

the world, it is possible to observe, as in the laboratory, which elements in economic life are inseparable from a given system and which appear to possess the quality of universality.

Here again, however, the paradox must be emphasized from another angle. The management engineer from the United States who goes to Russia will naturally think that the place to study management is the shop. Yet in a sense he cannot find the essence of Soviet management there. Indeed, as you have probably been told by technical engineers returning from Russia, shop management has many weaknesses in the Soviet Union today. Those who know how long it takes to develop Scientific Management in any workplace and how slow has been the process of gaining recognition for the movement in the United States, can only be surprised that so great progress has been made in shop management in the Soviet Union in the brief period of fifteen years since the revolution, with the first ten of these disorganized by civil war, the intervention of western nations and the aftermath of these events. But more important is the fact that management in the U. S. S. R. is not to be studied in the local unit but in the total national economic life.

It is the subject as a whole, then—"How is socialized industry administered?"—that I must emphasize. But I have advisedly taken the title, "Observations on Management in the Soviet Union," in the laboratory sense of the word "observations." I give you, so to speak, a batch of notes in the hope that you will continue these notes either through first-hand observations in the Soviet Union or through critical and discriminating study through the reports of others. And let me urge that you apply to the reports of those who are writing on this subject today rigid tests of accuracy, for management in the Soviet Union has reached a stage of experience where the mere cursory inspection by travelers without experience in research or in management cannot discover the significant facts.

In seeking to make observations on the procedure of developing the second Five Year Plan, I narrowed the question further to the coal industry because I had had some opportunity in the past to observe conditions in the coal industry in the United States. Moreover, the theme which had been the center of interest in our studies in the coal industry, and to some degree in other industries, in the United States was "labor's participation in management," and in the U. S. S. R. this question as to the extent of centralization or decentralization and the share of the workers in the making and administration of a planned economy had an important place in my inquiry. In other words, I wanted to know where authority rests in the management of industry in the Soviet Union. Who makes decisions, and upon what basis of fact and knowledge?

Let us begin with these questions not in the offices of the Gosplan in Moscow, but in the mining region of the North Caucasus, in the Donetz Basin, which was expecting to produce 60 per cent of the coal required by the second Five Year Plan, or more than double the production planned for this region in the past five years. Following inspection in the mines and talks with the miners underground and in the communities where they live, we met in conference the chief engineer of the coal trust of the North Caucasus, representatives of the labor department and the planning department of the trust, the president of the trade union of the region, and the director and the chief engineer of the nearest mine. These were administrators, not planners; but as administrators they have a definite function to perform in assisting the State Planning Commission in gathering the material necessary for planning the coal industry. The regional administration which they represented is responsible directly to a division of the Council of People's Commissars in Moscow which has to do with the All-Union administration of heavy industry, including fuel. This All-Union administra-

tion functions through some eighteen trusts. Each trust has a chairman with one or two assistants constituting the board, and each is divided into several sections, including (1) planning, (2) industrial technique, equipment and the like, (3) labor, with a director in charge of each section.

The labor department has three main divisions: the first, the economic section, has to do with all questions of personnel, including selection of workers, wages and costs of production; the second has to do with what are called technical norms, including standards of output, length of working day, and all such questions as those involved in piecework, bonuses and the like; the third deals with housing and cultural matters, sanitation and the food supply.

The trust deals directly with the local industrial unit, which may be a single mine; or two or more mines near together may constitute a unit. Each local industrial unit has a director and a chief engineer. The North Caucasus trust is composed of eleven industrial units and a department for development of mines for future operation. It supervises also the management of a plant for manufacture and repair of underground equipment. Each industrial unit has a labor department with parallel functions to those already indicated for the labor department of the trust. The trust reaches only to the industrial unit and its board. Local mine management is the responsibility of the director and the chief engineer; that is, it rests in the local unit.

The relation of the local labor department to the labor department of the trust works two ways. Norms of output which are developed as standard must of course be applied under the constantly changing conditions involved in the digging of a mine. It is in the local industrial unit, and indeed in each pit, that norms or standards are first formulated. The labor department of the trust gathers them up in written form. There are textbooks or manuals which embody them. These then become the guidance of the local units, which, however, through the local labor department of the mine must see that they are maintained. Sometimes a condition arises which is not covered in the standard procedure, and in that event a staff member is sent from the labor department of the trust to deal with the miner at work underground and the labor department of the mine. The director of the local industrial unit corresponding to the superintendent of a mine in the United States, who, as already indicated, is appointed by the director of the trust, appoints all local directors, including the chief of the pit or the mine foreman. The director of the trust is in turn appointed by the board of the trust, who in turn are appointed by the administrative officials responsible to the Council of People's Commissars.

It was the president of the trade union who answered our question as to the relation of the trade union to the labor department. He described the structure of trade unions in the U. S. S. R. They are divided industrially. All workers around the mines belong to one union. The trade union has its regional or "rayon" headquarters, and each mine or industrial unit has its own trade-union committee. The workmen in the mine are divided into groups known as brigades, and each brigade has its own representative in the trade union.

Each local union or trade-union committee in a mine has sections which correspond to the labor department of the trust and to the labor department of the industrial unit, thus enabling the trust and the local management to function with the trade union on the following subjects: (1) planning and administration of wage rates and standards of output; (2) protection of living and working conditions, including management of central dining rooms and other matters having to do with the standard of living, in which the union either takes full responsibility or acts as a constant critic of the administration and

a stimulus to its improvement; (3) cultural provisions; such as organization of "Red Corners" for reading and discussion, libraries, classes, and in general the activities of workers' clubs. A committee on conflicts deals with disputes. It includes two representatives of the union, a representative of the trust, and a direct representative of the workers, elected by them.

