent of the population of the globe, CEMA countries are producing approximately one third of the world's industrial goods and giving more than one half of increment of industrial production.

The profound nature and intensity of the processes of integration, which is developing under the influence of the adopted in 1971 complex program of socialist economic integration of CEMA countries, are especially felt in the field of mechanical engineering. Reflected therein is the fact that the high rate of economic development of CEMA countries is directly connected with the intensification of the international socialist division of labor in the field of mechanical engineering. This branch of industry is developing in CEMA countries at a surpassing rate which fact is dictated by the necessity to resolve an aggregate of important national economic tasks in respect to improving production and its efficiency in all areas of the economy. The intensification of mutual economic relations of CEMA countries under the conditions of a further deepening of integrational processes in the field of mechanical engineering exerts an ever-increasing influence on the development of this industry in CEMA countries, on the future formation of an international machine-building complex of socialist countries, members of CEMA.

CEMA countries have a powerful machine-building basis available to them. There hundreds of thousands of designations of goods are produced, in excess of 22.6 million people are employed. The share of mechanical engineering and metalworking goods in the gross output of the whole industry of the European

CEMA countries has risen to 24-34 percent which corresponds to the level of the most developed capitalist nations. Mechanical engineering in CEMA countries will continue to develop at a high rate, because the rate of scientific and technical progress in the whole economy depends on this. National economic plans of their development anticipate to increase the output of mechanical engineering goods by 1980 as against 1975 in the People's Republic of Bulgaria approximately two-fold, in Hungarian People's Republic 1.3-1.4-fold, in Polish People's Repubic 1.6-1.7-fold, in Socialist Republic of Romania 1.7-1.8-fold, in the USSR more than 1.5-fold, and in the CSSR 1.5-fold. The scientific and technical revolution accelerates the emergence of new types of production in various branches of the industry, requiring the creation of new tools of labor. Under contemporary conditions not a single country in the world is capable of providing a high technical and economic level of production in respect to the whole nomenclature of goods necessary for the national economy. On the other hand, the highest labor productivity and the best indicators can be reached only with the optimum scales of output, permitting one to use highly productive equipment, automated lines, progressive technologies and forms of organization of production--mass and large-series. Not all CEMA countries are capable of providing such scales of production in respect to diversified types of goods, which fact is connected with the availability of production, financial, labor, and raw materials resources in one or another country. The branching and increasing complication of the industrial structure of mechanical engineering production consequently demand to limit the complex of machine-building industries for the purpose of achieving an optimum arrangement of industrial interconnection with a simultaneous expansion of output of the nomenclature of machines and equipment identical in design and technology. On the other hand, the prerequisites, easing the growth of the division of labor in mechanical engineering, are its design-technological and production-organizational peculiarities which make it possible to isolate individual industries and types of production within national and international limits into specialized large-scale production units.

All this dictates the necessity of carrying out a harmonious, coordinated policy among CEMA countries in the field of mechanical engineering development on the basis of a mutually profitable unification of efforts and intensification of cooperation. Supplementing each other with the help of a formation of stable and involved production and trading relations, CEMA countries select and develop mainly those industries and types of production for which there are corresponding prerequisites.

In CEMA countries there constantly occurs a process of formation of specialized on an international plane industries, subindustries, types of production, type sizes of items, assemblies, and parts. Thus, the following specialized industries and subindustries have been gradually isolated: electric- and motorcar-building in Bulgaria; bus-building and large-series production of automobile assemblies and parts in Hungary; shipbuilding, chemical machinery building, textile machine building, production of forging and pressing equipment, passenger cars in the GDR; shipbuilding, production of road and construction machines in Poland; chemical machinery building, manufacture of

automobiles with a large cargo-hoisting capacity in the USSR and CSSR, manufacture of oil-extracting equipment and locomotive-building in Romania; production of unique equipment in the USSR.

We are speaking about the typification of machine-building complexes of CEMA countries in the output of certain types of machines and equipment. As a result not only own needs, but also the needs of other brotherly countries are satisfied. Already now CEMA countries through mutual imports and exports satisfy almost 62 percent of their needs for machines and equipment. In 1977 exports of these goods increased 16.6 percent, while the growth of total export in mutual trade was more than 15 percent. As a result of this in 1977 the relative share of machine-building goods in the export of CEMA countries has reached 43 percent, which is much higher than in the developed capitalist nations' structure of foreign trade.

In the mutual trade of CEMA countries the share of goods of the electronic and electrical engineering industry, automation equipment industry, instrument making, and computer technology is rising systematically, which fact is connected with the priority development of new, more advanced branches of the industry.

It is also important to note USSR's key position in the machine-building complex of the socialist community which is explained by the development of mechanical engineering in our country, by the huge internal market and the formative role of its orders for the products of mechanical engineering. Brotherly countries sell from 33 to 50 percent of the whole export of mechanical engineering products on the Soviet market. In turn, complex and necessary to CEMA countries machines and equipment are shipped from the Soviet Union. In the current five-year plan the volume of USSR's commodity turnover with CEMA countries will increase 1.7-fold and will constitute nearly 155 billion rubles, whereby export of machines and equipment will increase 79 percent, and their import, 92 percent.

The integration of CEMA countries in mechanical engineering is being achieved not only through the growth of mutual trade, but also through a rich arsenal of means, forms, and methods of cooperation which enable the countries to make closer and more effective connections in this field.

The specialization and cooperation of production are becoming the most important factor in the intensification of integration of CEMA countries in the field of mechanical engineering. They open the way for a radical reconstruction and modernization of production, renovation of fixed production capital, and speeding up the creation of a new material and technical basis in these industries. The specialization of production makes it possible to put in operation large enterprises with a high capacity to manufacture goods in quantities considerably exceeding the internal needs of the country. On this basis favorable opportunities are created for their export. At present, Bulgaria supplies nearly 99 percent of the total output of electric locomotives to CEMA countries; Hungary, more than 80 percent buses; Poland, more than 70 percent

shipbuilding goods; GDR, more than 75 percent passenger cars. Nearly 95 percent of the total output of excavators in CEMA countries falls to the USSR and Poland; nearly 80 percent of buses, to Hungary and the USSR; more than 95 percent of blast furnace equipment, to Romania and the USSR.

Specialization of production is the most important factor in raising its effectiveness. Calculations of Soviet economists show that for every percentage point of labor productivity increase in USSR mechanical engineering on the basis of development of industrial specialization within the country 1.5-2 times less funds are spent than for every percentage point of labor productivity increase influenced by other factors. Consequently, the task also consists of receiving this effect on the international level as well, because transfer to mass production on the basis of specialization within the limits of CEMA demands introduction of new equipment and technology at the enterprises of these countries, higher standards and organization of production, and creates conditions for the automation and mechanization of production processes. All this substantially raises the economic effectiveness of production. Thus, GDR through international specialization of packing machines production managed to double production. With this, labor productivity increased 1.5 percent, and the production cost of a unit decreased 15 percent. As a result of development of these processes, Bulgaria achieved series production of battery-driven trucks and electric hoists five times higher and more than at the largest Western European firms. Hungarian Icarus Plant became one of the largest bus plants in Europe, it manufactures more than 10,000 buses a year.

The realization of agreements and contracts on international specialization and cooperation of production helps to intensify the integration of CEMA countries in the field of mechanical engineering. These agreements and contracts are made by the countries on a multilateral and bilateral basis and specify long-term deliveries and imports of definite types of mechanical engineering products. At the present time on a multilateral basis alone there are nearly 80 such agreements, embracing 8,000 descriptions of mechanical engineering goods. As a result, mutual export of mechanical engineering goods, manufactured on the basis of agreements and contracts on the specialization and cooperation of production, increased in 1977 in comparison with 1976 by 18 percent, and its relative share in the total export of machines and equipment rose from 23 percent in 1975 to 34 percent in 1977.

The realization of agreements on the specialization and cooperation of production helps to concentrate output of specialized goods in a limited number of countries. In accordance with the consummated agreements it was planned to manufacture nearly 75 percent of mechanical engineering goods in no more than two countries, including 50 percent, in one. As a result, on the basis of international specialization and cooperation there occurs further development of the process of production concentration in CEMA countries. This process of production concentration was expressed in the complete refusal of individual countries to manufacture certain groups of goods. Thus, Bulgaria and Hungary no longer produce unitized operation lines for the manufacture

of sulfuric, phosphoric, and nitric acids, drilling rigs, and paper- and cardboard-making installations. During the years 1976-1980 Poland will abstain from the production of almost 35,000 currently manufactured items of mechanical engineering. CSSR intends to limit or stop production of, for example, oil and gas drilling equipment, grain harvesting combines, caterpillar tractors, bulldozers, subway cars, and certain agricultural and textile machines. Resources, released as a result of this, will be directed toward further development of specialized within the limits of CEMA types of production. GDR has reduced to two fifths the nomenclature of traditional agricultural machines manufactured by it and transferred to importing them, having correspondingly increased the production and export of other machines.

The development of specialization and cooperation of production is closely connected with the intensification and improvement of CEMA countries' scientific and technical cooperation in the field of mechanical engineering. Under the influence of scientific and technical progress this cooperation embraces newer and newer fields of production, extending to such areas as the production of atomic equipment, machine tools with a programmed numerical control, scientific instruments, water- and air-treatment equipment, lasers, and others. Cooperation is developing in the field of joint research and production of electronic computers and control computers. On the basis of broad specialization and cooperation the countries have set up series production of "Ryad" type electronic computers of the third generation. More than 20,000 scientists, engineers, and technicians and nearly 300,000 workers were engaged in the joint development work. The consolidation of scientific and technical potentials of CEMA countries makes it possible to create new advanced types of machines and equipment within the shortest time limits. Thus, Bulgarian and USSR experts have jointly developed and assimilated the production of the KG-1 grape-harvesting combine which raises labor productivity during the harvesting of commercial types of grapes 20 times, and replaces the work of nearly 100 people. The unification of efforts of USSR and GDR experts in the creation of KS-6 beet harvester, which raises labor productivity 2-3 times in comparison with other machines, has made it possible to reduce the time of this combines's creation by two years. The agreement on cooperation in the field of scientific research, experimental and design work, and production of a single series of asynchronous motors, made between the CSSR and the USSR, has enabled the Czechoslovak enterprises manufacturing these motors to economize 10 to 30 percent materials and 25 percent living labor. Joint development and cooperation in the production of the newest looms Model STB, raising labor productivity 2.5 times, are the pride of CEMA countries as well.

Creation by the interested countries of interstate economic organizations, international economic associations, and joint enterprises is becoming an important form of CEMA countries' integration in the field of mechanical engineering. Already created and successfully operating in this field are such organizations as "Agromash," "Interelektro," "Intertekstil'mash," "Interatominstrument," "Intransmash," and others. The creation of international economic organizations makes it possible for CEMA countries on the basis of association and coordination of efforts to resolve jointly the most important

tasks in the field of mechanical engineering. Their activities promote a more operative satisfaction of the countries' needs for particular types of goods and intensify international specialization and cooperation of production. In many respects the activities, for example, of the Organization of Bearing Industry Cooperation (OSTP), whose members are Bulgaria, Hungary, GDR, Poland, Romania, the USSR, and CSSR, contributed to the fact that approximately 97 percent of their needs for ball and roller bearings these countries satisfy through their own production and mutual deliveries. The emergence of this type of organizations and their development in many branches of mechanical engineering not only enriches and strengthens their cooperation, but also exerts substantial influence on the functioning of machine-building complexes inside the countries.

The examples of cooperation intensification in the field of mechanical engineering are becoming more and more numerous, they evidence the successes of CEMA countries in their endeavor to carry on a coordinated and goal-oriented economic policy in the field of mechanical engineering in the interests of the countries of the community.

At the same time, mechanical engineering of CEMA countries still faces a whole series of problems, on the resolution of which on an international basis depends the effectiveness of the functioning of the whole machine-building complex of the community of countries and of each country individually.

First of all, one should note the existing unjustified parallelism in the production of some types of these goods in a number of countries, the lagging behind contemporary world standards of some types of marketed tools of labor in respect to their technical level, quality, and production cost, and the still slow realization of progressive shifts in the industrial structure of mechanical engineering of some CEMA countries.

Speaking at the 32nd CEMA Session, held in Bucharest in July 1978, head of the Soviet delegation Comrade A. N. Kosygin in this connection pointed out the need to pay one's most serious attention to a more effective utilization of the industrial potential of CEMA countries and possibilities of the international socialist division of labor in order to substantially increase the output and mutual deliveries of new machines of high technical standards and quality.

