High rates of industrial production can only be attained if the activities of all branches of and at all levels in a state undertaking, from the ministry down to the actual production team, are organized scientifically.

In the Krasnogvardeets Combine, now that production and management have been organized, steps are being taken to perfect the organization of labor in the factory. This is not a chance sequence of events. No measures for the scientific organization of labor will produce their full economic results if management is defective. It was for this reason that the creation of the best possible control structure was set as the primary task for the Combine. The creation of the Combine, one of the first in the country to combine different branches of industry, aimed to abolish all the separate, independent undertakings concerned with biomedical engineering in the Leningrad area and to concentrate all productive capacity and technical resources for the creation of a biomedical engineering industry. The next task was to determine the best forms of organization and management for the factories within the Combine to ensure that they effectively fulfilled the purposes for which the Combine was created.

The first step was to draw up a scheme of control within the Combine. The guiding principle here was that the lines connecting different levels and units in the structure represented the channels over which information would travel, the scheme as a whole constituting a model of control by the Combine through movement of information. The scheme was based on the feedback principle; secondly, it was required that any information from executive to director or from director to executive should travel by the shortest route; and, thirdly, each unit in the scheme should have as few information channels as possible.

A graphic scheme of control does not, however, tell us how many workers, engineering technicians and administrative staff will be required to ensure normal functioning of the entire industrial unit. In conjunction with the State Institute for the Planning of Instrument-making Factories, plans have been considered for specialization within undertakings; they define the conditions in which specialization may be necessary and the directions development should take in each subdivision, each shop and section, while they also give the necessary calculations for the number of technicians required. The technical standards for certification of issued products have been revised, and the level of technology required for the production of each article has been defined. In fixing standards of qualification and numbers of engineers required, consideration has been given to present-day technological levels and to combined medical and technological requirements in respect to medical instrument construction over the next few years. Estimates showed that there was need for the expansion and strengthening of technical services, for the creation of new subdivisions, such as a standards section, a section for the mechanization of engineering accounts and calculations, and so on. Results have not been slow in showing. Whereas, before formation of the Combine, not more than 18% of all components were standardized in respect to labor costs, the figure is now 37%, and engineering calculations have been mechanized to the extent of about 60%.

Combined mechanical and automated machine shops have been organized, while the capital repair of equipment and the manufacture of materials for mechanization and automation have each been centralized.

As part of the reorganization plan, sections and services have been centralized as far as possible in the main factory, so that duplication was eliminated, and new central subdivisions were created.

The expansion of existing technical services and the creation of new ones required that there should be more exact definition of their functions and the order of their relationships to one another. Rules were therefore formulated defining the functions of the various divisions and services in the Combine, and, at the same time, instructions on duties were drawn up for all workers in the various shops.

The control structure of the Combine is gradually being improved. Thus, as part of the systematic improvement in the organization of production, labor and control, the section dealing with labor and wages has been reorganized into a section for the organization of labor, wages and control. This has in its composition a laboratory for the scientific organization of labor, which is divided into three sections, namely organization of production and control, organization of the work of ordinary workers and engineer-technicians, and a section for investigation and establishment of norms for technical standardization.

General guidance on scientific organization of labor in the Combine is given by a council for the scientific organization of labor, through its general director. At its meetings, the council examines annual and quarterly plans for shops and sections, receives reports from the head of the division for the organization of labor, wages and control on the introduction of any important measures connected with the scientific organization of labor etc., and makes its recommendations, which, when confirmed by the director general, become orders.

Plans for the scientific organization of labor are formulated and introduced in accordance with methods which have been developed by the laboratory for the scientific organization of labor (see Fig. 1).

In practice, a tendency has been noted in this Combine, as well as in many other Leningrad factories, to replace individual plans for the scientific organization of labor by study of the organization of the production and work of the shop, and to draw up plans for the scientific organizations of labor in the shop as a whole. The work of each subunit within the shop can then be organized to comply with the requirements in respect to the scientific organization of labor for the shop as a whole. For example, such matters as reduction of noise, centralized sharpening of tools, establishment and maintenance of a standard temperature, supply of components to the bench and so on are matters to be determined for the workshop as a whole. A section of the workshop scheme for the scientific organization of labor is given below (Table 1) by way of illustration.