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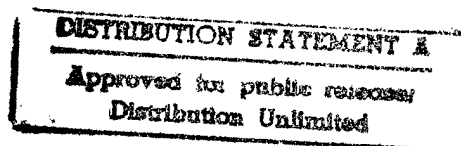
19 October 1982

USSR Report

HUMAN RESOURCES

No. 65

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LABOR

USSR GOSSTROY CALLS FOR TOP LABOR EFFICIENCY

Moscow MEKHAIZATSIIYA STROITEL'STVA in Russian No 4, Apr 82 pp 2-6

[Article by A.D. Deminov, first deputy chairman of the USSR Gosstroy, entitled "Economizing Labor Outlays"]

[Text] The 26th CPSU Congress devoted much attention to increasing productivity and to economizing material and labor resources. Production increases to be reached during the 11th Five-Year Plan are basically to be the result of production intensification and an increase in labor productivity.

Intensification is first of all a more efficient use and perfection of existing potential, an improvement of work quality and of the final product.

Basically this happens because economic growth is ensured by increasing labor productivity. During the 1st Five-Year Plan this caused a 51 percent increase in industrial output, during the 5th Five-Year Plan a 68 percent increase, during the 9th an 80 percent increase and during the 10th Five-Year Plan a 75 percent increase. The task during the 11th Five-Year Plan is for all industrial growth to be a result of an increase in labor productivity, this with the same amount of workers or even less.

The task is difficult but attainable. Our country has a strong construction base which has the necessary technology and qualified personnel.

Suffice it to say that in construction more than 600,000 units of heavy machinery and equipment are being used at one time; here there is much room whereby work may be improved.

The decisions reached at the November 1981 Plenum of the CPSU Central Committee have provided a new and strong impulse for the development of construction work, this in fulfillment of the decisions reached at the 26th CPSU Congress. The way towards developing factors of intensity found its expression in the social and economic development plans for the USSR in the years 1981-85 and in 1982.

Particular attention in the five-year plan was given to increasing returns on capital investment. During the 11th Five-Year Plan it will reach R700 billion, an amount almost equal to capital investments during the first 50 years of the existence of the Soviet state.

Increasing the returns on capital will entail the following: a lessened dispersion of capital investments, a shortened construction time for undertaking and projects and a decreased amount of unfinished construction. During the 11th Five-Year Plan the amount of fixed capital to be made liquid will exceed the amount of capital investments (R627 billion to R618 billion according to centralized sources) for the first time in our country's history.

Another important step in increasing returns on capital investment will be the reconstruction and technical retooling of existing enterprises. This will happen as fewer new enterprises are built. Capital investment for technical resupplying during the 11th Five-Year Plan will increase by 21 percent, while its specific share of expenditures on production construction will be 32.5 percent.

Technical resupplying and reconstruction in many sectors have enabled new industrial capacity to be reached at a rate from one and one-half to two times as fast as those in new construction; outlays are repaid about three times as fast, and returns to investment are one and one-half times as great.

Under conditions of developed socialism, increased scientific and technological progress has a significant influence on raising the effectiveness of major constructions. Efforts of the collectives at scientific institutions whose work is in the fields of construction, architecture, building materials and machine building for construction and highways are directed toward this progress.

Thus it is necessary to ensure at all levels of construction management the setting up and carrying out of a complex set of measures designed to increase the supply of technology at the place of work, to increase the mechanization and automation of production processes, to decrease the number of manual labor workers, and to improve production organization and labor discipline.

The 151 percent increase in labor productivity in construction that is envisaged during the 11th Five-Year Plan will bring about a relative saving of labor equivalent to one million workers. This saving of labor will allow for a growth in construction and assembly work without increasing the number of workers. This is most important in view of the developing demographic situation in the coming years.

Particular attention must be given to reducing the amount of manual labor. It is estimated that outlays used for the mechanization of manual labor processes will free up four-five times more workers than if those same outlays were used to free up workers whose labor was already mechanized.

According to the Central Statistical Administration, the number of workers engaged in manual labor on construction and assembly work on August 1, 1979 has decreased by 63,000, or 3 percent, as compared with August 1, 1975. These are positive improvements, even though they are small. Workers performing manual labor in the construction and assembly sectors and in secondary production made up 49 percent of the workers in those industries in 1979.

The most labor intensive areas with a corresponding high amount of manual labor are the following: plastering, painting, facing, roofing, carpentry, joining and concrete work. There are about 1.5 million workers in these areas.

Realizing that decreasing the amount of labor in construction is a complex issue, the USSR Gosstroy, together with various construction ministries, the Ministry of Construction, Road and Municipal Machine Building and the Ministry of the Construction Materials Industry have envisaged a series of measures for the 11th Five-Year Plan: the creation of new machinery and mechanized tools, an increase in production output and the use of the latest building materials and construction techniques, the development of fully modular homes, the perfection of labor organization, and the maximum transfer of work operations from the building site to the factory.

The resolution of these problems has been brought out in plans for social and economic development as well as in measures, advanced project decisions, normative and other documents.

The plan for complex mechanization and automation of building and assembly work sets up targets for construction ministries and departments; they are to decrease the amount of large-scale and labor-intensive manual labor by 1985, this in comparison with 1981. Plastering, painting, ground work and loading/unloading are to be decreased by 19-20 percent; the mechanization of roofing work to be increased from 49 to 58 percent, the amount of containerized and packaged shipments increased from 24 to 39 percent, and the level of mechanization in concrete assembly increased from 50 to 60 percent.

This plan for complex mechanization and automation of building and assembly work also envisages the better use of construction machines and trucks, the introduction of advanced methods in mechanized work and the improvement of centralized repair of construction machinery, etc.

"A System of Machinery for Complex Mechanization of Construction in 1981-85," issued by the USSR Gosstroy and the Ministry of Construction, Road and Municipal Machine Building, addresses the problem of increasing labor productivity and decreasing the amount of manual labor.

Under this system, most important is the development of machines for heavy and for labor-intensive work and for processes which are being performed manually. Technological processes and ways of mechanization have been singled out for use in the reconstruction and reoutfitting of operating

enterprises. Envisaged is the use of 150 new general-construction and 120 specialized machines, more than 40 types of mechanized instruments and more than 30 automated transport devices. 25 types of specialized machines are to be used in reconstruction. To improve the quality of machinery for construction, 110 outmoded devices will be taken out of production during the 11th Five-Year Plan.

To improve the mechanization of earth work, highly efficient machines have been included in the system, including self-propelled earth-moving machines and earth-moving trains equipped with buckets having a capacity respectively of 25 and 2 X 25 meters³, powerful continuous-action bulldozers, and heavy-load dump trucks. For working frozen soil, powerful soil-loosening machines are to be used, caterpillar types of 10 tons and more, having bar-like working parts, hinged power hammers and excavators.

The decrease in the amount of manual labor in earth-moving operations is to be attained largely by the use of hydraulic excavators; they have a bucket capacity of from .4-1.0 meters³, a tractor-like propulsion and widely interchangeable parts.

Excavators-graders and other machines are also to be used. Efficient machines will be developed for use in working with piles, and new ones used for pile driving.

Much can be done to reduce the amount of labor in the areas of preparation, transport and laying of concrete mixtures; these mixtures will be made for the most part at centralized automated factories and plants. For the conveyance of concrete, construction and use of automated concrete mixers with a capacity of five and eight meters³ and of trucks for hauling it are to be expanded. Laying concrete will be accomplished by the increased use of concrete pumps with a capacity of 40-60 meters³ per hour and also of conveyor belt spreaders with a capacity of 20 meters³ per hour. Complex-mechanized work has allowed for a significant increase in the use of concrete and reinforced concrete.

Building construction will see the increased use of self-propelled boom cranes; the predominant growth in this area will be self-propelled cranes on special automobile-type chassis with a maximum load of from 25-100 tons. The development and use of cranes with a load of 160 and 250 tons will be continued as will the development and use of caterpillar cranes with a load of from 100-250 tons.

The mechanization of finishing work will see a significant increase in the production of efficient plastering and painting units, production mastery of mixing pumps with a capacity of two and four meters³ per hour, plastering units at one meter³ per hour, and machinery for carrying plaster mixtures with a capacity of six meters³ per hour.

In the paint industry centralized paint preparation will be developed along with the production and use of new machinery and equipment for the handling of paint mixtures: airless spraying, painting in an electrostatic field, etc.

We must note that it is necessary to increase the productivity of hand and mechanized tools for finishing work two to three times. 1981 data supports the view that this is being accomplished.

Reconstruction work will see the design of all-purpose earth-moving machines with scoops having a capacity of from 0.1-0.15 meters³, excavators with interchangeable working parts for site demolition, light boom cranes set up at the building site for the replacement of roofs, and other machinery.

In addition to a small increase in the mechanization of equipment, labor productivity growth will depend to a large degree on using this equipment better.

Work experience of the best building organizations shows that increased efficiency in the use of particular machinery is attained by setting up mechanical service stations. These will ensure the supply of the most appropriate machinery for construction projects, considering the size of the task and the particular conditions at the building site. They are also responsible for the organization and supplying of instrument distribution centers with the necessary tools and mechanical instruments, the supplying of work brigades with their required tools, and also control over the technical upkeep and use of these tools.

The Statute for Organization of the Tool Industry and Instrument Use and Supply in Construction provides for better provision of builders with mechanized processes and mechanical tools. The nomenclature and number of mechanized processes and mechanical instruments are determined by the type and scale of on-site construction and assembly work and are in accordance with construction agencies responsible for the work.

A high productivity is guaranteed when work brigades have their necessary tools. Having these tools, these brigades can attain on each shift the following outputs per worker: in masonry work, from 1.5 to 3 meters³ of brick laid, in assembly work, 3.4 meters³ of premixed concrete; in plastering, 20-22 meters² of plastered surface, and in painting, 30-35 meters² of painted surface.

By increasing the supply of necessary tools to work brigades and by ensuring a rational organization of the tool industry and of instrument use and supply, there will be a 15-20 percent increase in labor productivity in certain sectors and a guarantee that tools in mechanized processes will be kept in working order.

If there can be an efficient use of machinery in just the plastering and painting sectors, then some 50,000 laborers can be freed up.

It is well known that with the large number of buildings and structures, much labor is needed to drill openings, lay fissures, etc. for pre-mixed reinforced concrete and concrete.

For such work it is absolutely necessary to bring together at specialized centers the mechanical instrumentation and corresponding work brigades, teams, specialists in the following fields: drilling openings in reinforced concrete with diamond-tipped drills, working earthen structures with pneumatic punches, gun stapling, water removal and moisture prevention, vacuum concrete, high pressure painting, Gunitite, etc. It is also necessary to teach ITR [engineering-technical personnel] and workers the effective use of mechanized processes and mechanical tools.

In spite of the fact that the demand by construction organizations for tools in mechanized processes will be satisfied to a much greater degree in 1982, especially finishing instruments, electrical and pneumatic tools, there is still a shortage of electrical vibrators, frequency transformers, perforators, instruments for roofing, etc.

Because of a better supply of new earth moving machinery to construction organizations, there is now the possibility of decreasing the amount of manual labor in earth moving operations. The use of each excavator-grader in grading and smoothing operations and of each milling and boring machine for working frozen soil will free up to 25-30 laborers with shovels.

A significant decrease in the amount of earthen work and manual labor will be brought about by the use of boring machines for fence holes and electrical communication conduits, the use of various machinery for trenchless laying of engineering communications under streets, highways and railroads.

Having such machinery available, construction organizations will not have to use manual labor in digging out trenches and ditches for foundation and conduit work, on slope work for dikes and excavations on all sorts of small-scale excavation and conduit work in buildings and structures, loosening frozen soil and layers of rock, and stabilizing of sliding soil, etc. (except those areas where conditional construction work is projected.)

This work is to be carried out by mechanized trusts (administrations) and specialized organizations who have the necessary construction equipment and qualified specialists able to use this equipment.

To disseminate outstanding work examples is one of the best ways of decreasing the amount of manual labor.

Earth moving work performed by continuously-running machinery in the Kamgesenergostroy of the USSR Ministry of Power and Electrification deserves particular attention. At the basis of this new organizational and technical structure for earthen work is the widespread unification of technological processes and types of work; they are performed by continuous-action, standardized mechanized units which vary in the supply of machinery. The activity of complementary work brigades which make up a unit is the attainment of mutual end results. These collectives proved by their work their independence in finding solutions to many construction problems. In many instances there was a minimal amount of manual labor, and in several instances none at all. Therefore the mechanized units, the structural link in the production association for Kamgesenergostroy, became the basis of a large-scale, continuous-operation work.

Enterprises of the Ministry of Construction, Road and Municipal Machine Building during the last five-year plan produced more than 50,000 automated road-building machines: graders, asphalt-laying machines, scrapers, trench diggers, etc. These machines are being used by the USSR Ministry of Land Reclamation and Water Resources, the RSFSR Ministry of Highways and the LaSSR Ministry of Highways; experience shows that there is a significant increase in the productivity of those machines, an economy of labor expenditure, building materials and fuel, while at the same time the quality of work is increasing.

But there are frequent instances where certain organizations use automated machines not for their intended purpose, do not train personnel at the necessary time, and do not exercise control over their qualifications.

Construction organizations and mechanized centers that use this automated machinery must set up specialized groups to put them into operation, to use and operate them; they must organize instruction of personnel in the use of this machinery and do all that is necessary in this regard.

The delivery of various construction materials to the construction site remains one of the basic components of building technology; more than 90 percent of the materials are conveyed by vehicular transport. In this sector there are more than 700,000 trucks, and this fleet delivered more than 7 billion tons of construction materials. Here too lies the problem of decreasing the amount of manual labor.