The most important and still unused by the CEMA countries reserve for increasing the economic effectiveness of machine-building production is the development of progressive forms of specialization of production for assemblies, parts, and units and cooperation based on them both inside CEMA countries and in relations among them. The objective grounds for this are rooted in the fact that 80 percent of the production cost of all varieties of machines and equipment falls on the manufacture of assemblies and parts. The expansion of cooperation and correspondingly the appearance in the mutual exchange of mechanical engineering goods of an ever-increasing number of assemblies, parts,

and items of general application in machine building is an important labor-conserving and capital-saving factor, making it possible already now, and all the more in the future, to utilize better the existing small and medium-sized enterprises of CEMA countries, which have skilled personnel, for the organization in them of large-scale specialized production facilities with a narrow nomenclature of goods, therefore, making it possible to use modern technological processes and systems of machines. Specialization in assemblies and parts makes it possible to bring the production of many types of finished goods to optimum volumes and to manufacture them with much smaller outlays than at nonspecialized plants.

The cooperation of CEMA countries in such important fields of mechanical engineering as the production of automated equipment, forging and pressing and casting equipment is not developing intensively enough. CEMA countries have extensive possibilities for specialization and cooperation in metallurgical machine building, particularly in respect to the output of electrothermal furnaces on the basis of using progressive methods of heating, i.e. induction, plasma, and electron-ray heating, as well as equipment for processing metal outside of the furnace with argon, synthetic slag and in a vacuum. The need of CEMA countries for these goods is great, however, it is necessary not only to develop metallurgical machine building further, but to renovate its contemporary basis as well.

An important field of cooperation in the future, where it is necessary to concentrate the efforts of CEMA countries, is heavy machine building and other metal-consuming branches of mechanical engineering. Up to now there still remains a contradiction between the limited resources of raw materials (metal, ore, fuel) in individual CEMA countries, for example in the GDR and CSSR, on the one hand, and the rich production experience, skilled personnel, and the existence of production capacities in these countries, on the other. This contradiction can be settled by way of optimum distribution within the region of CEMA countries of metal-consuming production facilities and more accurate orientation toward the immediate needs of CEMA countries' mechanical engineering field for individual types of machines and equipment both according to the nomenclature and according to the technical level. It is necessary to transfer cooperation in these industries to a broad cooperative long-term basis which will make it possible to reduce not always economically justified flows of ore, agglomerate, coke, other types of fuel, and energy, needed for the production of metal, and to cut down for some CEMA countries investment outlays for expensive, deficit, and in the case of small-scale production ineffectively used foundry and forging and pressing equipment.

The assimilation and expansion of mechanical engineering goods production with consideration to the requirements of scientific and technical progress, as well as development of those branches of mechanical engineering which ensure its modernization merit special attention. In order to reach this goal, it is necessary to intensify scientific and technical cooperation, carry on the coordination of scientific and technical developments, joint planning, design, and technological jobs first of all in industries which are the object of

specialization and cooperation of production, and strengthen the relationship science--technology--production.

The need to resolve the above problems as soon as possible by joint efforts on an international basis also arises in connection with the transfer of CEMA countries to the development and realization of a long-term target program (DTsPS) in the field of mechanical engineering. The draft of this program (along with programs in the field of fuel and raw materials, agriculture and food industry) was approved at the 32nd CEMA Session.

DTsPS in the field of mechanical engineering is directed toward ensuring high rates of development in CEMA countries of the production of modern types of equipment, machines, and instruments in order to better equip fuel and raw materials industries, agriculture, food industry, and machine building proper with the newest machinery, and toward the assimilation of advanced technological processes. In this respect, the priority role is given to undertakings to increase the output and mutual deliveries of equipment for atomic power stations, for the extraction of oil and its thorough refining, and for the exploration, mining, and concentration of solid types of fuel and minerals. In respect to the most important types of equipment a complex of measures will be realized, which includes the development of specialization and cooperation of production, creation of new models, expansion of existing and creation of new production capacities. DTsPS in the field of mechanical engineering will also help to raise the general level of machine building, intensify interconnection and interdependence of machine-building complexes of CEMA countries, and accelerate scientific and technical progress in this sector. The realization of measures, contained in this program, will require the mobilization of all existing forms of cooperation and integration, will lead to a more accurate distribution among CEMA countries of production programs in the field of mechanical engineering, and will exert influence on shaping the profile of machine-building complexes of individual countries. All this will help to raise the effectiveness of each country's national economy and of all this cooperation as a whole.

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INTERNATIONAL ECONOMIC RELATIONS

BOOK DESCRIBES PROBLEMS OF INTEGRATION IN CEMA

Moscow SEV: PROBLEMY INTEGRATSII in Russian 1978 signed to press 12 May 78

[Table of contents and brief description of book by B. G. Dyakin and B. G. Pankov]

[Excerpts] Title Page:

Title: SEV: PROBLEMY INTEGRATSII (CEMA: Problems of Integration)
Publisher: Molodaya gvardiya
Place and year of publication: Moscow, 1978

Signed to Press Date: 12 May 1978

Number of Copies Published: 50,000

Number of Pages: 176

Brief Description:

This book will discuss the structure, functioning, and prospects for growth of CEMA. The main attention of the authors is given to the present stage of economic cooperation--to the process of socialist economic integration that has developed. An attempt is made to comprehend the varied aspects and difficulties of this process. A separate chapter is devoted to the role of youth in realizing major measures of integration.

Table of Contents

CSO: 1823

INTERNATIONAL ECONOMIC RELATIONS

BOOK DESCRIBES LEGAL PROBLEMS OF ECONOMIC INTEGRATION

Moscow SEV I 'OBSHCHIY RYNOK' : PRAVOVIYE PROBLEMY in Russian 1978 signed to press 30 May 78

[Table of contents and brief description of book by Valeriy Ivanovich Kuznetsov]

[Excerpts] Title Page:

Title: SEV I "OBSHCHIY RYNOK"; PRAVOVIYE PROBLEMY (CEMA and the Common Market: Legal Problems)
Publisher: "Mezhdunarodniye otnosheniya"
Place and year of publication: Moscow, 1978

Signed to Press Date: 30 May 1978

Number of Copies Published: 6,000

Number of Pages: 192

Brief Description:

Legal problems tied to the processes of economic integration that are currently underway in Europe are examined in this monograph. The basic difference between socialist and capitalist integration is shown in examples of the activities of CEMA and the EEC.

This work is intended for scientific workers, teachers and students at legal and economic higher learning institutions, international lecturers, propagandists,

Table of Contents

CSO; 1823

INTERNATIONAL ECONOMIC RELATIONS

BOOK DESCRIBES CEMA CO-OPERATION IN THE FIELD OF CONSTRUCTION

Moscow SOTSIALISTICHESKAYA INTEGRATSIYA I POVYSHENIYE EFFEKTIVNOSTI STROITEL'STVA V STRANAKH-CHLENAKH SEV in Russian 1978 signed to press 13 Jun 78

[Table of contents and brief description of book by A.N. Grammatikov, chief editor]

[Excerpts] Title Page:

Title: SOTSIALISTICHESKAYA INTEGRATSIYA I POVYSHENIYE EFFEKTIVNOSTI STROITEL'STVA V STRANAKH-CHLENAKH SEV (Socialist Integration and Increasing the Effectiveness of Construction in CEMA Member-Countries)
Publisher: Stroyizdat
Place and year of publication: Moscow, 1978

Signed to Press Date: 13 Jun 78

Number of Copies Published: 1,600

Number of Pages: 368

Brief Description:

Questions related to the intensification of construction production of CEMA member-countries are dealt with in this collection. Special attention is paid to methods of long-term planning of a construction complex, cooperation in perfecting design-estimate work, the division of labor in joint construction, in the output of construction equipment, in production of materials and structures.

This collection is intended for scientific and technical-engineering workers, and for economists of scientific-research, design and construction organizations, and also for workers of enterprises of the building materials industry.

Table of Contents

CSO: 1823

INTERNATIONAL ECONOMIC RELATIONS

BRIEFS

GAS DELIVERY GUARANTEE SOUGHT--The president of the USSR State Commission for Foreign Economic Relations went to Tehran last month to obtain a guarantee of regular delivery of Iranian natural gas to the USSR. Also sought was the renewal of work on a second gas pipeline capable of bringing to Russia 64 million cubic meters of gas per year. [Text] [Paris VALEURS ACTUELLES in French 4 Jun 79 p 30]

CSO: 3100

CONSUMER GOODS AND DOMESTIC TRADE

NONPRODUCTIVE SPHERE OF ECONOMY DISCUSSED

Moscow VOPROSY EKONOMIKI in Russian No 5, May 79 pp 133-141

/Article by V. Komarov and V. Ulanovskaya: "Economics of the Nonproductive Sphere (A Survey of Literature)"/

/Text/ During the period of developed socialism and its gradual development into communism the role of the nonproductive sphere in the life of society is increasing, which is explained by the goal of socialist social production. This causes the need for the redoubling of the attention of economics scholars toward its theoretical, methodological and national economic problems. Typical of the analysis of the economic problems of the nonproductive sphere, judging from the publications of recent years (1975-1978),[1] is the study of specific trends in the development of its sectors. This is all the more important because this turn in the study of the nonproductive sphere is taking place against the background of the more thorough study of the most important problems of its theory and methodology.

A number of published monographs are devoted to the entire complex of sectors of the nonproductive sphere. It is this diversity of the problems in question which determined the group of works which are being reviewed in this survey and which, in our opinion, are substantially intensifying and expanding the working out of the questions which have not yet been covered in detail in economics literature.

As usual the understanding of productive labor and services remains debatable, although the category of productive labor is one of the most important in Marxist political economy, its interpretation has a direct influence on the solution of cardinal economic problems, such as the methodology of calculating the national income and real income of the population, the determination of the laws of development of the two spheres of the national economy and others. In particular, the interpretation of the category of productive labor is of great importance for analyzing one of the most complex problems of economics--the ascertainment of the role of services in social reproduction, the nature of the link and interaction of the productive and nonproductive spheres of the national economy in the social reproduction process.

The question of the content of the concept "nonphysical production" is also highly debatable. It is well known that some authors, in examining the similarity of both spheres, do not emphasize the peculiarities of nonphysical production and automatically carry over to the nonproductive sphere the principles which are applicable only to physical production. Other researchers, while indicating the differences between the two spheres, do not note the basic unity of the laws which control their development. Without having determined the objective basis of the economic processes taking place in the nonproductive sphere, they are not able to offer reliable methods of analysis, prediction and control of these processes.

The position set forth on this question in M. V. Solodkov's monograph, "Neproizvodstvennaya sfera pri sotsializme" /The Nonproductive Sphere Under Socialism/, merits attention and is one of the possible solutions to this problem. The author attempts to determine the place of the nonproductive sectors in the system of social production and to reveal the features inherent only in them. On the basis of the Marxist methodology of analyzing productive labor he shows how the very relations of physical production owing to the logic of their own development give rise to a new group of economic relations in the nonproductive sphere. Having studied consistently the specific nature of production relations in the nonproductive sphere, M. V. Solodkov convincingly demonstrates the interconditionality of the relations of the two spheres of the national economy and emphasizes that production relations have gone beyond physical production and are already giving rise outside of it to new relations of the same type. In our opinion, the author correctly substantiates the fact that the production relations of the nonproductive sphere are an integral part of the entire system of production relations of socialist society.

In the work it is emphasized that the nonproductive sphere under socialism is not uniform from the point of view of the production relations arising in it. One part of it, which is connected with meeting the personal demands of the workers, is involved in the production of nonmaterial wealth for the comprehensive development of all members of society, the other has no direct relationship to the realization of the goal of socialist production. The workers of the first kind of sectors of the nonproductive sphere, like the workers of physical production, are connected with society by the relation of productive labor. The remainder of the workers of the nonproductive sphere provide society with services, entering into relations of nonproductive labor. This division, in pertaining entirely to the social form, determines the social nature of the material and labor expenditures in different sectors of the nonproductive sphere.

M. B. Solodkov's monograph is an interesting and timely work of a methodological nature, which reveals the political economic essence of the complicated phenomena and processes taking place in the nonproductive sphere. It is written on a polemical level and covers a wide range of questions, but they are far from always substantiated thoroughly enough. There are also controversial assumptions in the book.

In E. M. Agabab'yan's book, "Proizvodstvo i potrebleniye uslug v desyatoy pyatiletke" /The Production and Consumption of Services During the 10th Five-Year Plan/, a different approach to analyzing nonphysical production is offered, its features and specific nature are emphasized: "The interpretation of 'nonphysical production' as a topic of economic theory and economic practice pursues the goal of distinguishing and studying specially from the point of view of economics a special area of the dynamics of social labor and economic relations in the life of socialist society, without comparing and identifying them with the economic relations with respect to the production of material wealth" (p 29).

The author regards the production relations, which form directly in the sphere of nonphysical production, as "relations of a second order," considering them to be derivatives of the economic relations of physical production, but at the same time "they are assuming greater and greater independence, have been endowed with specific traits and are playing a more and more important role in the dynamic interrelations of the entire system of economic relations of socialist society."

