THE ALL-UNION RESEARCH INSTITUTE OF MEDICAL INSTRUMENTATION ON ITS 40TH ANNIVERSARY

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The roots of the history of the Soviet medical engineering industry lie deep in the past of our native land. Archaeologists have found that the first surgical instruments were being made in the Kiev Rus in the 12th century. The 250th anniversary of the oldest medical-instruments factory in the USSR, the Leningrad "Krasnogvardeets" factory, was celebrated five years ago. The V. I. Lenin Medical-Instruments Factory in Voronez recently celebrated its 150th anniversary. The Sukun Optical-Mechanical Factory dates from 1705.

However, the formation of the medical-engineering industry as a distinct branch did not begin until the years of Soviet rule. In 1935 the factories making medical-engineering goods, few in number and varying in size, were brought under the unified administration of the "Medinstrument" and "Medoborudovanie" organizations created by the Health Department (Narkomzdrava) of the USSR.

In October, 1936, the Central Laboratory of the Medical Instruments Industry was organized, with the task of unifying the technology and ensuring technical progress in the new branch of industry. With this laboratory as its origin grew the All-Union Research Institute of Medical Instrumentation (VNIIMP).

The small staff of the laboratory was engaged mainly in solving technical problems to do with increasing the output of mass-produced medical goods and improving their quality. At the same time work began on the development of original designs of instruments for traumatology and orthopedics, apparatuses for mechano-therapy and physiotherapy, anesthetic machines, and sterilizing, disinfecting, and dental equipment.

During the Second World War, when the importance of a well-equipped medical service was particularly evident (as we know, 76% of all wounded were returned to duty through the efforts of Soviet physicians and surgeons), the USSR State Defense Committee decreed the formation of an All-Union Research Institute of the Medical-Instruments Industry (VNIIMIP) based on the Central Laboratory of the Medical-Instruments Industry. This was in 1944. The Communist Party and Government of the Soviet Union were looking to the decades ahead and, in order to develop the medical engineering industry, despite the difficulties of wartime, they accepted the need for organizing a research center to study the design and production technology of medical instruments and equipment. In 1945 the following departments were organized in VNIIMIP: design, technological, hot treatment of metal, covering, standardization and normalization, and a technical information office. In 1945-1946 brilliant nickel plating and thin-layer nonporous chromium plating processes; a new technology for the manufacture of forceps, syringes, and injection needles; and a precision molding technology were developed and introduced at the factories.

In 1947 VNIIMIP was renamed the All-Union Research Institute of Medical Instrumentation and Equipment (VNIIMIO). Since that time its role has been its present one of a research organization: A research

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program was published, the first six Candidates of Sciences were enrolled, a scientific-technical council was organized, postgraduate work was started, and a dissertation group was formed, and permanent working links were forged with scientific-medical institutions. The Institute extended its work in the field of electromedical physiotherapeutic apparatus, optical instruments for physiotecNical measurements, investigation of the functional properties of medical goods, mechanized technology of mass production of surgical instruments, and the electrochemical treatment of metals. In 1948 work began on the creation of ophthalmoscopic and endoscopic apparatuses and the development of surgical suture apparatuses. In 1949 planned development of anesthetic machines and illuminating engineering equipment began.

In 1951 the Research Institute of Experimental Surgical Apparatus and Instruments (NIIEKhAI) was created on the basis of one of the instrument subdivisions of VNIIMIO.

After the creation of NIIEKhAI, with its medical-instrument program, VNIIMIO was faced with the task of changing its profile toward concentrating its efforts mainly on medical instrumentation, the most complex section of medical engineering.

The orientation of the scientific program toward instrumentation, the objective result of increasing demands of Soviet health care, was attended by considerable technical and organizational difficulties. Not only did the standard of training of workers at the Institute have to be raised, but the technical equipment of the research laboratories had to be entirely replaced, and the factories producing the goods themselves had to be prepared for the adoption of mass production methods for products requiring a higher standard of production. All these demands arose in a branch with no traditions whatever in the field of instrumentation.

In 1955 the experimental factory of the Academy of Medical Sciences of the USSR was transferred to it is inconceivable now how the research and experimental designing work could otherwise have been undertaken.

In 1956 the Institute was rehoused in a specially constructed building on Staroe Chaussee, a move which enabled the range of laboratory techniques and the volume of experimental production to be expanded to meet the new demands.

In 1961 the Leningrad Branch of VNIIMIO was organized, with a special interest in the development of laboratory medical-engineering products.

In 1966, in accordance with its increasingly complex profile, VNIIMIO was renamed the All-Union Research Institute of Medical Instrumentation (VNIMP), and was quickly transferred to a new building on Timiryazev Street, where it is today.

Since the time of formation of the Ministry of the Medical Industry (1967), VNIMP has been part of the system of that Ministry, in which it is the largest scientific-research organization with a medical-engineering profile.

The staff of the Institute is at present engaged in research of widely different character and direction both in medical instrumentation and in the manufacture of medical-engineering goods as a whole. While playing the part of elder brother in the family of research and experimental design organizations of the branch, in some directions VNIMP has the duties of the head organization.

The medical-engineering industry carries out mass production of hundreds of models of medical-engineering goods developed by VNIMP in collaboration with the factories, and if the participation of the Institute in technological products during all the years of its existence is taken into account, it can truly be said that there is not a single article that does not contain some contribution representing the work of the staff of the Institute.

In the choice of the scientific program for the creation and improvement of medical-engineering goods, specialists of the Institute (among which there are more than 120 Candidates and Doctors of Sciences) are by tradition oriented toward requests and suggestions from leading clinical and scientific medical institutions in the country. Direct and continuous contacts are made on a wide scale with medical scientists who can transform modern tendencies for the development of medical methods into medical-engineering requirements to be met by future medical-engineering products. These close links with medical practice are responsible for the fruitfulness of the scientific and engineering research carried out at the Institute.

The range of anesthetic machines and respirators created with the predominant participation of the Institute and manufactured by factories of the medical industry is making it possible to render medical aid at the highest technical level in surgery, resuscitation, and the diagnosis of diseases of the respiratory organs;