To improve truck transportation of large cargoes, specialized transport vehicles, containers and packaging equipment for individual items and for individual bulk items in construction are now being manufactured. Instructional brochures are also being published that deal with the transport of construction materials and with the handling of containerized and packaged shipments of large cargo by truck.

Available information indicates that about 3,000 specialized vehicular transports for building structures have been produced, as well as 30,000 standardized containers and packaging devices. Machinery for mechanized loading and unloading and transport of both clay and silicate bricks has been developed and put into use.

Large amounts of manual labor are to be expected in the servicing and repair of construction machinery. According to the USSR Central Statistical Administration, construction organizations under contract have 241,000 workers engaged in the repair of construction machinery; some 164,000 (67 percent) perform hand labor. Repair and operational centers must increase the organizational and technical preparation for this work by using the latest mechanized devices. Keeping in mind that labor output is lower in the shops of operational centers than in repair centers, we must then limit the amount of large-scale repair work performed at these shops and increase the repair work of assemblies at these specialized repair centers.

By carrying out the above-mentioned plans as well as others for increasing the amount of mechanized labor and decreasing manual labor, this in accord with tasks set for the period 1981-85, we can attain a saving of labor in 1985 equal to 170,000 workers as compared with 1980.

Equally important in decreasing the amount of labor needed is the production and use of the latest building materials, structures and items; that is, the most recent developments in the industrialized construction industry.

And what specific measures are being made in this area?

Comparing output in 1985 with that in 1980, dry plaster work is to increase ten times, arbolite construction four times, wall and roof panels and insulation from sheet metal by a factor of 1.6, glass rubberoids by 1.4, durable mineral wool panels four times, extruded asbestos-cement panels 10 times, inventory buildings 1.5 times, and other new structures, materials and items.

Production of plaster-fiber and cement-filing panels, the super plastic concrete "S-3" is also to be increased.

All of the above can be attained in 1985 with the production of 28 types of technical equipment for construction enterprises and construction material enterprises (as compared with five in 1980) and the introduction of 28 new technical processes (compared with 16).

The use of the latest structures and materials will expand industrial methods of construction and decrease on-site "wet" processes.

Again comparing 1985 with 1980, the number of fully modular housing and cultural-service units is to be increased by a factor of 1.24, a new series of large-panel housing units by 1.2, and wood paneled homes several times.

Further development in modular construction of buildings and structures must proceed along the following line: maximum use of prefabricated construction elements instead of smaller elements. This is especially true in the layout of internal walls and partitions which are most often made of brick and small ceramic blocks.

Much can be done to increase labor productivity in the areas of organization and technology of construction.

The professional research of many of the country's building collectives, as well as the study, analysis and summaries of the work done in construction have revealed many hopeful areas in this sector.

Articularion of the complicated industrial complex into constructively and technologically isolated unit-networks under the network method will permit the following:

an increase in the level of management because of a more precise organization and coordination of work;

the creation for both the client and for the project institute of a reliable basis for initial operations of the complex; for the builder, for the planning of the work, a supply of construction materials, machines and laborers, an accurate coordination of all the activities in the building process.

The network method in the planning, preparation, organization and management of construction on coke mill no. 8 at the Avdeyevskiy Coke and Chemical Plant enabled work to be finished three months earlier than if traditional methods of work organization had been used; cost of work was decreased four percent, labor productivity increased 12 percent, and because of early completion, the additional production amounted to R560,000.

Construction organizations working in the less-developed regions of the North, Siberia, and Far East and in isolated rural areas use expedition and special-duty organization of construction work in accord with the particular conditions. Figures indicate that the use of such methods in work on the gas and oil complex of Western Siberia will permit reduction in costs on the basis of 1,000 workers of R15 million.

Together with the above-mentioned methods, the prefabricated modular method was used extensively in construction of the Western Siberia gas and oil complex. This allowed a reduction in labor of 25 percent on the building site and a cost reduction of 8 percent.

This method is extensively used on dispersion construction in particular, on the construction of pumping and compressor stations, gas distribution and thermal centers, electrical distribution structures and substations..

The study and widespread use of the experience gained on model construction projects set up in 1981 in various areas of the country play a large role in improving the organization of the construction sector.

V.I. Lenin noted that for Soviet rule "the organization of labor is the main, the basic, the topical question for public life."¹ This remark is particularly valid in light of the common practice of the brigade contract, which is a clear example of initiative and creative thought of the working man in a socialist society. He learns to work with zeal, to relate efforts to final results, and to educate the true leaders of industry. During the 10th Five-Year Plan worker productivity in the construction sector increased 28 percent for those under brigade contract, while the productivity of other brigades increased only 5 percent. About 80,000 construction brigades are working in this manner; they carry out more than 38 percent of construction and assembly work. During the 11th Five-Year Plan 55 percent of this work is to be carried out by the brigade contract method.

¹ V.I. Lenin, "Polnoye sobraniye sochineniy" [Complete Works], 5th ed, Vol 36, p 147.

One of the decisions of the 26th CPSU Congress is the following: "To create the conditions for a general dissemination of the brigade assembly contract on the basis of an increase in engineering preparation and production-technical supply."

With these demands in mind, construction workers of Sverdlovsk are working with the motto: "The brigade's task for the five-year plan--to work with a smaller staff."

We must consider as a future tendency the planned use of material and technical resources and their direct employment by the brigade. This is the example used by the UkSSR Ministry of the Construction Materials Industry; here the procurement of necessary amounts of material resources and the setting of time periods according to ten day and daily charts are organized and carried out by a specially created Administration of Production and Technical Supply. The transfer of certain production processes (sorting, selection, processing, packaging and others) from the construction site to stationary locations and their maximal mechanization will allow for an increase in labor productivity and a decrease in manual operations.

The use of indices of technical processes, technical feasibilities and norms for labor expenditure--all of these play a significant role in reducing the amount of labor in construction and assembly work.

The largest area for growth in labor productivity lies in the fulfillment of normative decrees and project designs for buildings and structures which foresee the wide use of construction elements with a high degree of factory preparation and finishing.

The "Technical Regulations for the Economical Expenditure of Basic Construction Materials," issued by Gosstroy in 1981, limit the use of wet plaster for finishing work on facades and internal surfaces, monolithic concrete and reinforced concrete construction. New standards for steel construction foresee a reduction in the amount of labor needed because of an initial reduction in the amount of welding work; this is to be attained by the use of extremely strong bolts in the joining process.

State standards for large-scale construction, issued in 1980-81, called for increasing the amount of factory preparation of construction elements and articles, thus permitting a reduction in the amount of labor at the construction site.

What is needed is the perfection of planning for and construction of secondary-auxiliary facilities of industrial buildings, where the level of industrialization is not high enough; the amount of labor needed for construction of this sort is three-five times greater per meter³ than for the main production works.

A significant reduction of manual labor, especially of heavy physical labor, is the most important task of project, construction and scientific research organizations and of enterprises of the construction industry during the current five-year plan.

In accord with decree no. 695 issued by the CPSU Central Committee and the USSR Council of Ministers on July 12, 1979, construction organizations and enterprises, ministries and departments are to carry out special, far-reaching programs for decreasing manual labor.

The work performed by the BSSR Gosstroy deserves attention. Analyzing tendencies of the construction sector together with construction ministries and departments, BSSR Gosstroy worked out and approved a special, far-reaching program designed to reduce the amount of manual labor in BSSR construction organizations. This program will permit the concentration of resources on this most important problem, a successful resolution of infrasector questions, and a decrease in departmental barriers. A similar program has also been set up and approved for the mechanization and automation of lifting-transportation, loading-unloading and warehouse work in certain sectors of the economy, including the construction sector.

The tasks envisaged in these and in other programs for the set up and introduction of new machinery and the latest technology will create the necessary prerequisites for a significant reduction in physically difficult and low-production manual labor.

These programs are carried out under a variety of systematic directions, forms and indices; this complicates any sort of generalization and also the working out of a special, far-reaching program for a reduction in manual labor, in particular in construction.

At the present time, the USSR State Committee for Labor and Social Problems, the State Committee for Science and Technology, the Central Statistical Administration, Gosplan and Gosstroy together with other ministries and departments are preparing a single system, forms and indices designed to carry out a special, far-reaching program of reducing manual labor in sectors of the national economy for the period up until 1990; this will be done on the basis of a general accounting (using passports) of manual labor.

In the formation of these programs, each enterprise (association), construction project and organization, ministry, department and union republic must determine the basic directions that will lead to the mechanization of manual labor, or else bring about specific measures to eliminate, reduce or facilitate every type of manual work now and in the future; this is to be accomplished by making use of the latest scientific and technical achievements, both domestic and foreign. Formation of the program will entail serious preparation to determine a technically and economically expedient level of mechanization, the necessary norms, and selection of optimal methods and means of mechanization for each type of work.

Institutes for design, scientific research and technology of ministries and departments must take part in the resolution of these questions.

In carrying out the above-mentioned programs, construction ministries and departments and their subordinate organizations and enterprises must undertake organizational and technical measures for a basic improvement in the construction industry, keeping in mind the following points:

improvement of the organization of construction and assembly work by increasing the level of technology used on construction projects and by increasing the responsibility of workers for carrying out the project;

earth work to be carried out as a rule by mechanized processes, widespread use of specially-designed machinery and the most advanced production methods;

attention to construction norms and regulations governing earth compaction during reverse pouring;

wide-scale introduction of the latest methods in plastering, painting, other types of finishing work, with the use of the newest machinery and the supplying of necessary tools for the brigade;

limiting the use of wet plaster processes for finishing work on facades and internal surfaces, partitions and monolithic concrete and reinforced concrete construction;

increasing the technical preparation and organization of mechanized construction and assembly work;

automation during the years 1982-85 of existing cement-mixing assemblies and plants;

development of packaging and containerization for the delivery of construction shipments, perfection of the organization of technical supplying and storage;

training of workers, engineers and machine operators in the use of new, high-production machines, mechanized tools and new technical processes;

increasing the degree of factory assembly of construction elements and articles, transferring work operations as much as possible from the construction site to the factory, using the newest building materials.

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LABOR

GOSPLAN OFFICIAL DISCUSSES JOB SLOT, MANPOWER EQUILIBRIUM

Moscow PLANOVYE KHOZYAYSTVO in Russian No 8, Aug 82 pp 55-60

[Article by I. Malmygin, senior scientific associate at the Gosplan Economics Scientific Research Institute: "Equilibrium Between Job Slots and Manpower"]

[Text] The planned proportionality of development that is a component of socialist economics assumes an equilibrium between the means of labor (including the instruments of labor) and manpower resources. This permits elimination of job slot shortages in relation to the number of people able to work (unemployment), as well as a job slot surplus (a relative manpower shortage).

To achieve this proportionality, Gosplan, Goskomtrud [the State Committee on Labor and Social Problems], TSU [the Central Statistical Administration], GKNT [the State Committee on Science and Technology], and Gosstandart [the State Standards Committee] worked out a program which outlines the close study and generalization of the experience of enterprises and branches of industry that are introducing a registration system and inventory of job slots, along with preparation of the necessary systematic materials. Experiments and other preparatory work are projected so that beginning in 1984 there will be practical implementation of planned indicators of job slots and simultaneous realization of measures for improved manpower utilization. At present, measures projected in the above program are already starting to be realized.

In recent years a tendency toward increasing numbers of unfilled job slots has arisen in our country. One of the reasons for this is that every year more job slots are created in industry than there are new workers.

An analogous situation has developed in agriculture. In 1965 the number of tractors, grain harvesting combines and trucks was less than the number of tractor operators and machinists, combine operators and truck drivers by 12,000 units; by 1976 this number surpassed the number of operators by 453,000.

Furthermore, if one takes into account all the combines and tractors that are fitted with land reclamation and other types of equipment, the surplus of job slots in 1978 turns out to be approximately 1 million.

The socioeconomic consequences of this situation are well known. Capital investments spent on creating job slots that are not utilized (other than the necessary reserve), are immobilized. The increased demand for workers leads to a decline in production discipline and in efficient utilization of all the production resources.

In industry, for example, the cost of one job slot grew from 10,200 rubles in 1965 to 17,400 rubles in 1978; the number of job slots for 1 million rubles of production per year decreased from 71 to 45. The table below indicates that even if the single shift capacity of a job slot had a continuous increase over the years shown, the yearly capacity in the individual years decreased (with a constant increase in the cost of one job slot).

In the period 1965-1975, the actual single shift capacity of one job slot grew by 5.2 percent, and the yearly capacity grew by 3.8 to 4.6 percent. The smallest increase in early capacity in comparison to the single shift capacity is due to a decrease in the shift coefficient in this period from 1.5 to 1.41. In 1976 in relation to 1975, the single shift capacity of a job slot increased by only one percent, and the yearly capacity decreased by the same amount. We see that 1970 was the last year in which for every percent of increase in the cost of a job slot, there was more than one percent growth in the job slot's capacity. In the following period we note a tendency of constantly declining efficiency in job slot utilization.

	(Figures in %)				
	<u>1970</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Change in capacity during the year:					
of single shift job slot	+5.2	+5.2	+1	+3	+2
of job slot	+3.8	+4.6	-1	+1	+1
Change in cost of job slot during the year	+2	+6.12	+4	+3	+4

Let us compare the absolute changes in capacity and cost of a job slot. From 1965 to 1970 for each ruble increase in the cost of a job slot, the yearly single shift capacity increased by 2 rubles 24 kopecks; after 1970 the capacity increase was only from 23 to 85 kopecks.