While identifying the specific traits of the production relations of a second order under the conditions of a developed socialist society and examining the question from the point of view of the form and content of the relations in the sphere of nonphysical production, E. M. Agabab'yan emphasizes that the exchange of labor for a part of the socialistically socialized product, which assumes in exchange the form of a wage, is typical of "nonphysical production."

The search for a gauge of the volume of services is among the most urgent directions of the study of nonphysical production. This question, in spite of the attempts of individual authors to calculate practically the "volume of services in value terms," remains unresolved. There is an especially large number of different points of view on the possibilities and methods of the "value" estimation of the production of the sectors of free services.

The production of the service sphere, in our opinion, should be calculated as the end result of the economic activity of its sectors. However, since the individual types of services are offered on different bases--free of charge or at full cost (services for a fee)--their inclusion in the total output of services has its own peculiarities. The term "free services" should not be taken literally. They are free only for the ultimate consumer, while a certain portion of the physical assets and labor, by which their social value is governed, is spent on their production (rendering).

Various opinions exist concerning the questions of estimating the amount of free services. Some researchers propose to estimate them according to the actual expenditures of the state and enterprises. In this case the amount of these expenditures is determined in different ways. Some authors limit themselves to the budget expenditures on sociocultural measures, others also include here the expenditures of enterprises and capital investments, still others include in the amount of free services the expenditures on social insurance and social security and so on.

Many suggestions have been made on the "upward adjustment" by various methods of the free services up to their full cost.[2] A number of economists[3] proposed to appraise free services with allowance for the proportion of the surplus product, which could be realized in case they required a fee. A method similar to the one proposed by V. F. Mayyer was placed by E. M. Agababyan at the basis of the calculation of the synthetic indicator of the production of services.[4] In the opinion of E. M. Agababyan, "the synthetic indicator of services in monetary terms--a kind of aggregate product of nonphysical production--is the form of the cumulative result of the effective activity of the nonphysical sphere."

The possibility of constructing a synthetic indicator of the production and consumption of services, in the opinion of a number of authors, is governed by the fact that the product of nonphysical production, not counting the physical and material form, has a certain objectivity--the specific utility of the wealth which meets various social demands. The socially necessary labor, which consists of the necessary and surplus labor, is consumed on its production. The conclusions of the supporters of this position reduce to the fact that the inclusion of a worker in social production automatically makes him a part of the aggregate labor force, typical of which is the fulfillment not only of the requirement of recovery, but also the expansion of production and consumption.

In our opinion, although this conclusion is of a debatable nature, it does merit attention. At any rate, it makes it possible to explain the different position of workers from the standpoint of participation in the formation of the resources of expanded reproduction. Surplus labor is typical of all the participants in socialist competition. The peculiarity of productive labor under socialism lies in this.

The evaluation of the surplus labor, and thereby of the total expenditures of labor as well, in nonphysical production is especially complicated. And here the most diverse, at times mutually exclusive stands are known. The methodological approach to calculating the amount of services in "Metodicheskiye ukazaniya k sostavleniyu gosudarstvennogo plana razvitiya narodnogo khozyaystva SSSR" /Methodological Instructions on Drafting the State Plan of USSR National Economic Development/ seems basically correct to us; in it, when calculating the overall value indicator of services it is proposed "to estimate the amount of services of those sectors, in which service for a fee predominates,... by the receipts of the corresponding institutions and enterprises, and the amount of services of those sectors and types of service, in which free service and service at a reduced rate predominate, by the expenditures of the state and kolkhozes on maintaining the institutions of these sectors."[5] Here, in our opinion, some clarifications are required. First, the amount of services for a fee should be comparable to the corresponding expenditures of the population, since the services rendered to enterprises and institutions are included in part in the total production of the indicated sectors. Second, it should apparently be kept in mind that the amount of free services is considered the result of the use of the assets of the public consumption funds, in which the total amount of current

expenditures on rendering the corresponding services to the population is reflected.

In studies of recent years much attention is devoted to the solution of a wide range of problems facing the sectors of the nonproductive sphere. The number of publications on problems of consumer service has especially increased. Obviously this is not by chance, since this is a comparatively "young" sector of the national economy, and problems connected with the elaboration of theoretical and methodological problems, the clarification of the socio-economic essence of personal services, the general laws of the development of the sector and its place in social reproduction, with the search for reserves for increasing the volume and improving the quality of personal services, with the search for criteria of the efficiency of personal services, as well as with the improvement of the organization of the work on planning personal services and others, continue to arise in the process of its accelerated development. Thus, in the works of A. I. Goranin "Bytovyye uslugi pri sotsializme (voprosy teorii, praktika razvitiya)" /Personal Services Under Socialism (Questions of Theory, the Practice of Development)/, M. G. Roze and M. B. Rossinskiy "Planirovaniye razvitiya bytovykh uslug (voprosy sovershenstvovaniya metodologii)" /Planning the Development of Personal Services (Questions of Improving the Methodology)/, K. V. Smirnova "Stimuly povysheniya effektivnosti truda v bytovom obsluzhivanii" /Incentives to Increase Labor Efficiency in Personal Services/ and M. G. Roze "Tseny na bytovyye uslugi" /Prices for Personal Services/ the reader can familiarize himself with the ways of posing and the solution of practically the entire group of problems which face personal services and which have now become especially urgent.

The nonelaboration of the main theoretical questions of the development of consumer service led not only to a certain belittling of its role in the national economy, but in fact also to its nonrecognition as an independent sector. According to the official classification of the sectors of the national economy of the USSR Central Statistical Administration, personal service to this day is considered a collective group and is singled out specially only conditionally "for practical purposes." The evaluation of personal service by economic theory does not fully conform to the important role which the sector plays in the national economy of the country.

The theoretical, methodological and national economic problems of personal service were the topic of study of A. I. Goranin's book "Bytovyye uslugi pri sotsializme." In it the socio-economic essence of personal services and the general laws of development of the sector are revealed and the role of personal service in social reproduction is specified. Moreover, much space is devoted to the peculiarities of scientific and technical progress in the sector, the essence of the impact of the production and consumption of personal services, the factors of growth and the reserves of the increase of the efficiency and quality of personal services. This monograph is a comprehensive study of personal services under socialism. The distinguishing of the theoretical and methodological principles of the analysis of personal services and personal service in it is of unquestionable interest. In

addition to a theoretical examination of the posed problems, the book contains concrete proposals, which makes this work especially valuable.

For the socio-economic analysis of personal service it is important to determine the nature of personal services and the production relations which arise in their production, sale and consumption, and to develop ways of solving practical problems. The difficulty is that at present there is no uniform point of view on the theory of services. The author stresses that "under these conditions it would be incorrect to set about analyzing consumer services without having determined the methodological principles of the general theory of services and service, which would make it possible not only to explain properly the specific peculiarities of personal services and personal service of the population, but also to simplify considerably both the study of specific questions of the development of consumer services and the interpretation of the results of the study" (p 30).

Concering the controversial problems of services, the authors[6] examine from the correct, in our opinion, methodological standpoint the nature of services, their role in the reproduction process, productive and nonproductive labor in the service sphere and the peculiarities of the study of this problem as applied to personal services. The authors ascribe great importance to the definition of the category of personal services, regarding it as the key point in the correct understanding of "the essence of the personal service of the population as a socially organized economic process, its significance and role in social reproduction: in creating the gross national product and the national income; in public consumption and accumulation; in the evaluation of the efficiency of the sector" (p 73).

In examining a personal service as a specific form of the manifestation of services in general, the authors stress that it "includes all the essential definitions of the general concept, but at the same time has its own peculiarities" (p 73). Further, in offering the most general socio-economic definition of a personal service, A. I. Goranin and V. A. Yakovlev write: "A personal service as a social form of the consumption of wealth is a special form of the socialization of the costs of personal consumption" (p 73). Having thoroughly analyzed personal services, they then turn to an examination of it as an economic form in the reproduction process. In this capacity the authors characterize personal services as one of the forms of the commodity product of socialist production. Here it is emphasized that "personal services are the unity of the use value and the value, the product of productive labor, they are a commodity of a special type" (p 74). But the workers engaged in personal service are assigned in the book to the sphere of productive labor, "for their labor meets both the general and the specific requirements which are characteristic of productive labor. In the sphere of personal service not only is the fund of the pay and reproduction of the workers employed in this sphere reconstructed, but a certain portion of the surplus product of society is created," which becomes the property of the entire socialist society (pp 75-76).

Therefore the consideration of the production of personal service enterprises is important when substantiating the directions of the increase of the national well-being, and practice urgently requires a determination not only of the utility, but also of the cost of personal services and their consideration in the total amount of the national income and in the income level of families. The failure to recognize this factor has negative consequences: the amount of real wealth received by the members of socialist society is understated and difficulties for the development of the sector are artificially created.

Although it is not new, the problem of classifying personal services is, as before, controversial. Therefore A. I. Goranin, in critically examining the classifications proposed by other researchers, offers his own classification of personal services, which, in our opinion, makes it possible to analyze the structure of the sector, to determine more completely the economic efficiency of its development and to characterize the quality of consumer service. It makes it possible to properly plan and take into account the results of the activity of the enterprises of the sector, to stimulate the labor of the workers, as well as to elaborate standards of the effective consumer demand of the population for personal services.

In connection with the fact that not all the assumptions set forth in the monograph are unquestionable, a number of them require additional in-depth study. This pertains above all to the methodological questions of the analysis of personal services. Imprecise formulations and annoying contradictions exist in the book (p 73). Moreover, in the work insufficient attention is devoted to one of the least elaborated problems--the problem of studying the efficiency of the sphere of personal service. This is a new and quite complicated problem, which under present conditions is assuming topical importance both from the point of view of increasing the economic efficiency of the activity of the very sphere of personal services and from the point of view of its influence on the increase of the efficiency of social production. It is expedient to continue the study of this problem.

In the book of M. G. Roze and M. B. Rossinskiy, "Planirovaniye razvitiya bytovykh uslug," the examination of the question of assigning enterprises to the personal service sphere is closely connected with the determination of the boundaries of the personal service sphere and with the concept "personal service." The authors write that "it is necessary to establish a procedure, in accordance with which in contrast to industrial enterprises there could be assigned to enterprises of personal service of the population only those, in whose sales volume of services, works and products personal services according to the custom orders of the population take up the main proportion (are, for example, not less than 70-75 percent)" (p 52). Of course, the lack of such a definition leads to a distortion of the indicators which characterize the number of enterprises of the sector and the state of development of personal service in the union republics, oblasts and cities. It is the merit of the authors that, in critically examining the Instruction on the Procedure of Compiling a Report on the Personal Service of the Population, in which jobs performed in the presence of the

customer and paid for according to the receipt might be attributed to personal services, they emphasize the erroneousness of such a determination, which is conducive to the inclusion in the concept "personal services" types of work not pertaining to them, and come to the correct, in our opinion, conclusion that one of the most important problems of improving the planning of the sector is the specification of the most important types of personal service of the population.

This monograph is devoted mainly to questions of improving the methodology of planning the development of the personal service of the population, which so far have been poorly elaborated and inadequately covered in economics literature. Much attention in it is devoted to problems connected with the clarification of the specific peculiarities of personal services, the determination of ways to improve the volume indicators of the activity of personal service enterprises and the creation of an initial basis of planning, as well as to the generalization of the experience of using the standard method of planning the personal service of the population. The problems of increasing the efficiency of the use of the fixed capital of the sector, the improvement of quality, the reduction of the cost of personal services and the increase of their profitability are also examined. Special chapters of the book are devoted to the improvement of pricing, economic analysis and monitoring of the fulfillment of the plans of serving the population.

In characterizing the established system of evaluating the results of the activity of the enterprises of the sector, the use of which has the result that they prefer to use highly profitable products to the detriment of the direct service of the population, the authors correctly raise, in our opinion, the question of distinguishing in the plans of enterprises and organizations the sales volume of services on the custom orders of the population.

In the section devoted to an important component of planning--the monitoring of the fulfillment of the plan--the authors demonstrate that it is necessary to monitor not only the correctness of the crediting of the sales volume of the main types of personal services, but also the composition of the work, since in a number of cases the invalid inclusion in the sales volume of personal services of other kinds of jobs leads to its considerable overstatement.

It must be noted that the monograph is overloaded with examples, of which there are especially many in Chapter 6, "Reserves for Decreasing the Production Cost and Increasing the Profitability of Services," and Chapter 8, "Advanced Forms and Types of Personal Services." These examples are taken at times from popular science articles and magazines, which decreases appreciably the scientific validity of the theses advanced by the authors. Not all the aspects of such important problems, which are raised in the monograph, are covered completely and thoroughly enough. Some of them are given only to raise the problem and require further substantiation. Thus, too modest a space in the work is allotted to regional aspects of the

planning of personal services. It seems that this question, owing to the possibility of overcoming the still existing gaps in the levels of service between individual regions, the city and the countryside, also merits a more extensive examination.