The function of the trade union in relation to all of these labor standards, in the words of its president, is "control." To one concerned with Scientific Management in the United States, this idea of control, voiced by the trade-union president in the exact meaning of Taylor's principles, was of great interest. He told us that the setting up of standards was regarded by the workers as a technical problem for experts, but that control in administering standards was a function in which the trade union had a responsible part. If workmen in a mine cannot agree regarding the application of standards set up by the technicians, an industrial conference is called, which includes the workmen involved, and they endeavor to reach an agreement. If this is impossible, the dispute goes to the conflict committee, and it may go higher if settlement at that stage is impossible. The next steps would be through national officials of the union on the one hand and representatives of the administration of heavy industry on the other hand, and possibly representatives of the Communist Party if the issue were of great importance.

Later in our conference, among the first questions put to us about American conditions was an inquiry by the president of the trade union, who asked: "In America, who controls standards of work or norms in the mines?" Those of you who are familiar with the sad lack of true Scientific Management in our mines and with the recent collapse of those methods of negotiation whereby the trade union participated in the application of standards, will readily understand the difficulty which we had in answering this question.

Of course all regional arrangements are subject to policies and conditions adopted for the industry as a whole in all regions. For instance, basic wage payments are determined by national agreement to which the trade union is a party. Labor laws administered by the Joint Commissariat of Labor set standards which must be observed in regional administration.

All of this information relates, of course, to the actual management and administration of the mines, not to the planning of the coal industry. We turned at this point to planning, and particularly to the role of the workers in it. How much do they share, for example, in the decision to more than double the output in the North Caucasus in the second Five Year Plan?

It was the trade-union president who immediately answered the question, followed by the chief engineer of the trust. The president of the union told us that the Five Year Plan is made by the working class itself. In each mine a temporary control committee is named, consisting of a representative of technicians, two representatives of the planning division of the administration, two representatives of the trade union, and six workers selected directly by the miners. This committee in each mine discusses what that mine can do in the next Five Year Plan and sends to the regional trust a report which in turn is conveyed by the trust to the State Planning Commission.

It may be a matter of interest to know the answer to our question as to what were the main outlines of the second Five Year Plan as actually suggested by these committees in the North Caucasus region. The plan at that moment was in process of development. The representative of planning of the North Caucasus trust answered the question, describing three main points of emphasis for the second five years:

1. In opening new mines, a kilometer of coal might formerly be left between two shafts. Pits in this region are now to be

constructed so that 25 kilometers of coal will be worked out in the course of 60 to 65 years. By forecasting the amount of production per year, an equation can be worked out which determines the most effective area of coal to be taken out through one shaft, and hence the distance between shafts is estimated.

2. Mechanization is to be pushed as rapidly as possible, first, in order to solve the problem of shortage of labor, and secondly, in order to get the mines equipped for a permanently adequate rate of production. In this region at the present time the work of undercutting is 62 per cent mechanized; the conveyor or loading system, 40 per cent; and underground transportation, including emptying of cars at the tipples, only 3 or 4 per cent.

3. The main task is improvement of quality and utilization of by-products. In the first Five Year Plan in mining, as in other industries, quantity was the point of emphasis. To deal with the quality of coal, a new plant has been planned for preparation of coal, with the aim of handling six to eight million tons a year.

Incidentally, it may be said that the by-products of coal are richest in the Siberian mines, and work is going forward on such methods of preparation as will conserve them. In the North Caucasus region an experiment is under way to make gas by direct burning of coal in the ground, without extraction. Obviously in these two directions the work of research may at any moment result in far-reaching changes which will directly affect current plans for coal production. But these circumstances would be dealt with by the institutions of planning.

So much for the administration of the coal industry in the locality and the region and the relation of these administrative units to planning. It may be the clearest procedure now to shift the point of view to the offices in Moscow where the plan is made and administered for the Union as a whole. Before making that shift, however, it should be pointed out that the State Planning Commission has its regional representatives in the county or region planning office of the North Caucasus in Rostov, which is nearest to the coal mines visited by us. In that office the plans for the whole region for the mines and all inter-related industries, including agriculture, are studied for submission to the State Planning Commission in Moscow. The next unit of planning is the republic. For example, the Ukrainian Republic makes for its own area a plan which must take account of the plan made for that portion of each industry, such as coal, which is within the boundaries of the constituent republic. These plans, both for the region as a unit and for the republic, are based upon the needs of their respective areas and represent the contribution of the area to the All-Union plan.

On the administrative side, as already pointed out, the coal trust is part of the Commissariat of Heavy Industry under the Council of People's Commissars, but the coal trust of the North Caucasus region, like every other trust, and its constituent industrial units have also been included in the conference called by the State Planning Commission in the preparation of the second Five Year Plan. This twofold task of administrative units acting as advisers in planning is an interesting aspect of management in the U. S. S. R. They act as advisers with reference to planning and then as administrators in carrying out the plan. They have a relationship and a scheme of organization and procedure which is functional for the industry as a whole and for related industries comprehended in the term "heavy industry," while at the same time they form part of all plans of locality, region and republic in which the constituent units of the mining industry are situated. A notable feature of the second Five Year Plan is this functioning of the smallest unit of operation in the making of the plan.

We may now trace the administration of the coal industry, including its advisory relation to planning, back to the offices