With the goal of eliminating these and other deficiencies in the Basic Directions for Economic and Social Development of the USSR from 1981-1985 and the period to 1990, measures are planned which will lead to equilibrium between existing and newly created job slots and manpower resources. We should point out that this type of work has been going on for several years already in a number of ministries and in various regions throughout the country.

In 1980 the Ministry of the Automobile Industry developed a set of instructions (or systematic recommendations) for carrying out systematic improvement and reduction of job slots at the enterprises (and associations) of the automobile industry. These instructions were recommended for use by the ministry collegium. A significant feature of the instructions is their systematic

approach; they show a clear understanding of the complexity and importance of the problem under consideration. Especially worthy of note are the directions concerning the necessity of providing a stimulus for reducing the number of job slots and increasing the technical-economic indicators of job slots, as well as the penalties for deviations in the actual status of a job slot from the planned solution.

In order to count job slots, the Ministry of Agricultural Machinebuilding uses a form called "summary list of results of implementing measures for reducing job slots and freeing up workers." This is the way in which enterprises (and associations) present data to the ministry about changes in the number of job slots.

In the Leningrad region during the 11th Five-Year Plan, a complex, specific program was devised and is now being carried out for counting, analysis, improvement, and reduction of job slots. Its basic indicators are: a calculated quantity of job slots that are necessary and sufficient for fulfilling the production program (including the planned reserve) by enterprise and by region; the number of people employed; the task of reducing the number of job slots, established by a directive from Lenplan for the region's enterprises. The fundamental aim of the program is maintenance of equilibrium between the number of people employed and the number of job slots in the enterprises of the Leningrad region. Other departments are conducting analogous work.

The problem of developing a system of job slots that are balanced with the manpower resources is also receiving serious attention in a number of other socialist countries. In the GDR (German Democratic Republic) this problem is being solved primarily by reducing the number of job slots. This is being achieved mainly by limiting the number of newly created job slots, eliminating outdated existing job slots, and by taking organizational and technical measures at working enterprises. For example, from 1976 to 1978 30,000 new job slots were created and 7,700 were eliminated. The situation has changed since 1979. In 1980 at the December Plenum of the German Socialist United Party Central Committee, definite successes in this field were noted. The following are leading enterprises that are dealing successfully with the task of reducing the number of job slots and increasing production efficiency: the petrochemical combine in Schwedt, the Mansfeld combine imeni V. Pika, the "Robotron," "Ost," and other combines, where the job slots have been reduced by 15 to 20 percent.

A standard form for job slot planning, developed by the Central Scientific Research Institute for Labor in Dresden, is now being put into use. This form contains information about the job slot's equipment, technology, working conditions, safety techniques, forms of payment, the profession and qualifications of the worker, and so on. It can be completed by hand or by automated equipment. In 1979 the Dresden Central Scientific Research Institute for Labor designed a standard method for analysis of job slots with the aid of the standard forms. In 1980 these forms were already being used in half of the industrial enterprises.

In Czechoslovakia around 25 percent of the job slots are not filled by the labor force. The central press has called attention to the serious deficiencies in the work of statistical information agencies that have failed to provide data on job slots. In 1978 the Czechoslovakian Labor Institute designed a method for balancing job slots that was approved by the CSSR Ministry of Labor and Social Affairs, the State Planning Commission, and the Federal Bureau of Statistics. It was tested at 36 enterprises in Brno, with a total of more than 64,000 people. The results of the experiment showed a large increase in economic efficiency with a balance of job slots.

At the level of the enterprise itself, a balance provides a means of uncovering job slots that have no future, so they can then be liquidated and the work force that has been freed can be used to increase long-range production. At the level of a production association, a job slot balance can help in analyzing the degree of utilization of basic production resources (for example, the shift coefficient, the number of job slots that are occupied, being preserved, are in reserve, or are vacant, etc.). It can also help analyze reasons for shortages and outline a plan for eliminating them. At the ministry level it is possible to develop sound solutions for problems of capital construction (new construction, expansion, technical refitting or reconstruction) or curtailment of outmoded production. Job slot balance is becoming an important factor in the activities of local government agencies that are concerned with problems of new construction or liquidation of outdated enterprises. Reduction of job slots throughout the entire country is a task set for 1981-1985.

The USSR Gosplan has devised a form called "combined technical-economic indicators of reconstruction and technical refitting of existing enterprises for 1981-1985," which contains the indicator "reduction of job slots, including that due to reconstruction of existing enterprises and that due to technical refitting of existing enterprises".

Ministries have presented plans for the 11th Five-Year Plan according to the form mentioned above. In calculating the number of job slots they were governed by the definition of a job slot found in the GOST [State All-Union Standard] 19605-74: "A job slot is a zone, equipped with the necessary technical means, in which work is performed by one person or a group of people together, carrying out one task or operation." An analysis showed that the concept of "one task or operation" meant different things to various specialists. Therefore the number of job slots that are counted can vary. For example, the reduction of job slots for the five-year plan was planned by different ministries as follows: the Ministry of Transportation Construction--20 job slots; the Ministry of Nonferrous Metallurgy--1432; the Ministry of Construction Materials--15,066; the Ministry of Chemical and Petroleum Machinery Construction--22,463. This wide difference in definitions--resulting in a numerical difference of three orders--indicates the need for designing instructive materials, using a single systematic basis, for calculating technical-economic indicators of job slots in the various branches of industry. This is even more important in light of the fact that there are in the country at present many departmental instructions, some of which contradict each other.

In 1981 USSR Gosplan, the USSR State Committee on Labor and Wages, the USSR Central Statistical Administration, the USSR Committee of Science and Technology, and Gosstandart were assigned the task of implementing planning and calculation of job slots, with provisions for conducting corresponding experiments in industry and developing the necessary systematic instructions. The USSR Scientific Research Institute for Economics was directed by Gosplan to develop systematic recommendations for calculating technical-economic indicators of job slots, specifically designed for composing job slot balances.

The job slot balance problem has three aspects: the national economy, branches of industry, and territorial concerns.

The national economy aspect deals with the need to ensure full employment of the population, and with allotment of a sufficient number of job slots to accomplish this (guaranteed by circulation). At the same time it is necessary to avoid creating a surplus of job slots that would form an increased demand for workers. The technical level and composition of the job slots must correspond to the tasks of eliminating heavy and dangerous labor and of rational combination of physical labor and creative, mental work.

The aspect concerned with the branches of industry consists of the need for the most efficient use of allotted capital investments for creating new job slots and modernizing the existing ones. The idea is to employ a structure for generating returns on capital investments that will guarantee maximum benefit for the national economy (that is, increase the volume of production and decrease costs).

The territorial aspect of the problem of job slot and manpower equilibrium is complex and multi-faceted. Its most important feature related to the planned development of the economy of the republics is agreement among the number of people able to work, the number of job slots, and the limits set for the number of industrial, office, and professional workers. It is also important to carry out the planned relocation of manpower resources.

The systematic recommendations mentioned above define an individual job slot as a zone equipped with the necessary technical means and designated for work performed by one person with the aim of completing a task or operation. The recommendations offer methods for calculating the overall number of job slots, their quantity per unit of capacity of the enterprise, the projected and actual cost of one job slot, and the output from each job slot. The method and requirements for working out a job slot balance are also described.

A distinction must be made between a quantitative balance and a qualitative balance of job slots and manpower. A quantitative balance occurs when the product of the number of job slots and their shift coefficient is equal to the number of workers. A qualitative balance occurs when the profession and qualifications of the workers correspond to the technological designation and technical equipment level of the job slots.

The first stage of the recommendations described above allows for achievement of a quantitative balance in branches of industry. Ministries must develop their methods on the basis of these recommendations; the methods must agree with the Gosplan, and they must take into consideration the specific nature of the different branches of industry. At the next stage, after a review of the present recommendations, systematic instructions will be developed for job slot planning for all areas of the national economy. They will reflect the need for achieving not only a quantitative balance, but also a qualitative balance between job slots and manpower.

In production associations (or combines) and enterprises, job slot classification is divided into job slots for industrial-production personnel (the principal activity of the association) and job slots for personnel in non-industrial organizations that are counted in the balance of the industrial enterprise (as non-principal activity). Within these groups, job slots are also divided into those for industrial, office, and professional workers.

Some departmental methodological materials recommend calculating and planning job slots only for workers involved in the principal activity of the enterprise. Some recommend counting only those industrial, office, and professional workers involved in the principal activity, and others recommend counting the personnel engaged in both the principal and non-principal activities. This diversity of methods requires a note that the selection of one or another composition of job slots depends on the aims of the calculation and the level of planning involved.

In accordance with Resolution No 695 made by the CPSU Central Committee and the Council of Ministers on 12 July 1979, industrial ministries, associations, and enterprises are including in the five-year plan's yearly plans a stronger indicator of the limit on the total number of industrial, office, and professional workers without distinguishing between those engaged in principal or non-principal activity, or between industrial, office, or professional personnel.

For calculations involving analysis of utilization and planning of development of production capacities, however, it is necessary to consider only those job slots for workers engaged in the principal activity, without including the personnel in non-principal activities.

When reviewing questions of production development (for example, technical re-fitting, reconstruction) that concern only job slots for those directly involved in the principal activity (and not office or professional workers connected with the principal activity), the calculations are carried out in conformity with this job slot category alone. And on the other hand, improving management or automation of planning and design work can be reflected only in changes in the number of office and professional job slots, without affecting the number of industrial job slots at all.

When workers work on equipment that contains in its technical registration documents requirements for a certain number of workers for proper operation, the number of job slots is determined by this data, and is equal to the number

of workers needed for correct functioning of the equipment. One worker can work on several pieces of equipment (one job slot can include several pieces of equipment), or several workers can share one piece of equipment (the job slot of one worker includes a part of the particular piece of equipment, for example, several job slots for one conveyor).

If industrial, office and professional workers carry out tasks or operations connected with fulfilling the production activity of an enterprise, the number of job slots is determined by the volume outcome (the labor consumption) of their work and normative productivity (by time) of the labor. (The calculations are based on the shift with the most number of people.)

The total number of job slots in enterprises and organizations is equal to the sum of slots for industrial, office and professional workers engaged in equipment use and production activity. The number of job slots in associations and ministries is defined as the sum of job slots in their subordinate enterprises and organizations and in the associations and ministries themselves (which are counted separately).

In the systematic recommendations the projected cost of a job slot is defined as the ratio between the estimated cost of construction of the enterprise (or unit) and the number of job slots created by the enterprise. The actual cost of a job slot is obtained by dividing the cost of the principal resources of the enterprise (or organization) by the actual cost of the total number of existing job slots.

The number of job slots in ministries and departments should be determined by the limits they have set for numbers of industrial, office and professional workers and their assigned shift coefficient. The number of industrial, office and professional workers in enterprises and organizations is defined by the number of job slots and their assigned shift coefficient.

An equilibrium between job slots and manpower can be calculated according to the following outline. A limit is set for the new planning period on the number of industrial, office and professional workers and their shift coefficient is also set. The balance of job slots is calculated: the number of job slots at the beginning of the year; the overall reduction in job slots, including that due to technical refitting, reconstruction, organizational-technical measures, transfer of enterprises (or shops) to other ministries, liquidation of enterprises (or shops); the overall increase in job slots, including that due to expansion of existing enterprises, new construction, transfer of enterprises (or shops) from other ministries and departments; the number of job slots at the end of the year; the number of job slots at mid-year. Then the production of the number of job slots and the shift coefficient is computed and compared to the limit set for the number of industrial, office and professional workers. The difference, divided by the job slot shift coefficient will reveal a surplus (or deficiency) of job slots; a reduction (or increase) in job slots can also be determined.

It is advisable to introduce these indicators into a production association's (or enterprise's) registration data, which every association (or enterprise)

now maintains, in accordance with Resolution No 695, passed by the CPSU Central Committee and the Council of Ministers on 12 July 1979. The data is revised for accuracy at the beginning of each year. This will require development of concrete limits on possible uses of these indicators in planning, along with corresponding changes in existing systematic instructions for working out state plans for the economic and social development of the USSR. A method for working out a technical, industrial, and financial plan for production associations and enterprises will also be needed.

The methods described above have been used in a preparatory test to analyze the plans in a number of branches of industry for capital investments from 1981-1985. The analysis showed that some ministries planned a reproductive structure of capital investments with an emphasis on new construction. As a result, at the end of the five-year plan these ministries could create up to 15 percent more vacant job slots (and not guaranteed manpower within the prescribed limits). The cost of the unused principal production resources could add up to many billions of rubles.

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LABOR

MOLDAVIAN LABOR OFFICIAL DISCUSSES FARM LABOR TRENDS

Kishinev SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 5, May 82 pp 18-19

[Article by A. Barkar', first deputy chairman of MSSR Goskomtrud: "A Leading Figure in the Village"]

[Text] More than 23,000 specialists having higher and middle skill levels are projected to be trained during the 11th Five-Year Plan. The Rural Professional-Technical Schools [SPTU's] will graduate more than 46,000 qualified workers, including more than 31,000 machine specialists [mekhanizator].

New professions are appearing in the village, requiring special knowledge, a high level of training, and general culture. Social progress, in order to satisfy the requirements of technical progress, has guaranteed that conditions will be met for an even greater augmentation of village cadres, including machine specialists and young people who have completed middle general education schools. This move has had a substantial influence on the qualitative make-up of machine specialists.

During the 10th Five-Year Plan, 97,100 machine specialists were trained. However, their total number for the preceding five-year plan grew by only 23,400 persons. This demonstrates that the problem of keeping machine specialists on the farms has not yet been resolved.