Considerable space in the works on problems of developing the service sphere is allotted to questions of pricing in the personal service of the population. In this connection let us examine in more detail M. G. Roze's monograph "Tseny na bytovyye uslugi," in which the problems of pricing are covered and the peculiarities of establishing and applying the prices for personal services are shown considerably more extensively and completely than in the other books. The analysis of the customary procedure and main principles of pricing enabled the author to show the differentiation of the prices for services and the management of the price list system and to cover a number of other questions.

At present the research being conducted in this area is clearly inadequate and far from conforms to its significance in the national economy of the country. The improvement of the pricing for personal services is of great importance for the successful operation of the sector under the conditions of the intensification of the material interest of its workers and the development of the material and technical base of the sector. All this attests to the urgency and complexity of the solution of the problem of improving the prices for personal services.

The author notes that the prices for the services of the enterprises of the sector are of a dual nature. While being by their structure and methods of formation wholesale prices, they are at the same time by their nature retail prices. In the book it is emphasized that "the main methods of pricing in the sphere of the personal service of the population should be based on the policy of the retail prices for consumer goods. On the other hand, the prices for personal services take into account the peculiarities of the enterprises of personal service... and should be flexible and dynamic, so as to actively influence the quality and time of the filling of orders and to stimulate the creation of the greatest conveniences for the customers" (pp 15-16).

After critically examining the existing procedure of establishing the prices for personal services, M. G. Roze analyzes some of the shortcomings of pricing, which exist in personal services. Noting the existence in a number of cases of economically unsubstantiated differences in the level of prices for the identical types of personal services in the union republics and, in the republics with an oblast division, in the krays, oblasts and cities, the author correctly writes, in our opinion, that "some differences in the level of prices for individual types of identical personal services in different regions of the country are permissible, if they are caused, for example, by a different level of technical equipment of the personal service enterprises or by other economic factors" (p 21).

Until lately the discrepancy in the level of prices for similar personal services was a consequence of the fact that up to 1965 there was no unified methodological management of pricing for personal services, this work was not coordinated, advanced, economically substantiated standards of labor and material expenditures were not elaborated centrally and there were no uniform methodological instructions on the procedure of costing services (jobs).

At present pricing in the personal service sphere is faced with important tasks. The author stresses that "the measures on improving pricing signify a radical reorganization of the entire system of pricing in the personal service sphere, the basis of which is the creation of a standard base which conforms to the present level of development of the personal service of the population. For this it is above all necessary to draw up a uniform (all-union) list of jobs for the most important types of personal services" (p 22). Such a list with the technical characteristics of the jobs and the operations constituting them is called for in the unified copies of the price lists, which are recommended to all the union republics by the State Committee for Prices of the USSR Council of Ministers. At present the problem of establishing uniform prices in the sphere of the personal service of the population is pressing, and the author indicates the expedience of examining it on the scale of the country.

The enhancement of the stimulating role of prices in improving the quality of services, raising the standard of service and reducing the time for filling orders is one of the most important tasks of pricing, which is being solved primarily by means of the differentiation of prices and the expansion of the forms and methods of differentiating the prices for personal services. In this connection in the work it would have been necessary, in our opinion, to examine in more detail the question of streamlining the price list system and improving the graphic information on prices and the procedure of applying them, since these problems are of great importance for observing state price discipline and are conducive to the most rapid solution of the problems on further improving the personal service of the population. M. G. Roze mentioned them only in passing.

The proper organization of the material stimulation of the workers of the personal service of the population plays an important role in solving the problems facing the sector. A search is being constantly made for the most effective forms and methods of stimulating labor. Thus, in K. V. Smirnova's book "Stimuly povysheniya effektivnosti truda v bytovom obsluzhivanii" much attention is devoted to questions of organizing the material stimulation of the improvement of the quality of consumer service. The author shows how the quality of personal services is taken into account in the rate system, in the bonus system, as well as in the forms of wages, which are specific to personal service--wages on a contractual basis and as a percent of the receipts. The system of economic and material incentives, which is used in the sector, still does to ensure the proper interest of the workers in increasing the level of consumer service, since the results of labor, in connection with the lack of sufficiently objective indicators of the quality of services, are taken into account mainly according to quantitative indicators.

While regarding the personal service of the population as a single functional link of the national economy, which is called upon to meet the individual demands of the workers for personal services and to serve the process of personal consumption, K. V. Smirnova stresses that the increase of the material interest of the workers of the sector in increasing the quality of services plays a special role in solving the problem of increasing the quality of personal services. The author writes that "for the successful solution of the problems facing consumer service it is necessary for the quality of personal services to become the object of deliberate regulation, the basis of the evaluation of the efficiency of individual and collective labor, which directly influences the level of pay of the workers of the sector" (p 16).

In her opinion, the establishment of the degree of utility, the extent of the satisfaction of one demand or another and the impact obtained in so doing should become an important methodological principle of determining the economic essence of the quality of services. Examining the concept "the quality of personal services" in the broad and narrow sense, K. V. Smirnova emphasizes: "In the broad sense the quality of consumer services as a sector on the whole reflects their conformity to certain public demands and to the degree of satisfaction of these demands with special use values, which personal services are. The degree of conformity of services to the specific personal demands of the workers and the degree of the satisfaction attest to the quality of the service which is rendered by a consumer service enterprise or its individual worker. Such an interpretation characterizes the quality of personal services in the narrow sense" (p 20).

At present bonuses play an important role in stimulating the improvement of the quality of personal services. However, this portion of the wage is connected with the quality of personal services by means of special indicators which do not reflect all its aspects and above all the consumer nature of the service. As a result there are often cases when workers performing services of a low quality receive bonuses. In examining the questions of stimulating the improvement of consumer service and the increase of the quality of the jobs being performed at the expense of the main portion of the wage, that is, payments of increments for the grade and skill, the author correctly believes, in our opinion, that these increments are not directly connected with the current results of labor, moreover, a negligible number of workers of the sector receive them. Therefore, the increments do not have a significant influence on the increase of the quality of personal services.

On the basis of the specific wage systems used in the sector (on a contractual basis and wages as a percent of the receipts) the significant shortcomings in the stimulation by means of them of the increase of the volumes of personal services, the improvement of the skill of workers of certain occupations and the improvement of the quality of consumer service are shown in the book. K. V. Smirnova stresses that under present conditions the improvement of the indicators characterizing the efficiency of collective and individual labor, as well as the elaboration of criteria which would make

it possible to take into the fullest account the specifics of the sector are assuming particular importance, since without the proper evaluation and accounting of the results of the labor of both the individual workers and the enterprises as a whole no economically substantiated system of stimulation can be organized. Hence the most important direction of economic research in this sector of the national economy--the assurance of the unity of the collective and personal interests of the workers in improving the end results of economic activity.

Thus, as the survey of the works on the problems of the economics of the nonproductive sphere shows, their study in recent times has been sharply intensified, which conforms to the tasks of developing this most important sector of the national economy.

FOOTNOTES

1. V. M. Rutgayzer, "Resursy razvitiya neproizvodstvennoy sfery" /Resources for the Development of the Nonproductive Sphere/, Izdatel'stvo "Mysl'", 1975; K. V. Smirnova, "Stimuly povysheniya effektivnosti truda v bytovom obsluzhivanii" /Incentives to Increase Labor Efficiency in Personal Services/, Izdatel'stvo "Ekonomika", 1975; M. G. Roze, M. B. Rossinskiy, "Planirovaniye razvitiya bytovykh uslug (Voprosy sovershenstvovaniya metodologii)" /Planning the Development of Personal Services (Questions of Improving the Methodology)/, Izdatel'stvo "Ekonomika", 1975; D. I. Pravdin, "Razvitiye neproizvodstvennoy sfery pri sotsializme (tempy, proportsii, perspektivy)" /Development of the Nonproductive Sphere Under Socialism (Rate, Proportions, Prospects)/, Izdatel'stvo "Ekonomika", 1976; M. V. Solodkov, "Neproizvodstvennaya sfera pri sotsializme (Voprosy teorii i metodologii proizvoditel'nogo truda)" /The Nonproductive Sphere Under Socialism (Questions of the Theory and Methodology of Productive Labor)/, Izdatel'stvo "Mysl'", 1978; M. B. Rossinskiy, "Sfera uslug v ekonomike razvitogo sotsializma (teoreticheskiye i metodologicheskiye voprosy)" /The Service Sphere in the Economy of Developed Socialism (Theoretical and Methodological Questions)/, Izdatel'stvo Saratovskogo universiteta, 1976; V. V. Barmin, "Analiz finansovo-khozyaystvennoy deyatel'nosti kommunal'nykh predpriyatiy" /The Analysis of the Financial and Economic Activity of Municipal Enterprises/, Izdatel'stvo "Finansy", 1976; M. G. Roze, "Tseny na bytovyye uslugi" /Prices for Personal Services/, Izdatel'stvo "Finansy", 1976; "Kompleksnyy plan razvitiya sfery obsluzhivaniya naseleniya" /Comprehensive Plan of the Development of the Consumer Service Sphere/, Izdatel'stvo "Ekonomika", 1977; E. M. Agabab'yan, "Prizvodstvo i potrebleniye uslug v desyatoy pyatiletke" /The Production and Consumption of Services During the 10th Five-Year Plan/, Izdatel'stvo "Mysl'", 1977; M. A. Abramov, "Proizvodstvo i sfera obsluzhivaniya (razmeshcheniye, vzaimosvyaz', kompleksnoye razvitiye)" /Production and the Service Sphere (Location, Interrelationship, Comprehensive Development)/, Izdatel'stvo "Mysl'", 1977; A. I. Goranin, "Bytovyye uslugi pri sotsializme (voprosy teorii, praktika razvitiya)" /Personal Services Under Socialism (Questions of Theory, the Practice of Development)/, Minsk, 1977, and others.

2. See V. M. Rutgayzer, "Resursy razvitiya neproizvodstvennoy sfery," Izdatel'stvo "Mysl'", 1975, pp 205-206.

3. "Planirovaniye narodnogo potrebleniya v SSSR" /The Planning of Public Consumption in the USSR/, edited by V. F. Mayyer and P. N. Krylov, Izdatel'stvo "Ekonomika", 1964, pp 36-37.

4. E. M. Agabab'yan, "Proizvodstvo i potrebleniye uslug v desyatoy pyatiletke," Izdatel'stvo "Mysl'", 1977, p 70.

5. "Metodicheskiye ukazaniya k sostavleniyu gosudarstvennogo plana razvitiya narodnogo khozyaystva SSSR," Izdatel'stvo "Ekonomika", 1969, p 517.

6. The indicated problems were elaborated jointly with V. A. Yakovlev.

7807
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MANPOWER: LABOR, EDUCATION, DEMOGRAPHY

NATIONAL SCHOOL RUSSIAN LANGUAGE INSTRUCTION

Moscow SOVETSKAYA PEDAGOGIKA in Russian No 4 Apr 79 pp 35-38

[Article by S. S. Shamsutdinova: "Russian in the National School"]

[Text] Russian has become the language of daily contact and cooperation here, where a historically new community of people, the Soviet people, has evolved. The party and government have set Soviet pedagogical science and our entire school system the task of further improving the study and instruction of Russian. A majority of non-Russian children really begin assimilating the Russian language in school. Russian language lessons involve not only language development, but foremost the shaping of pupils' speech skills and habits. The national school provides non-Russian pupils with the theoretical and practical principles of the language and shapes their Russian speech abilities and habits.

In the national schools of a majority of the union republics, Russian language instruction begins in the second half of the 1st grade. Russian is taught as an independent subject in each union republic national school in accordance with study plans approved by the union republic ministries of education. The number of hours per week in grades 1-10 (11) varies from 43 (Lithuania, Estonia, Moldavia) to 49 (Kirgizia). Differences are observed in the union republic study plans not only in the total hours scheduled, but also in the distribution of the study time between concentric cycle/sic/ Thus, in the Baltic republics, 7-8 hours are devoted to Russian in the primary grades, in Georgia -- 14, Tadzhikistan -- 12, and in the national schools of Russia -- 26. A comparatively small number of hours are set aside for Russian in the upper grades in the study plans of the republics of Central Asia, the Transcaucasus and Moldavia. In spite of the fact that the national schools of all union republics completed the change-over to up-dated Russian programs and textbooks in the 1976-1977 school year, the quality of the Russian language instruction, just as the degree of Russian mastery by national school school pupils, and especially rural ones, does not fully meet modern requirements. The practical orientation in Russian language training has been strengthened in the programs developed by the union republic scientific research institutes (schools) of pedagogy and approved by the ministries of (public) education. Primary attention is being paid to developing pupils'

Russian speech, to selecting language material and organizing it on a syntactical basis. These provisions are reflected most successfully, in our view, in the programs for the Latvian and Moldavian schools. But in the programs of a number of republics, especially in Central Asia, insufficient attention is paid to developing pupils' speech in the middle and upper grades, continuity between the primary and secondary training links is weak, and there is no list of speech situations in the programs of the primary, 4th and 5th grades.

New textbooks have been created and existing ones up-dated on the basis of new programs in all republics. Some are set up on a multipurpose basis, that is, to combine work on language material with reading and developing pupils' speech. Thus, the text analysis in textbooks for the Moldavian and Latvian schools is supplemented with various speech exercises. This facilitates developing various reading skills and habits and understanding the text of a letter, and it develops speaking skills. Russian language textbooks for the Latvian schools are clearly and expressly communicative in orientation. They contain comparatively somewhat briefly formulated rules, but 2-3 times as many exercises as those in similar textbooks for other republics. The new Russian language textbooks for Georgian primary grades pay considerable attention to developing pupil conversational skill based on systematic introduction of standard phrases into pupils' speaking. At the same time, Russian language textbooks for the national schools have substantial shortcomings based, in our view, on limited vocabulary repetition and a lack of creative-type assignments which would require pupils to use the language material they have studied in everyday situations, on insufficient exercises aimed at developing dialog skills and at preventing mistakes in conversational speech, and so forth.

The divergences in Russian language textbooks for the national schools of different republics probably result from the fact that, heretofore, no fundamental method of teaching Russian in the national school has been developed and that there are no single scientifically substantiated requirements for the study process; the fundamental question of training content and methods has not been resolved. Neither the textbooks nor the programs contain precise requirements as to the knowledge, skills, and habits which pupils must have after passing each study course. In a majority of the textbooks, the aim remains as before, to teach "language in general" and studying the grammatical system of the Russian language. A number of textbooks therefore have an unjustifiably large number of rules and explanations, and exercises of a mechanical, analytical nature predominate. In all textbooks, Russian language study relies on comparisons with the pupil's native language. Corresponding exercises and assignments are provided for this purpose. However, opinions still differ as to the nature of the comparison method at various stages of training in a second language. At the same time, the change-over of the national schools of the Russian Federation to standard textbooks in the middle and upper concentric cycles speaks in favor of standard Russian language textbooks. Standard textbooks with a pronounced communicative orientation, with the aim of developing the skills of understanding texts

without translation and attaining the actual goals of relating to others in Russian, which associates of the USSR Academy of Pedagogical Sciences' Scientific Research Institute of Russian Language Instruction in the National School are now working on, will unquestionably be a new contribution to developing the theory and practice of the school Russian language textbook for non-Russians. The communicative goal of teaching Russian must, in our view, determine the entire study process. The school can consider its work done in this sense if its pupils have developed the skills and habits of understanding spoken and written Russian and of expressing themselves in Russian.

The material-technical base of Russian language instruction has been improved somewhat in recent years. Many schools have changed over to the study-room system. Tape recorders, record players, slides, movie projectors and television sets have appeared in the schools. However, technical means of training are still used extremely rarely in the lessons. One reason is apparently that methods of Russian instruction using them have not been worked out. In particular, no method has yet been developed for using language-lab equipment to study Russian in the national school.

New forms of Russian instruction are being sought out in a number of republics: Russian study is being organized in preschool institutions, and they are opening up preparatory classes, schools with parallel languages of instruction, and schools and classes with intensified Russian language training. Special importance is being acquired by optional Russian language classes and by the development of work outside the classroom and outside school. At the same time, the lack of development of the scientific principles of organizing various forms of extracurricular work and intensive language study is also one reason for shortcomings in practical language training.

A study of the status of the teaching and the quality of the knowledge, skills and habits of national school pupils shows that the speaking and writing skills of schollchildren in Moldavia, Latvia, Lithuania, Armenia, Estonia and Kazakhstan have improved somewhat in recent years. However, the level of Russian speech development among rural national school pupils of the Central Asian republics, Georgia and Armenia does not always conform to program requirements. Their speech is distinguished by a poverty of vocabulary, an absen ɜ of extended and complex sentences, poor pronounciation, and a large number of grammatical errors. This is to be explained first of all by deficiencies in the training of teacher cadres. Many teachers permit serious oversights in methods of conducting Russian language lessons, are not able to subordinate the study of language theory to the tasks of developing pupils' speech, and are keen on grammatical theory but divorced from practical speech. Very little attention is paid in the lessons to shaping pronounciation habits. The ability to understand spoken Russian is not generally developed. As a result, pupils often do not understand spoken Russian in unfamiliar speech situations. There are also quite a few shortcomings in dictionary work in the lessons. New words are nearly always

explained by translating them into the native language and Russian words already familiar to the pupils are not drawn into the explanations. Resorting too much to the native language in Russian language study is typical of the schools of Azerbaijan, Uzbekistan, Turkmenia and a number of other republics. The work of the language and literature teacher, especially in rural schools, is made more difficult by the lack of well-designed and well-printed didactic material, special books for outside reading, and reference literature.

We feel the top-priority task of pedagogical science now is to develop the scientific-theoretical and practical base of Russian language instruction in national academic institutions at a qualitatively new level. Enormous experience has been accumulated in the union republics and is in need of skillful scientific generalization. This can be of great help in improving Russian language instruction. A policy has now been adopted of creating a standard Russian language instruction model for the national school (standard programs, standard study-methods complexes, and others). The indicated two directions must organically supplement each other in restructuring instruction of this subject. Good prospects for improving Russian language instruction have been opened up in connection with the development of a number of measures by the USSR Ministry of Education. They anticipate further expansion of scientific pedagogical research in the area of Russian language instruction in the national schools, the development of standard programs, a standard program for intensive language study, and standard study-methods complexes. It is being proposed that needed changes be made in the study-methods materials for preparatory classes, that recommendations be worked out for organizing a variety of work outside the classroom and outside the school, that model methods recommendations and content be prepared for Russian language instruction in union republic national preschool institutions. Appropriate steps have been outlined for further improving the training of Russian language teachers for the national schools. It has been recommended that a new study plan be developed and introduced at pedagogical institutes for the specialty "Russian Language and Literature," one which anticipates the more fundamental training of teachers in the indicated specialty, that the necessary adjustments be made in existing programs and that the study plans of pedagogical institutes and schools be reviewed with a view towards more effective teacher training and the more effective preparation of guides to work in children's preschool institutions and primary grades. Actualization of the measures outlined will permit successful implementation of the tasks of further improving the study and instruction of the Russian language in the national school.

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TRANSPORTATION

TRANSPORT IN THE USSR NORTH DESCRIBED

Tokyo MAINICHI DAILY NEWS in English 18 Jun 79 p 5

/Text/ In the Soviet Far North where permafrost and swamps, snow and winds hinder traffic, the extensive system of routes is still up to the mark. Its establishment took years, and initially the solution of many transport problems was monitored on the Taimyr peninsula.

A kilometer of the motorway in local conditions costs a million rubles. How can these "golden" kilometers be protected from the onslaught of the swampy tundra?

Which material should be used for car tires to prevent rubber from going to pieces in frosty weather? How can the roads be protected from snow-drifts and icing? How can pipelines be laid here?

Difficulties

The solution of these problems involved lots of difficulties.

For nine winter months over 100 million cubic meters of snow precipitate in the Norilsk area. Arctic winds whose speed reaches 30 meters per second blow 280 days a year.

For 47 days the sun does not appear on the horizon. Last winter, for instance, for two months, running the temperature fell there to 55°C below zero.

These are not exceptions, but the usual norms of life in Taimyr. However, the towns and townships of the peninsula never lose contacts between each other and the mainland from which everything from flowers to trunk-route electric locomotives comes there.

In 1935, when the construction of the industrial complex began in Taimyr the builders had the only trunk-route for delivering workers and cargo—the Yenisei River.

But Norilsk, the heart of the complex, was being built 120 kilometers away from the coast near the deposits of complex ores. An unprecedentedly bold decision was taken at that time: to build a narrow-gauge railway in the tundra, in many places right on the snow.

It took the first train a week to cover the 120-kilometer distance. Today the electric train moves from the port of Dubinka on the Yenisei to Norilsk within 3.5 hours.

Now not the narrow-gauge, but a standard Soviet track links Taimyr's two largest

cities. In the daytime and in the nighttime heavy-duty trains and passenger electric trains ride there.

The winter of 1979 added a new page to the history of Taimyr. Soviet nuclear-powered anad diesel-electric icebreakers made possible round-the-year navigation in the western area of the North Sea route. Ten years ago this project looked like a fantasy, but today it is a reality.

The design of a 300-kilometer gas pipeline from the Messoyakha River, where deposits of low-cost gas were discovered, to Dudinka and Norilsk once seemed unrealistic too. When it was constructed, pipes were not buried, but placed with the assistance of helicopters on special ferroconcrete piles.

Now the construction of the third string of this gas pipeline is coming to a close. This has favorably affected the environment and resulted in solid economic benefits.

Various transport facilities operate in the north. TU-154 jetliners and IL-76 cargo-carrying jumbo planes link Taimyr with Moscow, Krasnoyarsk, Leningrad, Sochi and other Soviet cities.

With Wooden Boards

A dense network of domestic airways within Taimyr has also developed. More and more highways appear in the tundra. Each winter to protect the highways from snow-drifts the northerners surround them with wooden boards of special design.

The low-draught river-going icebreaker Captain Chechkin built in Finland on Soviet order will make navigation on the Yenisei possible all the year round. So far the harsh climate allows ships to sail on this major waterway only 130 days a year.

The length of the world's most northernly self-contained railway network of the Taimyr peninsula has more than quadrupled.

The experience accumulated during its formation is now used in many regions of the Soviet and foreign north. Design work has been initiated to link the Taimyr railways system with the trans-Siberian railway.

It is difficult and costly to set up transport arteries in areas which lie beyond the Arctic Circle, but the north cannot be developed without this. (APN)

CSO: 1812

TRANSPORTATION

ACCOUNTING IN SEA TRANSPORT

Moscow BUKHGALTERSKIY UCHET NA MORSKOM TRANSPORTE in Russian signed to press 27 Oct 77 pp 3-5, 23-25, 134-141, 148-150, 159-163, 284-287

[Excerpts from the book "Bukhgalterskiy uchet na morskom transporte" by A. A. Cherkesov-Tsybizov, V. N. Medov and B. A. Nosov, Izdatel'stvo Transport, 1977, 5,000 copies, 287 pp]

[Excerpts] Chapter 1. Accounting, Its Essence and Significance. §1. The Goal and Tasks of Economic Accounting in Socialist Society

Material production is the basis of social life. Continuously renewable production, distribution, exchange, and consumption processes comprise the content of the social reproduction process which requires the systematic monitoring of its progress and results. Economic processes and results are monitored by means of economic accounting which observes, records, summarizes, and studies various economic facts and operations with the aim of actively influencing the development of economic processes. Accounting is a function of economic management.

Economic accounting is thus a system that reflects, summarizes and monitors production, distribution, exchange, and consumption processes with the aim of influencing and directing them.

The content, tasks, methods, and forms of economic accounting are determined by the mode of production. Socialist accounting is fundamentally different from capitalist accounting.

In capitalist society, which is based on private ownership of the means of production and the exploitation of hired labor, economic accounting serves the dominant classes and is used by capitalists to maximize profits and to exploit the working people.

The objective of accounting in socialist society is to manage planned economic processes that are aimed at the maximum satisfaction of the requirements of society's members. Consequently, socialist accounting serves the interests of all the people.

Socialist accounting encompasses all enterprises and branches of the national economy, i. e., is carried out on a national scale and comprises a unified system of national economic accounting. In capitalist society accounting is confined to the enterprise or monopoly and a unified system of accounting on a national scale does not exist.

Under socialism accounting offers an objective characterization of the economic processes reflected by it. Under the conditions of competition with its inevitable companions -- trade secrets and production secrets -- capitalist accounting veils actual economic processes and falsifies published data on profits and on the financial status of the enterprise.

The accounting and monitoring of the activity of enterprises under socialist conditions are carried out with the direct participation of the broad masses and are public. Under capitalism workers do not have such an opportunity: they are not privy to accounting data.

The role of accounting is enhanced under the conditions of a socialist society. K. Marx noted that accounting becomes all the more essential as the production process loses its individual character and acquires a social character. V. I. Lenin indicated the importance that accounting and monitoring of production and distribution holds in socialist society. He wrote: "Socialism means keeping account of everything."* V. I. Lenin emphasized that "accounting and monitoring are the principal ingredients required for the 'smooth working,' for the proper functioning of the first phase of communist society."**

The Program of the CPSU notes the "enhancement of the role of accounting and monitoring the integrity and proper use of national wealth" during the period of creation of the material and technical foundation of communism."***

The further improvement of economic management techniques is associated with precise and timely accounting.