An analysis of the turnover of cadres shows that one-half of the machine specialists who left kolkhozes, sovkhoses, and sovkhos plants and societies voluntarily, were young men and women who had just completed either SPTU's or general education schools -- the inter-school teaching combines. This is a result of their dissatisfaction with work and with living conditions. As the young people have declared, one of the primary reasons for the outflow of young machine specialists from the village is that, as a rule, they have to begin on the job using old equipment, since directors of societies and sovkhoses, and chairmen of kolkhozes prefer to assign new machines to qualified machine specialists with a great deal of working experience.

In a majority of regions within the republic, wheeled tractors are used in more varied kinds of work and for a greater number of days. Accordingly, the wages of those who work on them are also higher. Thus, in order to establish permanent cadres of machine specialists, it is very important to improve the

material interests of those who work on caterpillar tractors. Obviously, it has become necessary not only to broaden the use of caterpillar machines in a great number of different kinds of agricultural work, but also to think about improving the pay system of laborers working on these machines.

It should be remembered that the reconstitution of manpower in the republic and in the country as a whole is taking on an increasingly vivid "youthful" character. Under these conditions, the primary training of machine specialists and their capability to attain professional status quickly, to a great extent determine how successful the activities of productive collectives will be.

The specific character of agricultural work has thus far required that people coming into the field have a bond with the soil and parental roots in the village. For this reason, societies, sovkhozes, and sovkhoz plants must select those young people for training in the SPTU who are already both psychologically and physically ready for work in the fields. In practice, it has not yet turned out this way.

In addition, qualitative changes that are taking place today in agricultural production, as well as in its general growth, cannot help but be reflected on the material incentive system for agricultural workers. And this is what has created the necessity for improving it.

The basic directions for developing labor pay scales for agricultural enterprises were designated at the July (1978) Plenum of the CC CPSU. This reinforcement of the relationship between labor pay and the end-product is an incentive for those collectives and workers who are performing well. "We should also be thinking," said the General Secretary of the CC CPSU comrade L.I. Brezhnev, "about strengthening the tie between material incentives for sovkhoz and kolkhoz workers and the results of their labor, as well as their effective utilization of production funds and material resources. It is also important to improve the bonus system for managers and specialists."

The accumulated experience in improving labor pay in sovkhozes and other state agricultural enterprises was generalized in the resolution of the CC CPSU and the USSR Council of Ministers, "On Improving Planning and the Economic Stimulation of Production and Procurement of Agricultural Products," which for agriculture is as authoritative and programmatic a document as is the resolution of the CC CPSU and the USSR Council of Ministers for the industrial sectors, entitled, "On Improving Planning and Strengthening the Influence of the Economic Mechanism for Increasing the Effectiveness of Production and Quality of Work."

As is known, a classification system was introduced for tractor drivers-machinists and for brigade leaders. Those who have been awarded I and II class skill levels receive a supplemental pay on top of their wages, amounting to 20 and 10 percent (brigade leaders receive 20 and 30, and 10 and 15 percent). This is not only an incentive to raise one's skill level, but also facilitates the keeping of cadres in agricultural production. It is necessary only that the farms take care of these problems in time.

Together with a quantitative growth of machine specialist cadres, as agriculture becomes further industrialized, a particularly pressing problem is one of raising their skill levels. This is engendered both by the establishment and development of inter-farm mechanized and specialized societies and enterprises in which agricultural technology is concentrated, as well as by the production and delivery to the village of highly efficient and complexly built machines and equipment.

The republic has experience in raising the skill levels of machine specialists. For example, the Kaushanskiy Region has an inter-departmental teaching combine for self-financed enterprises. It is a special organizational subdivision of the mechanization society. Machine specialists from kolkhozes and sovkhozes undergo training here from January to June of every year. The Kaushanskiy experience deserves attention and dissemination in all regions of the republic.

Women could contribute a great deal in augmenting the ranks of machine specialists in the republic. There are many examples of this. For instance, in the Kolkhoz imeni S. Lazo, in the Grigoriopol'skiy Region, a women's Komsomol youth brigade consisting of 60 persons has been functioning for many years now. The brigade is headed by communist Lyudmila Dmitrievna Andreyeva.

The great majority of those trained in various courses consists of tractor and combine drivers and chauffeurs. Rapidly increasing are numbers of master repairmen and machine specialists for servicing animal-breeding complexes, masters for servicing machine milking, machine specialists for melioration and irrigation projects, electricians, and others. All this, without a doubt, exerts a positive influence on the overall list of available qualified machine specialists.

It has been calculated that a village needs more than 100 different professions. Of course, one person cannot master all these professions, but an experienced machine specialist will know more than 10 of them.

Professional orientation work among young people of the village is of great importance in increasing the cadres of machine specialists. Subjects on tractors and agricultural machines are taught in 330 middle schools of the republic. Middle schools have at their disposal 489 tractors and 250 rooms for the study of agricultural mechanization. Each year 81 percent of the graduates of republic agricultural schools receive their class III tractor driver-mechanic skill levels, along with their school certificates.

One of the best schools in the republic for training cadres for agriculture is the middle school of the village of Malayeshta in the Grigoriopol'skiy Region. During the 10th Five-Year Plan, 298 graduates of the school, including 76 young women, qualified as tractor drivers, and 120 of them, including 46 young women, remained to work in their own villages. It is amazing how these youngsters, having received their tractor driver specialization training while they were in middle school, very quickly master this responsible duty and work with a Komsomol fervor, putting all their flaming young hearts into the jobs they have grown to love, successfully fulfilling the norms that have been set for them.

The Malayeshta school instills diligence, purposefulness, and feelings of collectivism and responsibility in its students -- all those qualities without which an active outlook on life is impossible.

Due credit must be given to the Kishinev Agricultural Institute imeni M.F. Frunze and the sovkhoz technikums for the definite role they play in training and raising the skill levels of machine specialists. These organizations have at their disposal highly-qualified cadres of teachers and specialists, the necessary material-technological base, and highly organized training farms. And for this reason, with every year the army of machine specialists in the village grows more and more, and their skill levels and mastery are increased. All this, in the final analysis, will allow the successful resolution of problems presented by the party and the government to the agricultural production sector of the republic.

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LABOR

MEASURES TO ALLEVIATE THREATENED LABOR SHORTAGE PROPOSED

Moscow SOTSIALISTICHESKIY TRUD in Russian No 4, Apr 82 pp 15-24

[Article by N. Panteleyev, chairman of the Ukrainian SSR State Committee for Labor and Social Problems: "Heightening the Effectiveness of the Job Placement Service; An Important Form of Labor Supply Planning"]

[Text] The job placement service in the Ukrainian SSR has now taken the leading position in the planned provision of enterprises and organizations with manpower and has become essentially the only form of organized manpower distribution and redistribution within the labor agency network.

The manpower shortage in the second half of the 1970's and, in particular, in the 1980's has suggested the expediency of concentrating all manpower redistribution functions within a single labor agency network.¹ An analysis of the actual state of affairs and the possibility of correcting it had to be conducted to determine which network should be assigned this responsibility--the network of public job placement offices or the network of officials responsible for the organized recruitment of manpower, the resettlement of families and the placement of secondary school graduates. Whereas rural inhabitants accounted for most of the clientele of offices for the organized recruitment of workers and the resettlement of families in the Ukrainian SSR in the 8th Five-Year Plan, the percentage of urbanites and new residents of cities in this clientele has been rising since 1971. The republicwide figure is now almost 70 percent, and in some oblasts it ranges from 80 to 100 percent. In 1976, for example, only 149 of the 500 authorized representatives of oblast labor agencies worked in cities, while the rest worked in rural areas. This meant that the rural link was underloaded while the urban link was obviously inadequate.

The intense socioeconomic changes that have taken place in the Ukraine's western oblasts during the years of Soviet rule, including the more rapid development of their economy, have also made considerable changes in manpower distribution patterns. Whereas most of the reserve manpower (primarily persons engaged in housework and private farming) from these oblasts was once sent to other industrially developed regions inside and outside the republic, now this reserve is used mainly to satisfy the labor needs of local enterprises and organizations. This tendency becomes stronger each year. The reduced possibilities for participation by western Ukrainian oblasts in interrepublic and interoblast manpower redistribution have resulted less in the reduction of its total quantity than in a significant rise in

the percentage of intraoblast manpower placement. For example, they already account for 81-82 percent of organized manpower recruitments and 73 percent of family resettlements. This indicator will continue to rise in the future.

Intraoblast manpower redistribution is still being called organized recruitment although it is essentially a job placement process. This introduces some confusion into efforts to improve the system of organized manpower redistribution and does not help to heighten the responsibility of managers for the efficient use of labor and the maintenance of a stable labor force. This is why intraoblast redistribution should be called job placement, because this is of fundamental significance. As we know, in the job placement process, the laborer and the enterprise conclude a labor agreement for an indefinite period, which is one of the objective prerequisites for the creation of a permanent labor force. In the organized recruitment system, on the other hand, the worker usually resigns after his contract expires, and the system therefore presupposes personnel turnover. Nevertheless, the managers of many enterprises and organizations continue to insist on staffing only through organized recruitment, even within the oblast. This is something of a bow to tradition. Since the state organized recruitment system was set up, it has always guaranteed the acquisition of manpower and, consequently, the fulfillment of the plan. Enterprise and organization managers have grown accustomed to this. The job placement service does not offer any guarantees of this kind as yet.

We feel that this problem can be solved. The job placement service should be specified in the plan as the source of additional manpower for enterprises and organizations and, of course, in line with the local supply of labor resources. Unfortunately, some labor agency personnel and the authors of some publications believe that the job placement process cannot be planned because it is strictly voluntary. But after all, all of the citizen's interests and wishes are taken into account in organized recruitment and in any other manpower redistribution process. Since the job placement process, in contrast to the others, is concentrated within the bounds of a single city, it would be much easier to turn it into a planned source of additional manpower for enterprises. This could be accomplished successfully if the bureaus could have the same placement rights as the labor agencies responsible for organized recruitment and family resettlement, according to which they not only recommend certain workers (or families) but also conclude agreements with the latter on behalf of the enterprise, organization, kolkhoz or sovkhoz. This problem must be solved as quickly as possible. At present the role of labor agencies in the provision of national economic branches with manpower is distorted because central statistical administration reports reflect only organized recruitment figures, and they account for only 12-13 percent in the Ukrainian SSR in combination with intraoblast recruitment, while interrepublic and interoblast recruitment accounts for only 2 percent, and 87-88 percent of the persons who use job placement services are recorded as people hired by the enterprises themselves. It is obvious that these statistical reports should indicate all of the manpower placed by labor agencies.

During the current five-year plan, people who have held previous jobs and already have a specific profession or specialty will constitute a majority (over 80 percent) in manpower redistribution patterns in the Ukrainian SSR. Naturally, most of them will prefer to retain these professions or specialties when they change jobs. Whereas the workers placed by the organized recruitment system in the past had no

profession or had few skills and were therefore not overly concerned about their future place of employment and working conditions, these have now become a deciding factor. This is why each applicant must be aided in finding a job corresponding to his profession or specialty, skills, personal preferences regarding working conditions, etc. This will eventually produce a tremendous savings in live labor and resources because it will eliminate much of the need for retraining, and the individual will derive emotional satisfaction from his new job. The existing organized recruitment system does not usually concern itself with this, although enterprises and organizations are insisting on qualified job applicants. For this reason, the time has come to replace organized recruitment with something like public appeals, during the course of which the services of skilled personnel could be enlisted for major construction projects and could be offered the appropriate benefits and conditions. This practice has already proved effective in a number of projects.

Therefore, the main organizational form in the Ukrainian SSR for the satisfaction of enterprise labor requirements is becoming, for objective reasons, the placement of temporarily unemployed persons through placement bureaus. The newly created or considerably enlarged networks of these bureaus in cities and urban settlements have taken on much of the responsibility for manpower redistribution, including the organized recruitment of workers, the resettlement of families and the placement of secondary school graduates, retired persons and disabled persons who are able to work. The institution of organized recruitment officials has been abolished in these places. The freed personnel have been used to considerably augment the staffs of oblast labor agencies, which, as we know, did not receive additional employees to perform their new functions. Besides this, municipal labor departments will be opened in 23 cities (excluding oblast centers).

For the coordination of work and efficient management on the local level, oblast bureaus have been set up in all oblasts, and city and rayon bureaus have been converted into their branches. City bureaus (with the powers of oblast bureaus) have been opened in Kiev and Sevastopol with city rayon branches. Each city with rayon divisions has an affiliate (with the rights of a section) of the municipal department. At the beginning of 1982, manpower redistribution in the republic was the direct responsibility of two municipal bureaus with oblast rights and 136 municipal (in all cities of oblast jurisdiction) and 272 rayon branches of oblast bureaus. When the bureaus were being set up, the UkSSR Goskomtrud [State Committee for Labor and Social Problems] proceeded primarily from the assumption that each of them should help in the regulation of manpower redistribution according to plan. It is possible that the branches in some rural rayons will be abolished after their potential has been exhausted. The central bureau is still responsible for the procedural and operational supervision of oblast bureaus and the Kiev and Sevastopol municipal bureaus. We believe that this three-level system of management (central--oblast--oblast branch) is the most effective one for the job placement service in the Ukrainian SSR. It should be noted that the oblast bureaus and their local branches are under the jurisdiction of the oblast labor department and the ispolkom of the local soviet of people's deputies. All bookkeeping is centralized in the oblast bureau. Whereas 13 municipal branches had separate accounts in 1981, only 1 has a separate account now--the Krivoy Rog branch.