The main task of economic accounting is to monitor the fulfillment of the national economic plan. It must interact with the existing planning system in such a way as to monitor the fulfillment of current plans and to provide necessary data for long-range planning.

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*V. I. Lenin, "Poln. sobr. soch." [Complete Collected Works], 5th ed, vol 35, p 101.

**Ibid., vol 33, p 101.

***"Programma Kommunisticheskoy partii Sovetskogo Soyuza" [Program of the Communist Party of the Soviet Union]. Moscow, Politizdat, 1974, p 90.

Well-organized accounting at the enterprises promotes the integrity of socialist property and helps to instill a sense of thrift in society's members.

Accounting is an important means of strengthening and developing economic accounting at the enterprise level. The task of economic accounting is to monitor the proper use of material, labor and monetary resources and to ensure their thriftiest utilization.

Given the use of economic management techniques, economic accounting cannot be confined to the passive recording of facts and processes. Instead, economic accounting must actively promote improvements in the economic management of the enterprise. This task is realized through the receipt of timely information that is used for the in-depth analysis of all aspects of the enterprise's activity, for the detection and mobilization of reserves for securing the further reduction of the prime cost of production, for increasing the profitability of production, and for increasing the economic effectiveness of production.

National economic accounting provides numerical data required for studying the patterns of development of the socialist economy, for revealing and illustrating the action of economic laws.

Such are the basic tasks of economic accounting. They are interconnected and interconditional.

§Turnover Balance

Current accounting data are summarized in the turnover balance which is compiled on the basis of synthetic accounting data.

(1) Оборотный баланс _____ порта

(2) за _____ месяц

(3) Наименование счетов	(4) Остатки на начало месяца		(5) Обороты за месяц		(6) Остатки на конец месяца	
	(7) Дебет	(8) Кредит	(7) Дебет	(8) Кредит	(7) Дебет	(8) Кредит

Key:
1. Turnover balance_____of port
2. for_____month
3. item
4. Inventory at beginning of month
5. Turnover for month
6. Inventory at end of month
7. Debit
8. Credit

The equality of total debits and total credits is a specific feature of the turnover balance.

The equality of total debits and total credits at the beginning of the month stems from the fact that total debits are the assets of the initial balance and total credits are the liabilities of the initial balance.

Total turnover for debits and credits is equal due to the double-entry system (each operation is debited and credited in the same sum).

The equality of total debits and total credits at the end of the month stems from the fact that total debits are the assets of the final balance (at the end of the month) and total credits are the liabilities of the final balance.

The final remainder in the turnover balance is determined as follows. For assets: debit turnovers ($Д_о$) are added to the initial debit remainder ($Д_н$) and credit turnovers ($К_о$) are subtracted, i. e., $Д_н+Д_о-К_о=Д_к$. For liabilities: credit turnovers ($К_о$) are added to the initial credit remainder ($К_н$) and the debit turnovers ($Д_о$) are subtracted, i. e., $К_н+К_о-Д_о=К_к$.

The turnover balance has a monitoring significance. It can be used to detect the following errors in the entries:

a) the sum of operations is reflected in the debit but not in the corresponding credit or vice versa;

b) the correct sum is reflected in the debit side while the incorrect sum is reflected in the credit side or vice versa;

c) the sum of the operation is reflected twice in the debit side or twice in the credit side;

d) the remainder or turnover in the debit side of one account is entered in the credit side of another account or vice versa;

e) the remainder or turnover are incorrectly shown in the balance sheet or are entirely omitted.

All these errors cause inequalities between debits and credits in the columns of the turnover balance and therefore can be detected and corrected.

However, errors that do not cause inequalities in the turnover balance (for example, when an operation is not reflected at all; when an operation is reflected in the same incorrect sum on the debit and credit side; when the operation is reflected in the proper sum but in the improper correspondence) cannot be detected by the turnover balance.

Since the turnover balance shows in general form the remainders and turnovers for each of the accounts that characterize funds or sources, it can be used analytically. For example, on the basis of data cited in the turnover balance it can be concluded that the port's fixed capital has grown during the past month, that profits have increased significantly, that indebtedness has diminished, etc.

Consequently, the turnover balance must be operationally used to study an enterprise's economic performance. The enterprise bookkeeping balance [bukhgalterskiy balans] is drawn up on the basis of the final debit and credit remainders of the turnover balance.* The turnover balance is sometimes compiled in the form of a matrix.

Thus the turnover balance based on synthetic accounting is the summary of turnovers and remainders for all accounts designed for the monitoring of accounting entries, for compiling the balance, for analyzing the status of and alteration of economic resources.

Consolidated balance sheets based on analytical accounting (which are combined by synthetic accounting) are used to summarize analytical data.

The consolidated balance sheet based on the "Supplies" account and the "Fuel" account includes columns that indicate the quantity of inventories in physical and value terms. Nonetheless, the other consolidated balance sheets based on analytical accounting resemble turnover balances based on synthetic accounting and are executed exclusively in monetary terms. The sum of remainders and turnovers in the consolidated balance sheet based on analytical accounting must equal the remainders and turnovers of the synthetic account. Therein lies the monitoring significance of the consolidated balance sheet based on analytical accounting.

These balance sheets are also used in operational work, in inventory-taking, in analyzing economic activity since they contain useful information on the availability and movement of concrete types of economic resources and the sources from which they come.

Thus, consolidated balance sheets based on analytical accounting are summaries of turnovers and remainders for all accounts united by synthetic accounting and designed to verify the accuracy of accounting entries, to elicit the status and movement of specific types of resources.

*In the journal entry accounting system, the turnover balance is not compiled on the basis of synthetic accounting while data for the compilation of the balance are derived from the Main Ledger.

Chapter 9. Accounting of Operating Expenditures and Calculation of Prime Cost at Sea Transport Enterprises. §35. The Tasks of Accounting of Expenditures and Calculation of Prime Cost.

The accounting of expenditures and the calculation of prime cost play an important part in the implementation of measures designed to make the transport process more effective. Given the conditions of the new system of planning and economic incentives, the significance of the accounting of expenditures and the calculation of prime cost not only does not diminish but to the contrary is enhanced.

The cost accounting status of socialist enterprise requires that labor inputs and outputs be compared in monetary form. At the same time, it is an objective necessity of socialist society that inputs of social labor be systematically lowered.

Prime cost [sebestoimost'] is the major cost accounting indicator that reflects in money terms the enterprise cost of performing various works and services. The prime cost and its lowering are influenced by various factors: the volume of work performed, labor productivity, the use of fixed and working capital, the expenditure of the wage fund, etc.

The reduction of prime cost is the principal means of increasing the effectiveness of the transport process.

The target of prime cost and the lowering of prime cost is adopted by the enterprise itself (expenditures and prime cost are planned accounting indicators rather than confirmed indicators). This target motivates the enterprise collective to utilize all internal reserves.

The systematic lowering of the prime cost of shipping and other works leads to the lowering of rates charged for these services and consequently reduces the prime cost of production in the national economy. The basic tasks of expenditure accounting and prime cost calculation are:

--the prompt, complete and accurate description of expenditures for the various types of works and services performed by sea transport;

-- the monitoring of the proper utilization of material resources, monetary funds and labor expenditures in the shipment of cargo and passengers in comparison with the norm;

--the acertainment of actual expenditures according to vessel, structural subdivision or enterprise section in securing the proper organization of internal cost accounting operations;

-- the verification of the fulfillment of prime cost plans and the detection of reserves for reducing expenditures;

-- the construction of a system of expenditure accounting that will ensure the most accurate calculation of prime cost for various types of works and services for various items of expenditure and that will employ the proper principles for distributing indirect costs, work-in-process, and unit costs of concrete products.

Given the conditions of the economic reform, it is essential to evaluate not only the results of economic activity -- profit, profitability, net earnings from foreign navigation, etc. -- but also the factors upon which they depend, i. e., the performance of planned volume of work, resource utilization, the level of labor productivity, and the observance of expenditure economy programs. It is therefore essential that we have routine and periodic accounting and economic analysis of these expenditures especially for calculated items, i. e., that we analyze the prime cost of shipping and other works and services performed by sea transport.

In order to monitor on a systematic basis the fulfillment of plan targets regarding the lowering of prime cost, there must be unity in plan indicators and expenditure indicators and in the principles and objects of prime cost calculation. The prime cost of shipments and other works is determined by summing all expenditures for the ex post period and by dividing these expenditures by the volume of work performed.

The prime cost calculation units in sea transport are:

for shipping lines -- expenditures per 10 ton-miles and 10 passenger-miles, and 10 reduced ton-miles for various types of navigation;

for loading and unloading operations in port -- expenditures per physical ton of loaded or unloaded cargo;

for transport operations performed by vessels in the port fleet -- expenditures per 10 ton-miles;

for seaways administrations -- expenditures per cubic meter of dredged soil.

Prime cost is not calculated for "Inflot" agencies or for ASPTR.

§36. Operating Expenditures and Their Classification

Operating expenditures are classified according to their economic content, type of production, mode of inclusion in the prime cost calculation; according to the plan (depending on changes in the volume of work); and according to the ex post period.

In terms of their economic content, operating expenditures are classified as follows:

--expenditures of productive working capital (supplies, fuel, power);

--expenditures on the replacement of depreciated fixed productive capital (amortization of fixed capital);

--basic and additional wages and witholdings paid into the social insurance fund;

--miscellaneous expenditures.

It is necessary to classify expenditures according to their economic content in order to compile the prime cost plan, to coordinate the prime cost plan with other sections of the plan (labor, material-technical supply, etc.), to calculate norms for working capital, and to analyze its turnover time. Summary data on the economic content of operating expenditures are also used to analyze the structure of operating expenditures.

In accordance with the general classification of operating expenditures according to their economic content, each ministry -- after taking into account the specific features of the given branch and the requirements of the prime cost calculation -- establishes a central list of items of expenditure to be embraced by analytical accounting.

The following items of expenditure in analytical accounting have been established for the basic (operating) activity of sea transport.

The fleet: (1) wages; (2) social insurance withholdings; (3) collective food rations; (4) payments in foreign currency in lieu of per diem; (5) fuel; (6) supplies and depreciation of low-cost inventory; (7) routine yard repair; (8) routine repair performed by ship's crew; (9) depreciation of fleet; (10) navigational costs; (11) channel fees; (12) expenditures on the maintenance of management; (13) general operating costs; (14) miscellaneous expenditures; (15) cost of feeding passengers; (16) stevedoring charges; (17) ship leasing costs; (18) cost of emergency repairs; (19) additional payments in foreign currency.

Ports: (1) wages; (2) social insurance withholdings; (3) fuel and electric power; (4) routine repair; (5) depreciation of fixed capital; (6) supplies and depreciation of low-cost inventory; (7) expenditures on maintenance of control gear; (8) general operating costs; (9) miscellaneous costs; (10) emergency repairs.

In the case of seaways administrations, ASPTR, and "Inflot" agencies lists of items of expenditure for analytical accounting are similar to the lists cited above.

Expenditures for various types of production are classified in accordance with the commonly accepted classification of types of production: basic, auxiliary and nonindustrial.

Basic production is construed to mean production (work or services) for which a given enterprise was established. Basic types of production in sea transport according to basic (operating) activity are: for shipping lines -- the shipment of cargo and passengers; for ports -- loading and

unloading operations and the servicing of transport vessels; for seaways administrations -- dredging operations; for ASPTR -- salvaging and ship-raising operations; for "Inflot" agencies -- the servicing of foreign ships in Soviet ports.

An enterprise's auxiliary production is understood to mean production that serves basic production. Auxiliary production in sea transport according to basic (operating) activity includes services provided by: machine shops, water supply facilities, design offices, motor base repair teams, repair and construction administrations, computer stations, offices, etc.

Nonindustrial production is production primarily designed to serve the needs of the work force of the basic enterprise.

Nonindustrial production facilities include housing and public utility facilities, sewing and other consumer service shops, subsidiary farming, and sociocultural institutions.

Special forms are stipulated for expenditure accounting for various types of production facilities in the accounting plan (No 130) ratified by the USSR Ministry of Finance in agreement with the USSR Central Statistical Administration on 30 May 1968: for basic production facilities -- depending on type of activity; for auxiliary production facilities -- Form No 23 ("Auxiliary Production Facilities"); for nonindustrial production facilities -- Form No 29 ("Nonindustrial Production Facilities and Farms"). Two forms -- Form No 22 ("Expenditures on the Operation of Transport") and Form No 32 ("Loading and Unloading Operations in Transport") -- are used to take account of the basic (operating) activity of sea transport according to basic production facilities.