In conjunction with the UkSSR State Committee for Prices, we determined a new standard rate for the performance of job placement and organized recruitment

functions, including advertising costs. This objectively requires bureau personnel to improve organizational work in manpower redistribution and not rely on income from job information services. The bonus system has been set up with consideration for the differing intensity of work in public placement, organized recruitment and resettlement processes, including outside the oblast or republic, and bureau personnel are therefore given an incentive to fulfill their assignments. Some authors, including I. Maslova, believe that the placement service could best be financed by the budget method, in accordance with which all enterprises would have to pay a special fee for the development of this service. This envisages the compulsory payment of fees for the hiring and discharge of laborers of all categories.² In our opinion, it is hardly correct for a self-funding unit to charge fees for services that have not been rendered, and a transfer to the budget method would be contrary to the essence of self-funding and personnel incentives. It is true that some people feel we have an incentive to stimulate turnover in order to increase placement volumes. In fact, labor agencies have no interest in turnover and are even taking the necessary steps to stabilize the labor force. Nevertheless, the heightened mobility of the population under the conditions of technological progress is an objective reality, and we therefore see no contradiction in our dual task of stabilizing the labor force and increasing public placement through the bureaus, as, for example, M. Pityulich has stated.³ The placement of the public primarily through bureaus is not important to us in itself, but as an effective means of regulating manpower distribution among enterprises and organizations. Whereas in 1977 the number of people placed by this network was 363,600, in 1981 it was already 726,200, or almost twice as many. The proportion accounted for by bureaus in the organized recruitment process rose from 12.4 percent in 1975 to 90 percent in 1981, and in the resettlement of families it rose from 5 percent in 1978 to 61 percent in 1981. This means that bureau work has improved and business contacts with enterprises and organizations have grown stronger. All information about vacant jobs and positions in various branches of the national economy is concentrated in one place. This is highly appreciated by the public because it makes it much easier to choose a place of employment. Furthermore, we believe that the published information about enterprise manpower requirements and the numerous notices with which the doors of enterprises were papered so colorfully until just recently, no longer play their previous role in the recruitment of personnel. Whereas they once encouraged people engaged in housework and private farming to enter national production, they can now be one of the reasons for a high turnover rate. This is why the main aspect of public information should be the popularization of the placement service itself and the indisputable advantages gained by those who apply for its assistance.

The concentration of all manpower distribution and redistribution functions in the job placement service will also create favorable conditions for the exercise of enterprise staffing powers. The operational experience of bureau branches testifies that they are visited by tens and hundreds of times as many applicants each day, week and month than even the largest enterprise in the city or rayon they serve. In 1981 bureau services were utilized by more than 15,000 enterprises, organizations and establishments in the republic. Whereas in 1975 the placement service accounted (in cities and rayons with bureaus) for an average of 30 percent of the workers hired in various branches of the national economy, the figure was already approaching 40 percent in 1980, and it was 74.2 percent in Zaporozhye Oblast, 62.2 percent in Khmel'nitskiy Oblast, 61.9 percent in Poltava Oblast and

57.9 percent in Sumy Oblast. We feel that this is a quite natural development. The reinforcement of regulating functions on the part of state and local authorities in manpower distribution and redistribution stems from the planned nature of national economic development under socialism.

Enterprises did not experience any particular recruitment difficulties when there were enough labor resources. Now, on the other hand, the absolute majority are extremely interested not only in the guaranteed satisfaction of their own additional manpower requirements but also in the relatively equal staffing of all enterprises and the elimination of such negative factors as the maintenance of surplus labor at some enterprises to the detriment of others. This problem will be solved more successfully as the job placement service conducts manpower redistribution on a broader scale, with each laborer free to choose a particular type and place of employment in accordance with his personal preferences and, naturally, with a view to societal needs.

The main objective is to turn the placement bureaus into the principal source of additional manpower for enterprises and organizations and thereby complete the transition to the centralized management of manpower distribution and redistribution and considerably reduce the amount of time spent by laborers in search of jobs. It stems directly from the plans to improve the economic mechanism.

In connection with this, it would be wise to discuss the forms and methods of placement service activity in the Ukrainian SSR in greater detail. Since 1980 the placement service has examined the personnel requisitions of enterprises and organizations for the plan year. Data on personnel sent for job interviews at each enterprise and organization are kept in an annual contract supplement. A draft manpower redistribution program is compiled for each branch bureau and for the oblast as a whole, showing the requirements of each ministry and department, and is submitted to UkSSR Goskomtrud for its approval. Assignments for the organized recruitment of workers, the resettlement of families and the placement of secondary school graduates are specified in a section of the plan for the economic and social development of the republic and are reported by UkSSR Goskomtrud to oblast labor departments and the Kiev and Sevastopol municipal departments.

Workers and specialists are placed by the service (within the limits of specified volumes and according to quarterly assignments) on the basis of job vacancy information submitted each month. Preliminary data for 1981 testify that bureau activity has become more purposeful and is carried out according to plan. Whereas the knowledge of a vacancy and the consent of the applicant were once the only criteria used in the choice of a place of employment, the interests of the specific enterprise or organization are now of primary importance. At one time most job applicants were sent to enterprises which had not signed contracts with the bureaus.

Now the situation has changed. In 1981, for example, only 30,000, or 4.2 percent, of the 726,200 people placed in jobs were sent to enterprises of this category. These were mainly establishments of various types and small organizations. On the whole, the annual commitments of the placement service were fulfilled by 96.6 percent that year. More attention was given to finding manpower for enterprises in all branches of industry, trade, transportation, municipal services, etc.

The needs of construction organizations were not as fully satisfied because they have their own organized recruitment plan and do not always make use of placement services. But after all, even when there were enough labor resources in the past, labor agencies without these bureaus could not conduct the organized recruitment of such large quantities of manpower.

The system of accounts can only be simplified by coordinating placement volumes with quarterly and enterprise assignments. Enterprises can pay the placement service in advance and then balance their accounts on a specific date. This, in turn, will give the bureau an incentive to fulfill its contract obligations to the letter.

At the same time, there are still many unsolved problems in this area, just as in any other new field of work, which stem primarily from the force of inertia and attachments to old forms and methods of work. Some branch bureaus are still reluctant to take on the responsibility of sending the specified number of workers to a particular enterprise on a quarterly basis--that is, they cannot give up their mediating functions, which did not envisage this responsibility (it is no secret that some of the personnel of superior labor agencies also tend to think in these terms). This often happens because bureau personnel have little skill in analyzing the annual requisitions submitted by enterprises, as they have not concerned themselves with these matters for many years and have grown accustomed to only filling vacancies. In view of the fact that financial incentives in this sphere depend on the fulfillment of placement assignments, several bureaus submitted obviously understated draft assignments in 1982, and UkSSR Goskomtrud had to correct them. We feel that the main criteria for the determination of such assignments should be the optimal percentage of bureau placements in the total number of enterprise hiring transactions and the possibility of satisfying enterprise requests for additional manpower.

Some branch bureaus are still not striving to fulfill quarterly assignments to the letter for each enterprise and organization. The assignments of some are overfulfilled slightly, but this is accomplished at the cost of others, although the practice of several branches testifies that equivalent distribution is quite feasible even if placements are strictly voluntary and take all of the applicant's preferences into account.

To improve the work of the placement service and turn it into the official source of manpower for enterprises, qualitative information about job vacancies must be obtained from enterprises in a timely manner. Analysis indicates that many personnel departments provide the service with incomplete information, preferring to hire workers in prestigious occupations on their own. The concentration of applications for non-prestigious professions in the bureaus not only complicates their work but also undermines their authority.

A preliminary analysis of the results of bureau activities indicates some shortcomings in the work of enterprise personnel offices. They are not engaging in enough analytical work and often do not know how many workers of each profession and specialty will reach retirement age during the plan year, the dates on which they will retire, how many of them will leave their jobs at this time and how many young workers will be called up for military service in the USSR Armed Forces. They have no records of the projected number of persons who will resign for other

reasons, including turnover due to job dissatisfaction, how many new workers they will need and where they will get them. For this reason, they submit the same, insufficiently substantiated requisitions from year to year.

The UkSSR Goskomtrud is taking the necessary measures to eliminate these shortcomings. We believe that the further improvement of the system of annual contract obligations will aid in manpower distribution and redistribution.

I would also like to say something about T. Nikitina's statement that "the introduction of automated systems into bureau operations will allow for the considerable expansion of their functions...particularly the distribution and redistribution of manpower according to plan and the augmentation of the role of local labor agencies in the provision of enterprises and organizations with personnel and in the placement of freed workers. The bureaus could be responsible for keeping records of total city or rayon personnel requirements and of the progress in staffing enterprises and organizations through all sources of manpower."⁴

There is no question that the heightened effectiveness of the placement service in the future will be based on the widespread use of automated control systems, particularly after the transition to interoblast and interrepublic information. The work of the placement service in the Ukrainian SSR proves, however, that these tasks can be completed successfully without an automated placement control system.

We believe that the introduction of this kind of control system should, first of all, dramatically enhance the speed with which bureaus fill vacancies and reduce the amount of time required for job-hunting and, secondly, help to reduce the number of placement service personnel. If these objectives are not attained, the system could turn into a useless and costly toy. This is why its introduction should be preceded by a thorough analysis of all factors and aspects of bureau activity.

What is the present workload per bureau employee counseling the public? If the calculation is based not on the actual placement volume but on the total number of bureau applicants, the average daily workload per bureau employee in the Ukrainian SSR in 1981 in all types of organized manpower redistribution did not exceed 6 or 7 applicants. We feel that this daily workload allows the employee to not only serve each applicant quickly and well but also set aside enough time for analytical work, even without an automated control system.

Experience has shown that the compilation of quarterly summaries of job vacancies (the package system) is not an effective practice because this information is already obsolete by the time the quarterly report is received, and bureau personnel have to call the personnel departments of enterprises and organizations to verify the data. We feel that the dialogue (or display) system is more progressive because it can automate the choice of jobs. The introduction of this system, however, is usually impeded by the absence of auxiliary equipment. It must also be borne in mind that the issuance of an interview card to an applicant does not mean that the vacancy has been filled. Considering the fact that 5 or 6 days go by between the time the interview is set up and the actual placement date, and the fact that confirmation from the personnel department arrives even later, bureau personnel must maintain constant contact with personnel departments even when the dialogue system is used. Besides this, 1 out of every 11 applicants in the Ukrainian SSR who went

out on an interview in 1981 was not hired. This considerably reduces the savings in job-hunting time and creates difficulties in the efficient recording of placement services.

The economic side of the matter must also be considered. After all, the expenses connected with the use of the automated placement control system are still quite high. According to our calculations, the cost of maintaining this system would be equivalent to 30-40 percent of all bureau income received from enterprises. For example, the Riga municipal bureau placed 19,300 people in 1980, but its computer operation costs were around 15,000 rubles, or almost 78 kopecks per placement.⁵ Furthermore, the Riga placement control system is probably the most economical one. The automated control systems which are operating in some cities in the country have still not actually freed any bureau personnel. What is more, we feel that their incorporation was simply a bow to fashion in some cases. The prerequisites for this were already established when functional operations were planned. Even now, after some experience has been accumulated, fairly limited functions are planned for the unified automated placement system: the processing of report and statistical data on placement services, the compilation of summary reports on job vacancies, the selection of appropriate jobs and the preparation of analytical and statistical reports.⁶ We have already discussed the primary functions.

The operational experience of the placement service, particularly in our republic, testifies that the sociodemographic characteristics of bureau applicants have not undergone any abrupt changes for a number of years. This is why it would probably be unwise to calculate these indicators each year for all applicants, and it would be better to conduct (according to the methods of the USSR Central Statistical Administration) surveys once every 2 or 3 years, or once a year at the most, in one of the more characteristic months. These data, just as other report forms, could be processed in computer centers for collective use.

The process of manpower distribution and redistribution is part of the general problem of the management of labor resources, which takes in all of the tasks involved in their reproduction, training, distribution and utilization. The creation of local systems (even in large cities) to control the process of manpower redistribution, which will perform extremely limited tasks, will not, in our opinion, produce the necessary economic and social impact. This would also be complicated by the fact that population mobility is not limited to the framework of a particular city but transcends the boundaries of oblasts and republics. This is why it would be best to create an automated system for the control of labor resources which would encompass at least an entire oblast, although an entire republic would be better and the entire country would be ideal, and would perform functions of a completely different nature, while the automated placement control system could be one of its subsystems. It is evident that this can only be accomplished after the creation of regional and statewide automated control systems and after the resolution of a number of legal problems connected with the incorporation and operation of the labor resource control system.

This is why our main objective at present, since many bureaus are still not prepared for this, should be the further improvement of the organizational and economic analytical work of the placement service, which is now conducted by UkSSR Goskomtrud. The great national economic value of the job placement service has

already been demonstrated. We would like to discuss a few indicators of the effectiveness of bureau operations. For this purpose, we will cite the following figures:

<u>Category</u>	<u>1975</u>	<u>1980</u>	<u>1980 in % of 1975</u>
Total number of applicants for bureau services, in thousands	469.9	850.5	181
Breakdown:			
Remained in previous job	--	28.8	
Had interview set up	433.5	787.1	181.6
Placed	324.9	688.1	212.0
Percentage of persons interviewed among applicants	92.9	92.6	
Percentage of placements among interviews	74.9	87.4	
Percentage of placements among applicants	69.1	80.9	

These data can easily serve as the basis for the simplest calculations, which will provide a clearer idea of the activities of the UkSSR placement service.

The difference between the number of persons who are sent out on job interviews and the total number of bureau applicants obviously indicates the degree to which the interests of job-seekers are being served. The smaller the gap, the better the placement service is serving the needs of applicants. In 1975 the figure was 7.7 percent, in 1980 it dropped to 7.4 percent and, if we exclude the people who remained in their previous jobs, it was 4 percent. This means that the placement service began to obtain more complete information about job vacancies at enterprises.

The correlation between the number of placements and the number of job interviews indicates the degree to which existing information corresponds to actual working conditions, wages and other indicators, as well as the degree to which the occupations and skills of applicants satisfy enterprise and organization requirements. In this case the gap between interviews and actual placements decreased during the five-year plan from 25.1 percent in 1975 to 12.6 percent in 1980--in other words, it fell to half its previous level. Nevertheless, it amounted to 99,000 people in 1980. This means that many of the applicants sent out on interviews by the bureaus had to refuse the jobs they were offered after they learned more about actual working conditions, transportation connections, the availability of space in preschool establishments and other socioeconomic factors about which the bureaus do not have complete information. This wastes too much working time, causing national production to lose hundreds of thousands of man-days, and undermines the authority of the placement service.

One important indicator of the effectiveness of bureau operations is the bureau's effect on the stability of the labor force. Some people believe that the effectiveness of bureau work in this area can be judged from the difference between the number of applicants and the number of persons actually placed at other enterprises.⁷ This would only be true if the placement process were totally under the control of bureaus. The data cited above indicate that 850,500 applicants asked the bureaus for assistance in 1980, but the actual number of placements was 688,100. The difference was 162,400, or 19.1 percent, while in 1975 it was 30.9 percent. Do these indicators prove that the placement service had a greater effect on manpower

stability in 1975 than in 1980? Hardly. In 1981 the difference was 138,900, or 16 percent.

In 1980, 63,400 people did not go out on job interviews, and 28,800 of them remained in their previous jobs. The placement service has no reliable information about what the remaining 34,600 people did. It is probable that some of them simply wanted to know what kind of "demand" there was for certain occupations and specialties and decided to learn about working conditions and wages without having any firm intention to leave their previous jobs. Some of the other applicants decided to find their own jobs. This is probably what also happened to the 99,000 people who went out on job interviews but were not hired.

Finally, let us look at the correlation between the rates of increase in bureau applicants and actual placements. The same data indicate that the number of bureau applicants rose 81 percent over the 5 years, while the number of placements was 2.12 times as high by the end of this period. This testifies to the improvement of the quality of bureau work.

Experience has shown that we will have to conduct more analyses of the quantitative and qualitative indicators of the placement service's operations and the degree of its influence on these processes as the volume of manpower redistribution through the placement service grows. This is why USSR Goskomtrud should work out a system of these indicators and issue instructions on their determination, which would establish a single procedural basis for these calculations. According to T. Nikitina's article, however, the preparation of procedural aids for the planning of basic placement indicators for bureaus, recommended ways of organizing their work and proposals regarding the socioeconomic and organizational principles of the state public job placement system is planned for 1982. In the next few years, the normative and procedural bases of placement activity in the country will be improved.⁸ Considering the fact that it took almost 4 years to draw up a standard statute on the bureau (and it could have been done in 2 or 3 months), it is not likely that these documents will be ready on schedule. It must also be said that the quality of some documents already leaves much to be desired. For example, we feel that the standard statute on the bureau looks back to the past, and the standard statute on bonuses merely confuses practical workers.

Although the job placement service has been developing for more than a decade, there are still many unanswered questions in this area, not to mention problems that have not even been analyzed as yet. This is why we feel that everything that is new and progressive must be thoroughly and carefully studied, and experience must be summarized and recommended for incorporation on all levels of management in the system of labor agencies. Thorough scientific research and practical recommendations are needed. The job placement service has a great need for them.

FOOTNOTES

1. I. Maslova's statement that the placement service was created to overcome the negative consequences of the manpower shortage is debatable. In 1967 there were no negative consequences of the shortage and there was even a surplus of manpower (see SOTSIALISTICHESKIY TRUD, 1981, No 7, p 64).

2. Ibid., pp 69-70.
3. Ibid., p 72.
4. Ibid., 1981, No 9, p 75.
5. Ibid., pp 68-74.
6. Ibid.
7. Ibid., 1981, No 7, p 65.
8. Ibid., 1981, No 9, p 76.

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LABOR

ACADEMIA-SPONSORED LABOR CONFERENCE HELD IN SVERDLOVSK

Moscow EKONOMICHEKSIYE NAUKI in Russian No 7, Jul 82 pp 119-121

[Article by N. Filippov, docent, candidate in economic sciences: "Perfecting theory and application of organization of labor"]

[Text] The results of research by vuzes in the field of scientific organization of labor, ways to improve it and the outlook for its development in light of decisions of the 26th CPSU Congress were discussed at the All-Union Scientific Conference held in late 1981 in Sverdlovsk. The conference was called by the USSR and RSFSR Ministries of Vuzes, the State Committee of the USSR Council of Ministers on Labor and Social Issues, and the Sverdlovsk Institute of the National Economy. The participants included leading scientists in organization of labor, members of Soviet and republic ministries and agencies, party and Soviet offices, industrial and agricultural enterprises.

Speaking at the plenary session, N. G. Veselov, doctor in economic sciences and rector of the Sverdlovsk Institute of the National Economy, examined the position and role of scientific organization of labor and management in the strengthening of social production. As exemplified by individual enterprises in the Sverdlovsk oblast, he showed the effectiveness of introducing measures to production for scientific organization of labor and management. In closing, the speaker acquainted the conference participants with the results of the Sverdlovsk Institute of the National Economy, a leader in this field.

N. A. Safronov, doctor in economic sciences (Scientific Research Institute of Labor), told of a work program being pursued by the collective at his institute in cooperation with other scientific institutions and vuzes in the land in scientific organization of labor and production management. A major trend in scientific organization of labor today, he emphasized, is the fixing of labor rates. The Scientific Research Institute of Labor in cooperation with the Central Job Output Office will elaborate materials to determine the scientific level of rates and quotas for workers and clerks.

The role of competition in resolving social, economic and ideological problems in the 11th Five-Year Plan was examined by V. G. Smol'kov, doctor of philosophy, chief editor of the journal "Socialist Competition".

He noted the growing role of competition in mature socialism and told of the positive experience gained by his organization; he also proposed measures aimed at eliminating current deficiencies. V. G. Smol'kov specifically believes that it is advantageous to establish vuz courses in socialist competition in order to train competition specialists, and to publish the necessary training literature and closely study theoretical research in competition.

N. A. Ivanov, chairman of the Scientific Organization of Labor Commission of the USSR Council of Ministers, doctor in economic sciences (Moscow Institute of the National Economy) touched upon the results achieved by the nation's vuzes in implementing the coordinated plan of scientific research in organization of labor. Considerable contributions have been made to the elaboration of theoretical and applied problems of NOT (scientific organization of labor) and management by Moscow University, Moscow Institute of Management, International Agrarian Institute, Leningrad Finance and Economics and Engineering and Economics Institutes; the Institutes of the National Economy of the cities of Moscow, Kiev and the Belorussian republic; Ural, Riga, Chelyabinsk Polytechnic Institutes and many other of the country's vuzes. But the increased efficiency of scientific research and its successful coordination are hindered by alterations made in scientific curriculums at certain co-executor vuzes after the plans of major scientific research projects have been approved by the USSR Minvuz; the lack of clear-cut calendar schedules, weak performance discipline and the ill-preparedness of accounting forms. The speaker explained in detail the problem of vuzes in carrying out the coordinated plan of the USSR Minvuz on economics in scientific organization of labor in the current five-year plan.

The report on the brigade form of organization of labor, which should become basic in the 11th Five-Year Plan, was given by A. K. Orlov, doctor in economic sciences (Chelyabinsk Polytechnic Institute). Economic science, he noted, is faced with the problem of giving theoretical justification to the nature of brigade work, discovering its patterns, and working out specific practical recommendations on that basis. Further development and improvement in the brigade form of labor organization, the speaker emphasized, is linked with the wide utilization of brigade self-support.

The formation and development of brigades, stated G. N. Cherkasov, doctor in economic sciences (Leningrad Finance and Economics Institute), is a complex, multi-leveled, still inadequately studied phenomenon, into which are interwoven technical, economic, social, legal and psychophysiological aspects. The brigade form of labor organization stimulates increased labor activity in the work, and in consequence a new productive force is generated. The speaker stressed the need to offer recommendations on defining optimum brigade size, interaction between shop stewards and brigade foremen, on improving accounting and wages and other issues affecting efficient operation of the brigade collective.

In the report given by P. F. Petrochenko, doctor in economic sciences (All-Union Correspondence Finance and Economics Institute), consideration was given to the problems of broad incorporation of collective forms of

labor organization, the development and application of scientifically grounded rates and quotas of labor. The speaker drew attention to the fact that the incorporation of brigade labor organization and application of rate-fixed jobs with a differentiation of living labor expenditure rates by sex and age requires that a new approach be made to the problems of ensuring the dynamic nature of the rates.

Improvement of forms and methods of material incentives--an important trend in scientific organization of labor--was covered in the speech presented by G. Kh. Gendler (Leningrad Finance and Economics Institute). The main thing today, he noted, is intensification of the relationship between a worker's wages and bonuses and his personal labor contribution and the final results of the collective's work; an increase in the stimulating role of these indicators in increasing labor productivity; improvement of product quality and economizing of all kinds of resources. In the 1980s, the speaker said, we are mainly faced with establishing a mechanism for material incentives which is adequate for mature socialism and the needs of scientific and technical progress, for the problems of increasing production efficiency by intensifying it from all standpoints.

Problems of scientific organization of labor and production related to the inception and development of agroindustrial integration were discussed in a report by V. N. Ovchinnikov, doctor in economic sciences (Rostov University).

The discussion was continued in workshop sessions.

In the workshop dedicated to theoretical problems of scientific organization of labor, professor M. A. Mel'nov (Sverdlovsk Institute of the National Economy) focused attention on the need for further development in the theory of scientific organization of labor, making it more applicable to the needs of applied economics; on improved training of NOT specialists; on the designing of textbooks for separate economic and engineering specialties. Scientific organization of social production--the topic of the paper presented by N. K. Mamyrov, doctor in economic sciences (Alma Ata Institute of the National Economy), dealt with improved forms of organization of social production which, he noted, acts to intensify the economy. Socialization has an important value in enhancing production efficiency. The speaker analyzed the new forms and trends in socialization and development of organizational forms of production in industry.

In elaborating the theoretical problems of NOT, the conference recommended that vuz departments working in the field focus their efforts on justifying the position of scientific organization of labor and management in the struggle to enhance production efficiency and work quality; on tackling problems of increasing the creative content of labor and gradual surmounting of its social heterogeneity; on the creation of a theory of study of labor processes based on scientific and technological achievements; on the study and generalization of foreign experience in scientific organization of labor; on criticism of bourgeois theories and the practices of capitalistic streamlining of labor. One of the basic directions to improve organization of labor in the 11th Five-Year Plan is the implemen-

tation of NOT requirements in the planning of new enterprises and in the revamping of existing ones.

In the area of brigade forms of organization and labor incentives, it was recommended that the scientific work-up of the theoretical foundations of division and coordination of labor be intensified; that the mechanism of managing brigade movement at the enterprise, sector and national economic levels be strengthened; that research on determining organizational technique and social psychology factors affecting work efficiency of the industrial brigade be developed; that experience gained in planning the development of brigade forms of labor at enterprises, in the sector and at the national economy level as a whole be generalized; and that the legal aspects of brigade forms of organization and labor incentives be worked out.

In discussing the social, psychophysiological and esthetic problems of NOT, primary attention in the papers given by G. M. Lisovskaya, doctor in medical sciences, G. A. Bushuyeva, candidate in economic sciences (Sverdlovsk Institute of the National Economy), G. N. Khubayev and R. L. Sheynberger (Ufa Aviation Institute) was directed to the analysis and means of improvement of labor conditions of various worker categories. The speakers touched upon the use of technical hardware to increase human work efficiency and endurance, the prevention and elimination of industrial fatigue; to provide psychophysiological relief and control the level of labor conditions using ASUP (automated production management systems).

The conference recommended that efforts be directed by vuz scientists to increase the effectiveness of sociological, psychological, physiological, health and hygiene and esthetic research to tackle the major problems of scientific organization of labor and production management; that assistance be given to enterprises in improving the labor conditions of women; that deeper study be made of the structure of industrial groups, the psychological microclimate, and the hiring and firing of personnel.

Problems in the theory and methods of labor rate-setting were discussed as they apply to various worker categories. The comprehensive justification of labor standards, outlook for development of a new specialization called "engineer-economist in organization and rate-setting of labor" were examined. In its recommendations, the conference noted the importance of broadening the sphere of labor standardization, increasing the quality and differentiation of labor consumption rates, the application of progressive quota and job rate materials, their justification on the basis of a more scientific level of labor rate-fixing; the use of scientific methods of labor consumption rate-setting in fulfillment of collective labor processes and their thorough justification on the basis of organizational, technical, economic, psychophysiological factors; study of the principles of modern economic and mathematical simulation in the process of management of labor rate-fixing, development of computerized methods to set labor consumption standards.

The problems of improving labor incentives were covered by a recommendation from the conference to develop the theory and practice of collective incentives, to work out comprehensive systems to stimulate labor collectives to achieve high end results, to improve the system of labor morale boosters by linking it with the enhancement of social activities of the working classes, with their intellectual and moral improvement, to ensure the communication and publication of encouragement of good labor practices for individual workers, brigades and collectives of the working classes.