According to the mode of inclusion in calculations of prime cost, expenditures are classified as direct and indirect.

Direct expenditures are expenditures that can be imputed to prime cost directly from the primary document.

Indirect expenditures are expenditures which, in the calculation of the prime cost of individual goods and services, cannot be directly imputed from the primary document to a specific type of work or service and which are distributed among them in proportion to a given yardstick.

Indirect expenditures in sea transport are for the most part counted on Balance Form No 26 ("General Operating (General Production) Expenditures"). Form No 26 establishes the following list of items of analytical accounting of expenditures for basic (aoperating) activity on a centralized basis.

Administrative costs: (1) wages; (2) social insurance withholdings; (3) official travel and moving costs; (4) office and printing costs; (5) postal, telegraph and telephone costs; (6) building maintenance: (a) heating, lighting, water supply, etc; (b) janitorial costs;

(7) routine repair of buildings, low-cost inventory and equipment; (8) transport costs: (a) maintenance of passenger vehicles; (b) cost of urban transit; (9) miscellaneous expenditures.

General operating costs: (1) personnel training: (a) wages plus social insurance withholdings from teachers, trainees and service personnel; (b) the maintenance of full-time officer candidates; (c) visual learning aids; (d) office costs; (e) miscellaneous expenditures including scholarships; (2) amortization deductions from on-shore fixed capital that are not directly reflected under the heading of amortization; (3) communal services for for dining facilities, trade union organizations, technical centers, safety engineering facilities, and children's institutions including the repair of their buildings; (4) expenditures on division II measures; (5) centralized withholdings (maintenance of the Main Computer Center of the Ministry of the Maritime Fleet, etc.); (6) expenditures on local rationalization and invention; (7) dissemination of safety engineering information; (8) inventorying and registration of ships; (9) withholdings paid to the minister's fund (0.05 percent of the wage fund); (10) withholdings paid to the trade union (0.15 percent of the wage fund); (11) court and arbitration costs; (12) settlement of injury suits; (13) social insurance withholdings from bonuses paid from the material incentive fund; (14) services of computer offices and stations, information and computer centers, etc; (15) maintenance of the editorial staff of a large-edition newspaper; (16) general operating costs; (17) savings from reductions in the size of the administrative staff.

With respect to the plan, expenditures are classified as planned and unplanned. Expenditures counted in forms 22, 23, 26, 29, and 32 are for the most part planned; unplanned expenditures are counted in the special Form No 99 ("Profits and Losses").

Expenditures are classified as conditionally-constant and variable depending on change in the volume of works and services.

Conditionally-constant expenditures are expenditures that are entirely or primarily independent of the volume of works and services. They include: the wages of engineers, technicians and employees; expenditures on the maintenance of buildings and structures, on fuel and power for heating and lighting, etc.

Variable expenditures are expenditures that grow more or less in proportion to the increase in the volume of works and services performed. Variable expenditures include fuel, supplies, wages of seagoing personnel and production workers including bonuses for the fulfillment of trip targets and for the overfulfillment of the output norm in ports, navigation costs, etc.

With respect to the ex post period, expenditures are classified as expenditures of the current ex post period and future periods, as scheduled (vis-a-vis the ex post period) and expenditures of past years that become evident in the ex post year.

Expenditures of the current ex post period include expenditures incurred in the current ex post period that are to be imputed to the prime cost in the same ex post period.

Expenditures of future periods are expenditures made in the current period at the expense of future expost periods that are to be imputed to prime cost within two years or -- with the consent of the USSR Ministry of Finance and the USSR Central Statistical Administration -- within four years*. Expenditures of future periods are counted in Form No 31 ("Expenditures of Future Periods."

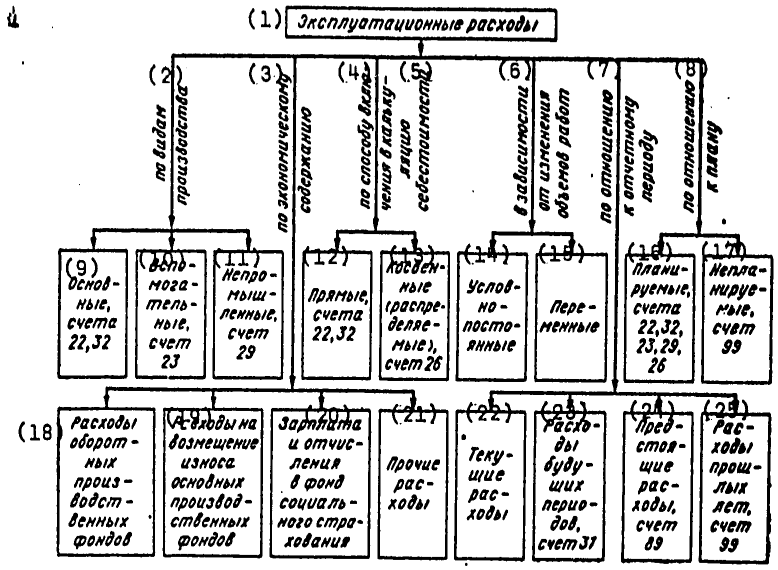

Fig. 8. Classification of Operating Expenditures

Key:
1. Operating expenditures
2. according to type of production
3. according to economic content
4-5. according to mode of inclusion in prime cost calculation
6. depending on change in volume of work
7. vis-a-vis ex post period
8. vis-a-vis the plan
9. Basic (forms 22, 32)
10. Auxiliary (Form No 23)

*The period is fixed by the accounting plan (No 130) ratified by the USSR Ministry of Finance in agreement with the USSR Central Statistical Administration on 30 May 1968.

11. Nonindustrial (Form No 29)
12. Direct (forms 22, 32)
13. Indirect (distributed; Form No 26)
14. Conditionally-constant
15. Variable
16. Planned (forms 22, 32, 23, 29, 26)
17. Unplanned (Form No 99)
18. Expenditures of productive working capital
19. Expenditures on the replacement of productive fixed capital
20. Wages and withholdings paid into the social insurance fund
21. Miscellaneous expenditures
22. Routine expenditures
23. Expenditures of future periods (Form No 37)
24. Scheduled expenditures (Form No 89)
25. Expenditures of past years (Form No 99)

Scheduled expenditures include expenditures that were not actually made in a given ex post period but that must be included in the expenditures of the ex post period in order to reflect correctly the prime cost of works and services. Scheduled expenditures are counted in Form No 89 ("Reserve of Scheduled Expenditures and Payments").

With respect to basic (operating) activity, scheduled expenditures are for the most part expenditures incurred by ships in foreign navigation and intercoastal navigation in connection with voyages that have been completed but for which the documents have not arrived at the time the quarterly and annual reports are compiled. For such expenditures by ships, the reserve that must be maintained in the following quarters is counted in Form No 89 while actual expenditures are counted in Form No 22 according to the general procedure.

Expenditures of past years -- which are ascertained and paid in the ex post period -- are usually counted in Form No 99 ("Profits and Losses").

The classification of expenditures in terms of the ex post period is necessary for the correct calculation of the prime cost of works and services performed in the ex post period.

On the basis of the foregoing, we can compile a chart of the classification of operating expenditures (Fig. 8).

§42. Income Accounting in Foreign Currency

Foreign currency receipts from sea transport activity have a significant influence on improving the country's balance of payments.

Under the conditions of the new system of planning and economic incentives, net proceeds from foreign navigation and income in foreign currency have become basic planning indicators for many sea transport enterprises and organizations. Considering the fact that sea transport for the most part ships foreign trade cargo and exports transport services, all its basic activity is essentially directed toward increasing foreign currency receipts.

For this reason, sea transport enterprises attach exceptionally great importance to the correct accounting and monitoring of the receipts of income in foreign currency, to their economic analysis, to the search for reserves for increasing incomes and for reducing expenditures in foreign currency.

Sea transport enterprises count income in Soviet and foreign currencies separately. The system of accounting forms usually establishes special items and subaccounts so that incomes in Soviet and foreign currencies can be counted separately.

Shipping lines count incomes in foreign currency separately: for the Soviet transport fleet, for foreign chartered ships and for the bareboat charter fleet.

For each type of fleet, Appendix No 1 is compiled for Form B-3 ("Report on Incomes and Expenditures for Completed Foreign Navigation Voyages"). The following procedure has been established in order to reflect correctly in accounting documents incomes and expenditures in foreign-currency rubles in foreign navigation.

No later than the fifth day of the month following the ex post month, the planning division of the shipping line submits the following documents to the financial-foreign currency division and the bookkeeping department:

--a document that indicates for each ship the date of the beginning and the end of voyages that are completed in the ex post period and that are to be included in the bookkeeping report on completed voyages;

-- a statement of voyages carried over to the time following the ex post month indicating for each ship the dates on which the voyage began and ended, ports of call, and the character of operations in those ports.

Information on the beginning and end of completed and carried-over voyages upon which captains have not yet submitted their reports is submitted by the operational service to the planning division of the steamship line. Based on operational data, the information is submitted no later than the third day of the month following the ex post month.

On the basis of data contained in the document and the statement, the financial-foreign currency division submits a monthly report on income in foreign currency and a separate report for carried-over voyages. It submits these reports to the bookkeeping department so that they can be reflected in the report on income in foreign currency and expenditures on completed voyages in foreign navigation (Appendix No 1 to Form B-3) and on carried-over voyages in the appendix to the balance on basic (operating) activity (Form B-1).

Income from foreign shipping for which accounting terms have not been established and for which forms have not been submitted for this reason must be included in the accounting system on the basis of the calculations of the commercial and financial-foreign currency division coordinated with the planning division.

In the case of voyages for which the shipping line has not received the pertinent documentation at the time the report is compiled (documentation confirming actual expenditures in foreign currency), these expenditures are estimated on the basis of expenditures for similar voyages or on the basis of other data.

When in the ex post period, we find incomes and expenditures that relate to foreign shipments of the past (quarter or year), that were not counted in good time for reasons independent of the shipping line, or that result from the correction of incomes and expenditures for voyages for which they were counted conditionally due to the absence of the appropriate documents, the indicated sums must be included in the accounting for the corresponding items of income and expenditure for the quarter in which they were established.

In Appendix No 1 of Form B-3, income in foreign currency is reflected according to type of shipment (dry cargo, oil, passengers) and type of cargo owner (associations belonging to the Ministry of Foreign Trade, miscellaneous organizations, foreign charterers).

Separate distinctions are also made for income: for ships leased to foreign charterers and cargo owners; for miscellaneous income; and for demurrage.

Miscellaneous income reflects receipts in foreign currency resulting from the participation of ships in the transport fleet in work associated with rescuing and aiding foreign ships suffering calamity; dead freight obtained from foreign charterers as compensation for the loss of income from shipping and other income for services and works performed by the transport fleet in foreign navigation.

Foreign currency income and expenditures that are not directly related to foreign shipping are reflected in Appendix No 2 to Form B-3 ("Report on Foreign Currency Incomes and Expenditures Not Included in Appendix No 1 to Form B-3"). The report is compiled on the basis of accounting data of shipping lines (fleet administrations) and the ex post data of subordinate enterprises. To this end, the accounting plans of shipping lines and subordinate enterprises make provision for special items in analytical accounting and in the subaccount (items of income and expenditure in Appendix No 2 to Form B-3). Let us explain some of these items.

The item "Services of the Port Fleet and Incomes From Servicing Foreign Ships" reflects income derived from:

--services rendered by the auxiliary-service port fleet (tugboats, launches, and other craft);

-- opening and closing holds on orders from ships' captains;

--fabrication and installation of shifting-boards;

--summoning a surveyor, bagging cargo upon orders from ships' captains;

--providing slings for use in loading lumber;

--rental of mooring lines and ladders;

--installation and use of telephones on ships;

--keeping fire watch on board tankers or dry cargo ships with highly flammable or explosive cargo with the exception of instances when fire watch is not indicated;

--supplying ships with fresh water;

--idle time of manpower at the fault of the ship and overtime work of port personnel in connection with the arrival or departure of ships, etc.

The item "For Agents' Services to Foreign Vessels and Other Services Rendered by "Inflot" Agencies" reflects income for services rendered directly by "Inflot" agencies (for forms, motor vehicles, launches, etc.).

The item "Miscellaneous Incomes" reflects income for services rendered by the navigation office, by the thermotechnical laboratory, by laundry services, etc.

The items "Sale of Oil-Distillation Residues" and "Sale of Other Physical Assets" reflect income for commodities and supplies sold to foreign vessels for the most part by services of the materials and equipment supply departments of shipping lines.

The item "Sale of Commodities by Torgmortransy" reflects income from the sale of:

--foodstuffs to foreign vessels by bases for supplying seagoing personnel;

--various commodities to Soviet seamen on foreign navigation ships by special stores.