Pursuant to the decisions of the 26th CPSU Congress on the implementation of the country's food supply program, the conference's recommendations underscored the need to continue research into methodological and theoretical problems of coordinated, efficient development of sectors in the agroindustrial complex; the conference also asked the USSR Minvuz to direct its attention to the improvement of educational plans and vuz programs to train engineer-economists and other specialists associated with work in the sectors of the agroindustrial complex, and to consider the possibility of training labor economists for agriculture in the country's vuzes.

In the socialist competition workshop, particular interest was generated by reports and speeches dealing with socialist competition in collective working situations and labor incentives, the sequence of developing individual socialist obligations, evaluative criteria for determining the winners in intra-brigade competitions. The speakers felt that enterprises have not been giving enough attention to the organization of socialist competition on a scientific basis, and that scientific economists are not working on this complex problem at a deep enough level. Even future labor economists have not been taking the course on organization of socialist competition at vuzes. Attention was directed to the need to strengthen efforts in the study of the interrelationship between the organization of competition and national economic planning, accounting, economic stimulation, and management of scientific and technical progress; to improve the forms of organization and methods of control of socialist competition at the brigade, enterprise, sector, region and national economic levels; to improve the system of material and psychological encouragement of competitors. A suggestion was made to ask the USSR Minvuz to introduce training of management and organization of socialist competition based on the specialization "Labor economics"; the conference feels it necessary, under the supervision of the All-Union Central Council of Trade-Unions and the State Committee on Labor and Social Problems, to work up a standard inter-sector list of indicators to determine the winners in the All-Union socialist competition.

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LABOR

THIRD SCIENTIFIC PERSONNEL CENSUS ADVOCATED

Moscow PRAVDA in Russian 1 Aug 82 p 3

[Article by L. Glyazer, candidate of economic sciences: "How Many Scientists Do We Really Have? An Effective Utilization of Scientific Potential"]

[Text] These days the national economy is based in many ways on scientific achievements. And science is motivated by people working in it. The level of scientific research depends to a significant degree on the qualifications, capabilities, and talents of scientists, as well as on conditions provided for their creative work.

But is it known how many persons work in Soviet science? At first glance this question seems very simple. The answer to it can be easily found in a statistical handbook. The fact of the matter is, however, that such an answer would be neither entirely accurate nor sufficiently satisfactory. Even in the most complete handbook, "The National Economy of the USSR," there is not a single indicator characterizing the number of scientific workers. These numbers are taken into account by two indicators.

The first indicator shows those engaged in science and in support of science, and includes all those who work in establishments and organizations included under the rubric of "Science and Science Support." These are scientific research institutes, archives, libraries, preservations, museums, research plants, hydro-meteorological stations, organizations for surveying future reserves of fish, whales, and other products of the sea, computer centers, and the like. The list includes institutions that could be considered scientific only by greatly stretching the definition (for example, surveying of products of the sea). At the same time, organizations that are indisputably related to science are not on the list (institutions of higher education [vuzes], in particular).

Insufficient grounds for the criteria, on the basis of which various institutions and organizations are included (or excluded) in the field of science or science support, obstruct the composition of an exact picture of the actual number of people working in science, what part of these "workers" belong to the category of primary personnel (scientists, engineers, laboratory workers, etc.) and what part to service personnel (typists, cleaning crews, librar-

ians, etc.). It is evident that these two groups engaged in science differ greatly (provided, of course, they are not used in vegetable warehouses). Meanwhile, the distinction is not captured by statistics at all.

The other indicator, used for characterizing scientific cadres, is named "Scientific Workers," which in my view is also not without serious defects. The appendix to the "National Economy of the USSR" yearbooks published methodological explanations in accounting for different statistical indicators. From them, it can be concluded that scientific workers are, first, all persons with science degrees and titles, no matter where they work; second, persons conducting research in scientific institutions or teaching in vuzes; third, specialists without science degrees or titles who are systematically engaged in scientific work in accordance with some approved plan in enterprises and planning organizations.

Thus, statistics include these groups of workers in the scientific worker category. We shall look at them separately.

Directors, chief engineers, chief economists, and other enterprise managers write in newspapers fairly often. Frequently, the signature under their articles is accompanied by the indication that the author is a candidate of sciences. So, did this mean that they are all scientific workers? I spoke to some of them, and they answered this question negatively. A scientist is a person who is providing a specific product of science, new scientific knowledge. In practice, though, even those workers who have science degrees do not provide this product. A dissertation raises the qualification level of a practitioner, but does not make a scientist out of him.

The same applies to some persons who hold science titles. Many persons in the art field are bestowed the science titles of docent and professor for their outstanding creative achievements and for successes in teaching. Their work is, of course, very important, but as a rule does not create new scientific knowledge.

In my view, the first group of workers can hardly be justified for inclusion in the category of scientific worker. It is an entirely different picture with the second and third groups. There, a great number of individuals in fact perform scientific work, but they are not considered scientists. The second group, for example, includes only the scientific-research personnel of scientific research institutes, and science instructors of vuzes. At one time in the 1930's, the inclusion of this group reflected the actual situation, but now, at the beginning of the 1980's, one must consider including employees of information science organs, experimental construction organizations, and many others who engage in research and the implementation of research results. Evidently, one must also include the 100,000 strong vanguard of graduate students in this group.

Let us turn now to the specialists of the third group, who -- if the same methodological explanations are followed -- systematically conduct research and work in accordance with an approved thematic plan, and work either at an industrial facility or a planning, construction-planning, or technology-

planning organization. In the absence of even one of the above mentioned criteria, a specialist in this group cannot be considered a scientific worker. It turns out that statistics exclude from their count of scientific workers a very significant number of individuals who conduct research, but for some reason are not included in the thematic plan or provide new scientific knowledge in agriculture, construction, general education, or other areas not counted in the methodological explanation.

As can be seen, it was sufficient to conduct a very simple analysis of the "Scientific Workers" indicator in order to be convinced of the seriousness of its shortcomings. It gives no idea of actually how many persons work in Soviet science, how many of them conduct basic and applied research, how many conduct experimental construction work, or how many are engaged in transforming scientific achievements into practice. Meanwhile, it is necessary to understand these indicators. Without this understanding it is impossible to evaluate the cadres that "comprise" the scientific potential. Only professionally trained scientists are able to utilize the capabilities of contemporary scientific equipment to the maximum degree. Only scientists with creative thinking ability can identify those "points of growth" where important discoveries are apt to develop. Only scientists who know how to foresee the consequences of experiments have the power to influence the development of society.

Scientists are laying new, unknown paths. To be a pioneer is an honor, but it is also very difficult. The 26th CPSU Congress has called for an increase in the role and duties of scientific workers, an improvement in research organizations, and a transfer of science onto the intensive path of development. To accomplish this, it is necessary to know the actual number of science cadres, the most important component of science resources. A move onto the path of intensive growth also requires an intelligible idea about the branch and qualification structure of these cadres. How many scientists are working in each field of knowledge, what is the level of their training, what fruits does their research bear? It is necessary to have precise answers to these and many other questions in order to better manage the training of cadres with higher qualifications and to strengthen operationally the most important fruits of their research.

How can this complex task be approached?

One should start, evidently, with a formulation of precise and clear criteria for placing scientific cadres in one or another category: Scientific-research, scientific-pedagogical, information science, and other personnel categories. Then, on the basis of these criteria, a list of scientific cadres should be made. Similar lists have already been made in our country. The first such list was undertaken in 1947, and the second in 1961. The twenty years that have elapsed since then were a period of rapid growth of Soviet science that brought significant changes in its economics and organization. In my view, the time is ripe and the need is there to conduct the third all-union listing of scientists. It will serve the purpose of utilizing scientific potential more effectively.

EDUCATION

ANALYSIS OF ENGINEERING TRAINING REVEALS FLAWS

Minsk SOVETSKAYA BELORUSSIYA in Russian 6 Jul 82 p 2

[Article by V. Uryvskiy: "Even a Shoemaker Needs Shoes: What Tomorrow's Engineer's Should Be Taught"]

[Text] Analysis of the level of VUZ training of automotive engineers working in design bureaus of motor-vehicle plants (MAZ, ZIL, BelAZ, UralAZ and others) has disclosed a number of defects in the present teaching plan. This was a study conducted by the departments of the motor-vehicle and tractor faculty of the Belorussian Polytechnic Institute and the department of large-load motor vehicles operating at the Minsk Motor Vehicle Plant; it showed in particular that future engineers require better training for a number of divisions of mathematics, automation, hydraulics and computer technology on methods of optimization of design solutions and tests of motor vehicles.

Research has made it possible to create new, improved versions of teaching plans providing for the required level of physico-mathematical and specialized training. These plans ensure strict sequence, interconnection and continuity in the study of different disciplines. The content and structure of theoretical and applied parts of the courses have been coordinated and concepts, terms and symbols have been unified. A philosophical direction in instruction has been provided.

And how do things stand in this regard with respect to the training of specialists at other faculties and in other institutes? Alas, most frequently, no one reliably knows of this: the questions have not been investigated, the conclusions have not been made. There is another important result of the study conducted at the motor-vehicle and tractor faculty: in order to teach well, one must know reliably what should be taught and constantly keep track of what new requirements practical work makes on specialists.

We know that the scientific-technical revolution has complicated the tasks of the higher school. Accelerated renewal of equipment and technology of production and a higher level of mechanization and automation of labor make it necessary to provide students with solid fundamental training in addition to applied knowledge. Today's specialist must combine in himself high professionalism, understanding and a desire for new skills, political maturity, the know-how of a researcher and the ability to work with people. For this end, there should be

reflected in teaching plans and programs not only all the present achievements of science and technology but also the results of long-term forecasting. The fact must not be forgotten that today's graduates of VUZ's will head scientific-technical progress in the next century. This is why studies on problems of higher schools, questions of scientific and methodological support of the teaching process, the creation of laboratory installations and instruments and the publication of textbooks and teaching aids are so urgent.

The organization of the teaching process on a scientific basis is not a new matter. But it is necessary to speak of it, inasmuch as research on problems of higher school, especially at technical VUZ's still do not occupy their due place.

Of late there has been a rapid growth in the volume of operational contract work relating to orders of production organizations. In the past five years, they have been doubled. Research on VUZ themes remains at the former extremely modest level. Little work is being done on problems of training of engineers, on integrated teaching of disciplines and on social psychology and other questions that are topical for higher school. The result is as in the old proverb—the shoemaker is without shoes.

There is no doubt that operational contract studies are necessary. Their being carried out according to the profile of the VUZ has a favorable effect on the level of training of young specialists. At the same time, due to the limited area and experimental base, it is necessary to establish at each VUZ while taking into account the existing possibilities rational correlations of the volume of research to orders of organizations and to the themes of higher school.

Today the basic indicator of scientific yield of departments is the economic effect. The results of studies on VUZ problems cannot be measured in rubles. Their economic and social effectiveness is not expressed immediately. But this does not refer to their lesser importance.

In order to change the existing abnormal situation, we believe that the system of incentives for work on problems of higher school should be significantly improved. In our view, among the indicators of the operation of departments, an important place should be occupied by research on VUZ subject matter, the introduction of results of scientific developments in the teaching process as well as preparation of teaching and teaching-methodological aids.

Growth of the qualifications of pedagogic cadres makes it possible to successfully solve the problem of the VUZ textbook. In this regard, the work experience of the "tractor" department of the Belorussian Polytechnic Institute and the "wheel-type tractors" at the Minsk Tractor Plant is noteworthy. Their staff members have generalized the materials of research on production organization and prospects of the sector's development. On this basis, a complex of textbooks, teaching aids and methodological instructions has been created. The structure of this complex is in accord with the logic of the production process. In other words, scientifically valid information is provided in conformity with the demands made on engineers.

Against the background of this experience in training of specialists at the motor-vehicle and tractor faculty of the Belorussian Polytechnic Institute, there can be clearly seen ways of improving the work of a number of other faculties and VUZ's, which so far have not paid due attention to the analysis of the quality of teaching work and its improvement.

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EDUCATION

UPGRADING OF RURAL SCHOOL FACILITIES, STAFFS URGED

Local Benefits from Small Schools

Moscow PRAVDA in Russian 23 Jun 82 p 3

[Article by L. Kolesnikov, secretary of Novosibirskiy CPSU Obkom: "The Fate of the Small School."]

[Text] Nine years have passed since the day of issue of the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for Further Improvement of the Conditions of Operation of the Rural General Educational School." It clearly would make sense to look back at what was accomplished in these years and to get at the core of new problems. This is necessary in the light of the decisions of the May (1982) Plenum of the CPSU Central Committee. In outlining the prospects for improvement of social and living conditions in the countryside, the USSR Food Program provides: "To Continue Work on Strengthening the Teaching Base of Rural Schools."

The first tendency to draw attention to itself is expansion of school construction with funds of farms. In the past years a total of 111 rural 10-year schools were opened in our oblast. An absolute majority of sovkhozes and kolkhozes now has secondary schools at the central villages. Today 75 percent of the rural children study at these schools.

But the contingent of pupils in rural schools is growing smaller from year to year. About 10 years ago, the average enrollment of pupils of the schools in the oblast was as follows: in elementary school--155, in 8-year school--155 and in secondary school--430. Today these indicators have been reduced respectively to 10.61 and 206. This tendency is also characteristic of the RSFSR as a whole, but in Siberia it is expressed even more strongly and particularly sharply in Novosibirsk Oblast.

A very acute problem arises that must be solved without solely relying on economic calculations. Traditional assessment of the small school, which uses economic considerations for its basis, does not take into account all concomitant social, moral, psychological and pedagogic aspects.