A special feature of the accounting of incomes and expenditures in foreign currency is the fact that the calculation of income, the monitoring of its receipt, the processing of primary documents, and certain accounting functions are the responsibility of the financial-foreign currency division, of the commercial division, and partly of the shipping service and the fleet traffic service. The bookkeeping department receives completed documentation from these subdivisions .

Considering the importance of income accounting in foreign currency, shipping lines -- in addition to bookkeeping records -- keep operational and statistical records on this currency.

Operational accounting of income is conducted on the basis of ship dispatching reports by the shipping service and fleet traffic service. Operational accounting of income is conducted for ships and voyages. This accounting indicates port of origin and port of destination and lists cargo according to a consolidated nomenclature. Operational accounting data are used to compile operational statistics on the basis of forms DM-1 and DM-3.

Income statistics are kept by the economic planning division based on freight documents and data of the shipping service and fleet traffic service. They are kept on ships and voyages. They indicate port of origin and port of destination; type of navigation (export, import, traffic between foreign ports); types of cargo owners (Ministry of Foreign Trade, State Committee of the USSR Council of Ministers for Foreign Economic Relations, GIF; a separate distinction is also made for lumber shipments to Great Britain and the Netherlands); and types of shipment (cargo, passengers). Statistical accounting data are used to compile the appendix to the statistical form M-10 "Report on Foreign Navigation Shipments, Incomes and Expenditures in Foreign-Currency Rubles."

It should also be noted that the financial-foreign currency division keeps special accounts on all foreign currency incomes and expenditures.

Foreign currency incomes and expenditures are also reflected summarily in monthly financial reports (No FN-1 and FN-2). The financial report based on Form No FN-1 is compiled by shipping lines, ports, and other enterprises (organizations) on the basis of basic (operating) activity of the Ministry of the Maritime Fleet. Financial reports based on Form No FN-2 is compiled by "Inflot" agencies subordinate to V/O "Sovinflot."

Indicators in financial reports on foreign currency incomes and expenditures must correspond to accounting statistics.

Table of Contents

5013
CSO: 8144 /1357

TRANSPORTATION

HIGH QUALITY ROADBED FOR THE BAM URGED

Moscow PUT' I PUTEVOYE KHOZYAYSTVO in Russian No 2, 1979 pp 15, 16

/Article: "High Quality of BAM's Roadbed is Needed"/

/Text/ A session of the Roadbed Committee of the Scientific Technical Councils of the MPS /Ministry of Railroads/ and Mintransstroy /Ministry of Transport Construction/ was held at the Ul'kan Station on the Baykal-Amur Trunk Line (BAM). More than 120 representatives of 53 organizations took part in the activities of that session. The discussions covered the implementation of the resolutions of the Committee sessions held in Chita, Tynda and Urgal, and proposals for further improving the quality of operations.

It was pointed out that recently the engineering-geology inspections preceding the planning of excavations and embankments have improved.

The pool of high-productivity drilling machinery has been complemented. The drilling is combined with electric geophysical exploration. The design institutes have strengthened auctorial supervision over the operations and as of 1978 on the initiative of the BAM Construction Directorate, certification of the roadbed is underway.

On the track-joining sectors preference is given to variants of shifting the track in the direction of the river so that slope deformations would not adversely affect the embankment. The projects as a rule specify the sequence, duration, time, and rate of implementation of preparatory operations and the construction of water drains and shoring-up operations. The quality of roadbed construction has improved and the volume of experimental construction has increased. Three snow-avalanche barriers have been built on the Baykal and North Muyskiy mountain ranges.

Scientific research into further improvements in the quality and efficiency of construction of defect-free track roadbed is underway. The mechanized construction columns and trusts have organized laboratory posts and central laboratories for quality control.

The MIIT /Moscow Order of Lenin and Red Banner Order of Labor Institute of Railroad Transport Engineers/ has, in collaboration with the East Siberian and Sverdlovsk railroads, developed an experimental system for track maintenance in the post-construction period which is currently being introduced on instructions from the Ministry of Railroads on three sectors of the East Siberian Railroad as well as on the Tynda Pilot Showcase Section whose experience will be emulated on other newly opened BAM sectors. The Bamstroyput' /Baykal-Amur Trunk Line Track Construction Administration/ has formulated proposals concerning the track maintenance standards during the interim track-sector operating period.

At the same time, certain of the Committee's recommendations still have not been implemented. Shoring-up operations and the construction of water drains still lag greatly behind schedule. The water drains are in certain cases built after the excavations are made and embankments constructed with deviations from the design. Strange as it may seem, the construction of the roadbed is financed as a basic operation, whereas the construction of water drains is financed as an ancillary operation. This is a major reason why sections on which water drains still have not been built are not infrequently accepted for temporary operation.

Sometimes the institutes issue and the BAM Construction Directorate accepts incomplete excavation and embankment designs which do not provide for water drains and shoring-up operations: this also is chiefly due to the improper financing procedures.

In some places the sequence and schedule of operations is not followed and corrugated pipe is laid without prior adequate compacting of the base and earth of embankments. The deliveries of reinforced-concrete water-drainage chutes are limited. Soil compaction is poorly organized; there is not enough equipment available for this purpose, and the available equipment is inadequately utilized.

The construction subdivisions have not completed setting up permanent brigades for the maintenance of the roadbed, of water drains and of other drainage and shoring-up structures immediately following their construction. This is an important potential for saving resources which, if exploited, will prevent having to redo the work already done.

Standards allowing for the special features of BAM construction and for the design experience thus gained have not been drafted so that as a result the institutes receive different solutions for the same conditions.

The track maintenance standards developed by the Tynda Temporary Operations Division have not been taken under consideration.

The participants in the Session adopted recommendations pointing out, in particular, that the paramount task of designers, builders, the client and operators is to improve in every way the quality of construction and

maintenance of the roadbed. The corresponding organizations should implement the designs rigorously, follow the sequence and rate of operations, and assure adequate earth compaction.

The roadbed should be built on a year-round basis, while the excavations and drains in ice-saturated soils that shift upon thawing should, as a rule, be constructed and shored up in winter prior to the thawing season.

To save resources, increase labor productivity, and accelerate work, roadbed maintenance should be organized immediately after the roadbed is built. To this end the establishment of permanent specialized subdivisions for this purpose should be completed more rapidly.

To preserve the permafrost on ice-saturated subsiding soils, the moss cover should not be disturbed. On sectors with high-temperature thin permafrost cover the roadbed is best built in summer so that the embankments would subside mainly during the construction period itself.

The examination of proposals concerning track maintenance standards with respect to temporary operation should be speeded up.

The Glavtransproyekt Main Transport Design Bureau and the design organizations should allow for changes in natural situation during construction, and complement the designs of complex sectors with instructions on the organization and technology of operations as linked to environmental-conservation measures. They also should issue blueprints covering the complete construction of the roadbed inclusive of the drains and shoring-up structures, improve the quality of research into freeze-and-thaw sections, and conduct more detailed geologic-engineering studies on sites of deep excavations with special attention to be paid to the structure and properties of rocks so as to select a rational excavation cross section and excavating techniques. The suitability of reserve, quarry, and excavation soils for the construction of embankments should be more correctly evaluated.

The designs should provide for an organized passage of water between the artificial structures of the railroad line and the motor highway, with a corresponding layout and fortification of watercourse beds, and assure, as a rule, the proper alinement of bridge and pipe structures.

Recommendations for intensifying auctorial supervision over roadbed construction, tightening the requirements for the satisfaction of supervisory instructions, and developing designs of cone-shaped reinforced-concrete semitubular drain chutes have been issued.

The BAM Construction Directorate should intensify supervision over the quality of the roadbed, prevent revisions of design solutions without prior coordination with corresponding organizations, improve technical supervision over the conduct of implementation records, monitor more closely the observance of

measures for natural conservation, assure the accomplishment of the tasks posed to the Tynda Pilot Showcase Section, and develop an optimal system for track maintenance as well as norms for the consumption of labor, materials and equipment.

The Main Technical Administration of Mintransstroy, the Scientific-Technical Council of the Ministry of Railroads, the scientific research organizations and higher school, and the Orgtransstroy are advised to assure a prompt and high-grade fulfillment of scientific research plans, to provide recommendations for year-round roadbed construction as a function of local conditions, and to tabulate the data on the availability of machinery on the track sections of the temporary operations division.

The scientific research organizations and higher schools of the Mintransstroy and the Ministry of Railroads should keep under observation discrete roadbed features under complex conditions and draft recommendations for design improvements.

The Glavsnab, the Glavstroyprom and the Glavstroymekhanizatsiya should organize the production of cone-shaped reinforced-concrete semitubular drain chutes in accordance with the Mosgiprotrans /Moscow State Institute for Transport Construction Design/ design and equip the corresponding subdivisions with vibration-compacting machinery for compaction of embankments (in, among others, places with little elbowroom) as well as with BTS-75 drilling machines and mobile soil laboratories.

To shore up the roadbed slopes and water drains, seeds of perennial grasses growing under arid climatic conditions should be used.

The Main Technical Administration of the Mintransstroy should transfer from ancillary to basic category of financing the operations involved in the construction of water drains.

1386
CSO: 1823

TRANSPORTATION

WIDE APPLICATION FOR LINEAR ELECTRIC MOTORS DEVELOPED

Tokyo THE DAILY YOMIURI in English 4 Jun 79 p 5

[Text] The special design bureau in Kiev, capital of the Ukraine, is a leading Soviet organization creating linear electric motors. It has worked out over 40 types of such engines of various capacities.

The stator of the linear electric motor (magnetowire with windings supplied by an AC source) is at the bottom of the carriage. The role of the rotor is played by a metal plate fixed on the bed of a flyover. When such an engine operates, a travelling electromagnetic wave is generated which ensures the carriage's onward movement without any transmission mechanisms.

A carriage on magnetic suspension set into motion by a linear motor designed in Kiev has recently passed trials with flying colors. It was created specially for the USSR's first passenger line of electromagnetic transport the construction of which is to be started in Alma Ata, capital of Kazakhstan, in 1979.

The linear electric motor is not a novelty--it was invented at the end of the 19th century. Today, specialists believe, we witness its revival.

"The matter is that for long this engine, unlike the conventional one, has not been applied." Vasily Shinkarenko, deputy head of the Kiev design bureau for research, explained. "But during the past 20 years specialists' attention has been drawn to it. Such an engine opens up the opportunities for the considerable increase of the speeds of ground transport and its use in transport and in industry is promising. In the Soviet Union over 40 research and design organizations are tackling problems of the theory and the design of linear electric motors.

"The traditional 'wheelrail' system now hinders the growth of speed of railway transport," Shinkarenko went on to say. "At a speed of about 300 kilometers per hour the cohesion between the wheel and the rail is violated and the wheel begins to vibrate and skid. Magnetic suspension

or air cushion make it possible to do away with wheels, but in this case the ordinary electric motor cannot be used. It must be replaced by the linear motor.

"During the testing of an experimental carriage with a linear electric motor in Japan a world speed record for this type of transport has been set--347 kph. The Kiev design bureau has built engines making it possible to develop a speed of 450 kph. Incidentally, works by designers of the Kiev bureau have been patented in the U.S., Western Germany, Japan, Great Britain, France, Italy and other countries.

"The merits of linear motors are not limited to their capacity to ensure high speeds. They are reliable and noiseless and can easily overcome steep gradients. The sphere of their application is not restricted to flyover transport. They can be employed, for instance, in conventional electric locomotives for providing additional traction at upgrades.

"Many engines designed by Kiev specialists are already used in various branches of the national economy. At the experimental section of the Chaplino granite open-cast mine (in central Ukraine) a train of trucks is being tested. It is driven by a traveling electromagnetic wave and remotely controlled. The use of such trains instead of automobiles at the opencast pit will triple labor productivity in the transportation of cargoes and will reduce the cost of haulage by 50 percent."

The female workers of the Kiev Kievlyanka knitted goods factory have become convinced of the merits of the linear motor. A transport system of a shuttle type--the Pulsar--operates here. It delivers material to workplaces and ready-made products to the storage. The Pulsar has helped to cut the losses of working time and to raise labor productivity.

A roller conveyer driven by a linear motor has been working for about five years in the pipe welding shop of the Shdanov metallurgical combine. Thanks to this installation the output of pipes by a single welding unit has been raised by 2,000 tons per year.

The linear electric motor will be given a new job in metallurgy. Transport means with the conventional drive are slowly accelerated and not always ensure the prescribed rhythm of the delivery of ingots. The application of linear motors will make it possible to accelerate ingot carriers faster, to increase their speed and to reduce their mass by 67 to 75 percent. The Kiev special design bureau has produced several types of engines for these purposes.

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