Indeed, direct outlays of the state per pupil in small schools are higher than in large ones. But if the small school is considered from broad national-economic positions, it is found that expenditures on the development of its material-technical base undoubtedly pay back for themselves. Practice shows that closing of the small school brings in its wake as a rule the elimination of important production sectors and the emptying of entire villages, and this is fraught with most palpable losses. On the other hand, bolstering of the small school can effectively contribute to stabilization of the population of villages and development of agricultural production.

One might take by way of example Berdskiy Sovkhoz of Iskitimskiy Rayon. One of its divisions is located in the settlement of Aleksandrovsk. Here with the funds of the farm and the resources of their own construction workers, an 8-year school was built with a gymnasium, workshops and specially equipped classrooms. But the village was considered "nonpromising," and the population in it rapidly decreased. At first glance, it would appear to be manifest squandering. But the new school literally brought life back to Aleksandrovsk. The people believed in its future, young families started to move here, and in several years the population reached almost 500 persons. This made it possible to create an irrigated field near the village, to strengthen other operational sectors and finally to increase annual production volume in the village to 1.7 million rubles, which is more than twofold.

In the same way, guided by the principle of advancing school development, the sovkhoz revitalized the villages of Roshchinskiy and Ryabchinka, where attrition of the population was replaced by rapid growth; on this basis, the annual volume of production of agricultural products in the villages rose from 1,606,000 to 3,423,000 rubles, which paid manifold for the costs of building the schools.

Yes, schools are the most important factor in the social development of the present-day village. The level of their operation largely determines the work orientation of the youth, relations in families and the general moral climate in the village. A good school is a weighty argument in the selection by parents of a place to live and work. For a person, frequently of no less importance than size of earnings and size of house is attachment to village, to the home one was born in, to neighbors and to the school one had attended and to which the children were going as well as to the cemetery, where close ones are at rest. The ignoring of such "details" results in the fact that most residents of small villages, including hereditary farms, on being forced to leave place of birth, do not move to large villages (as anticipated by planning organs) but rather to cities.

It is good that we have other examples. A single organism, for example, is presented by the general educational 8-year school and Kalachinskiy Sovkhoz in Karasukskiy Rayon. The younger generation familiarizes itself from childhood with the labor of its seniors. Youngsters work on the school plot and beginning with the 5th-year class in the fields and animal-husbandry farms of the sovkhoz: they grow vegetables, repair animal quarters, clean out pens, look after forested strips. Participation in productive labor within one's powers

is the duty of every child attending school. And here are the visible results of this vital connection of school and sovkhos: 16 milkmaids, 25 machine operators, 13 cowherds and 9 shepherds--all of them pupils of the local school.

Practice has taught us to preserve and bolster schools in small villages and to accept expenditures relating to their maintenance. We, of course, take into consideration a number of minuses. First, graduates of these "small outfits" on the whole lag in the level of knowledge and general development of their peers obtaining an education at large rural 10-year schools. The teacher-specialist in such a school is doomed to methodological isolation. Difficulties arise in the acquisition of equipment for schoolrooms and drawing pupils into art studies, technical creativity. But the main thing is that the young specialist teacher is frequently psychologically unprepared not only for work but also for living in an isolated village, where there usually is no housing and it is difficult to start a family. In the light of this, the future of small rural schools cannot help but evoke concern in us.

Is it possible to do without them? Where conditions permit--yes. And we have many such cases. In Suzunskiy Rayon, for example, 12 new model buildings of secondary schools were built in the course of two five-year plans. As a result, 96 percent of the pupils study here. The schools are provided with pedagogic cadres with higher education. Teachers have housing accommodations.

But it is not this way everywhere. Our experience convinces us of the intolerance of some sort of hackneyed solutions for the school network adopted without a comprehensive analysis of concrete situations. For example, in Vengerovskiy Rayon, children from remote villages are provided with boarding facilities at large schools, and there is almost no daily transportation. In this connection, the school children are cut off from their parents during the course of the week and over the course of many years feel themselves as guests in the family on Sundays and holidays. In Karasukskiy Rayon, at the request of parents and heads of farms, daily transportation of children has been practiced at Oktyabr' and Khoroshenskiy sovkhoses and imeni Zhdanov, Novaya Sem'ya and Mayak Il'icha kolkhoses. The bus makes three trips a day: in the morning, then on termination of the classes of the first shift and, finally, in the evening to take the children home who are engaged in study circles and extended-day groups.

But there is a hitch: there are not enough buses to extend this practice. Would it not be simpler under the conditions of lack of Siberian roads and extended cold frosts to arrange for the transportation of teachers on cross-country vehicles to the tiny remote schools than to transport children from remote places on buses? Such proposals have long been coming to oblast party commissions, but their realization, even on an experimental basis, requires interested and effective assistance from republic and union ministries of education and of planning organs.

There where it is impossible to do without a small rural school, maximum use should be made in our view of its strong sides. This requires solution of the question that teachers of such schools, who do not have a full load, be paid

the full rate. In the first stage, interested operational and public organizations should be granted the right of supplementing their pay.

Party organs should see to it in every way possible that sparsely provided remote schools be assigned married couples of qualified teachers and that they be helped in obtaining housing and in setting up an auxiliary farm. We are seeing to it that sovkhoses and kolkhozes provide teachers all the benefits and good things provided by the law so that the teacher would enjoy everywhere and at all times respect. The need exists for a long time of reviewing the problem of material-technical support of rural schools. We believe that more energetic measures should be taken for the creation of a system of specially equipped classrooms meeting psychological and pedagogic requirements of teaching in a small complete school. Experience already exists in the creation of specially equipped classrooms for the use of a number of subjects (for example, biology and geography, physics and chemistry and the like). But their provision (for our oblast a total of 16 specially equipped classrooms per year) cannot, alas, satisfy our requirements.

Today most small complete schools are located in new model buildings with a rather complex system of heating and power supply; they possess technical teaching aids relating to electrical engineering and automation. Schools, including sparsely equipped schools are increasingly getting tractors, combines, motor vehicles and trailer equipment. At the same time, the approach of planning organs to rural teaching institutions has changed little since those times when their material-technical base consisted of a globe, stoves and stables with horse collars. It would appear to be necessary to give the right to local soviet organs without increasing the general wage fund to introduce, based on conditions, "technicians-organizers" capable of servicing school equipment with skill and to free the time of the school director from such concerns for guidance of the teaching and educational process. In staff schedules, it is certainly necessary to take into consideration the existence in a school of extended day groups of which more and more are being started each year. They require additional outlays on the acquisition of equipment, table games and sports appurtenances.

But even excellent buildings and the most modern equipment will only be dead capital without an all-round developed teacher, who is knowledgeable, intelligent and in love with his work and the children.

We have many such wonderful pedagogs. They are the reliance and pride of Siberian schools. But circumstances make it necessary to speak first of a very troublesome problem. The fact is that due to the lack of scientifically based long-term plans for development of the school network and training of teaching cadres our oblast finds itself in a difficult position in regard to the supply of teachers. Now it is necessary to apply very great efforts and spend extra funds to rectify the situation.

Rural schools, small ones in particular, have the right to expect assistance from great science. We have in the oblast three branches of the academies--the USSR Academy of Sciences, the All-Union Academy of Agricultural Sciences and the USSR Academy of Medical Sciences. Pedagogic science is basically developing

on social principles. The only regular laboratory in the city of the scientific-research institute of the schools of the RSFSR Ministry of Education was discontinued despite our protests.

Life hurries us in regard to the solution of pressing problems; practical workers, of course, cannot wait for the recommendations of scientists concerning problems of education in Siberia, including the development of the small rural school. It becomes necessary to act on one's own "understanding and approach." Unfortunately, the search for optimal solutions through the method of trial and error is much more expensive.

Advantages of Old-School Modernization

Moscow IZVESTIYA in Russian 24 Jun 82 p 3

[Article by A. Yershov, IZVESTIYA correspondent, Ivanovo: "The School Changes Appearance"]

[Text] In the large modern village of Ozernoye, among fields and cheerful birch groves, much looks citylike: multistory residential buildings, stores, asphalt roads. Here a kolkhoz, peat enterprise and fishing operation are located. The village's proprietors display special concern for the secondary school, which after recent remodeling has changed its appearance.

Together with the school's director, Tat'yana Sergeyevna Osipova, who has been working here for more years than one, we walk through bright corridors and look at the unusually quiet classrooms. For the final-year students alone this is a tense and demanding time--the examinations are in progress.

"As a result of the remodeling, we were able to increase the number of classrooms and have transferred to the specially equipped classroom system of instruction," Tat'yana Sergeyevna says. "We now have the possibility of setting up in the school two extended-day groups, which will be attended during the school year by about 50 children. They prepare their lessons in regular rooms and enjoy recreation in cozy game rooms."

The present gymnasium could be the envy of any city school. It was originally planned to add to the building a small gymnasium. But the sponsors, primarily the personnel of Ozernoye Peat Enterprise, built on their own initiative a spacious accommodation with volleyball and basketball courts, sport equipment and have furnished auxiliary quarters. For the time of construction, they donated a powerful crane and sent materials. The finishing work was excellently performed by a student construction brigade from Ivanovo.

"We are interested in developing a material base for the school. At the present time, we are helping it with summer repair work and are expanding the building's athletic grounds," the director of the peat enterprise, A. Mel'nikov says. "Our children now study in excellent conditions. We obtain from our school good literate workers, who are constantly adding to the ranks of labor collectives in the village. Although costs were high--about 150,000 rubles--we believe they have justified themselves."

In Ivanovo itself, large-scale modernization of schools has been going on in recent years. Secondary School No 21 markedly stands out by reason of its extraordinary appearance: two capacious wings have been added to it. An assembly hall now exists in the school; it has seats for 250 pupils as well as a wide motion-picture screen, gymnasium and a shooting gallery. In place of the old dining room located in poorly adopted quarters, there is a new, large and convenient one. An annex contains three units containing specialized classrooms for physics, chemistry and biology. The total area of the school's accommodations has been tripled, which has made it possible to initiate one-shift studies and to set up 11 extended-day groups. The annex communicates with the old building through a gallery where it was decided to create a winter garden. The children look after the birds and fishes in aquariums, water plants and grow flowers.

The work on reconstruction of the building was completed in a short period of time by workers from Repair and Construction Administration No 1 of Ivremstroy Trust. A great deal of help was provided by the sponsors--collectives of Ivanovo Cotton Combine imeni Samoylov and the Construction and Installation Administration No 1 of Ivgorstroy Trust. Secondary School No 33 was recently renovated in exactly the same way. Because of a large annex, it was able to transfer to the specially equipped classroom system of teaching and to improve the physical training of the children. The school now has two gymnasiums and a swimming pool with four twenty-meter lanes. Four sport classes have been opened at this facility. Students of several neighboring schools use the swimming pool. The remodeling provided the possibility of seriously organizing on a new basis all health-improvement work with the children.

What is responsible for the establishment of school remodeling? The fact is that there are few school buildings in Ivanovo and the oblast that had been built in the prewar years. A portion of them belongs to the beginning of the century. Naturally, they do not satisfy present-day requirements relating to the teaching process. But it would not be economical to entirely dispense with such capital buildings. In Ivanovo Oblast, they have decided on taking the route of wide-scale remodeling of schools where, as it were, they are reborn.

In each individual case, the reconstruction of a building proceeds according to a special plan. Where possible, planners create individual sections for junior and senior students; they expand quarters for recreation and create spacious dining rooms, auditoriums and gymnasiums.

In the last few years, 10 schools have been remodeled here. This has provided not only an increase of several thousand pupil places, but what is even more important better teaching conditions have been created.

On beginning remodeling, builders inevitably take into account the historical-architectural value of the old building. Such was the case with School No 30, which is located in the very center of Ivanovo. The authors of the plan used many original solutions to preserve the old building's original appearance, despite the fact that the most modern "contents" were put in here. The main building is now connected to new units through underground corridors. While

such modernization is not cheap, in the final analysis it is nonetheless economically advantageous. The fact is that old schools are located in the center of the city, in its densely populated districts. The erection of new schools here would require tearing down many residential buildings and reinstallation of expensive communications and engineering structures. In modernization, use is made of ready-made heat, water supply, sewage and electrical networks. It is no accident that schools can be renewed in a comparatively short time, usually in the course of a year. Party and soviet organs provide tremendous assistance in reconstruction of schools.

But there are many difficulties. The rebuilding of an old building is done according to capital-repair norms. But inasmuch as in modernization of schools, it is also necessary to engage in new construction, these norms turn out to be inadequate. There are required reinforced concrete structures and construction machinery not provided in the conduct of ordinary capital repairs. No norms exist for payment of different kinds of manual work performed here. For these reasons repair and construction organizations of the RSFSR Ministry of Housing and Municipal Services are not eager to undertake the reconstruction of old school buildings, while construction organizations of the USSR Ministry of Construction do not handle such items as they have no plans for the carrying out of capital repairs. The time has come for Gosstnab USSR to specially allocate equipment and construction materials for the modernization of school buildings to those construction organizations which perform it. This progressive method should be put into law and put on a normal operational and financial basis.

At the present time, it is necessary to use in reconstruction work of schools the funds of industrial sponsoring enterprises and to concentrate funds on priority projects included in current repair work. Would it not be better to establish reconstruction of schools on a firm footing? We think that a more active position in regard to this question should be taken by the RSFSR Ministry of Education. The modernization of all school buildings helps to strengthen more quickly and effectively the material base of education and to speed up the introduction of progressive methods of teaching and educational work of teachers.

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