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CAREER OF ACADEMICIAN A. I. BERG

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Academician Aksel' Ivanovich Berg is celebrating his 60th birthday and 30 years of scientific and pedagogical activity. His name is well-known in Soviet public life as well as in scientific and radio engineering circles. His activity has been exceptionally diverse. Berg conducts important scientific and administrative work in the Academy of Sciences USSR, in which he heads the All-Union Scientific Council on Radio Physics and Radio Engineering, and also in one of the largest scientific research institutes of the country. Berg also devotes a great deal of time to the All-Union Scientific and Technical Society of Radio Engineering and Electric Communications imeni A. S. Popov (VNORiE). He is chairman of the administrative board of VNORiE.

Since the inception of the radio amateur movement in the USSR, Berg has actively aided its development. Since 1948, Berg has been the permanent chairman of the Exhibition Committee for all-union radio amateur exhibits. He is also a member of the editorial board of the periodical Radio. In addition, Berg participates in the work of a number of scientific councils of higher educational institutions [vuzes] and scientific research institutes and in the editorial boards of scientific and technical journals.

A student of such outstanding scientists as Academician V. F. Mitkevich, Prof A. A. Petrovskiy, and Prof I. G. Freyman, all of whom did much for the development of radio engineering in the USSR, Berg followed in the footsteps of his teachers. After special and general education in naval training institutions, Berg served as a watch, gunnery, and navigation officer in warships of the Baltic Fleet. During the Civil War, Berg acted as navigator and commander of submarines (the Pantera, Ryś', Volk, Zmeya, and others) of the Soviet Fleet on the Baltic. Even at that time, he correctly evaluated the potentialities and importance of radio engineering for the navy and for other branches of the economy. Therefore, when studying at the radio engineering faculty of the Naval Academy, he selected radio engineering as his special field.

Berg's research activity in radio engineering began in 1925 in the radio laboratories of higher naval training institutions. The basic trends in this research were the study of the physical processes occurring in electronic devices, the mathematical basis of theories, and the development of engineering methods for the analysis and design of electronic devices.

In the many books and articles written by Berg, important problems of radio engineering have been analyzed, including the following: the operation of electron tubes in amplifying and transmitting circuits; the theory of deviation of radio direction finders on ships; the theory of frequency multiplication; the theory of modulation of radio transmitters; the theory of self-excitation and crystal stabilization of vacuum-tube oscillators; and the analysis of operating conditions of modern transmitting tubes. In writing these books and articles, Berg drew on experimental data obtained by his own research. A list of his published works alone would include about 60 titles. Among these works are several basic texts, such as Osnovy radiotekhnicheskikh raschetov (Principles of Radio Engineering Calculations) and Teoriya i raschet lampovykh generatorov (Theory and Analysis of Vacuum-Tube Oscillators).

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Berg's papers and books contain engineering calculations of all the parameters determining the operating conditions of transmitting tubes under conditions of self-excitation and separate excitation, for a tuned and detuned load, for a complex or simple input wave form, under amplification and frequency multiplication conditions, and for various types of modulation. These works were of great importance for the development of the theory and engineering of radio transmitting devices.

Berg's scientific-historical research has played an important role in establishing the priority of Russian and Soviet scientists and in popularizing the outstanding accomplishments of Soviet radio engineering. Through many years of research and study of historical documents, Berg made an important contribution to the history of radio engineering by again substantiating the undisputed priority of A. S. Popov in the discovery of radio. His work on this subject and the symposium of documents entitled Izobreteniye radio A. S. Popovym (The Discovery of Radio by A. S. Popov) published under his editorship are well-known.

Berg has given and continues to give much time and attention to the training of radio specialist cadres. While still in training at the Naval Academy, he gave a course on vacuum tubes at one of the higher educational institutions. Subsequently, Berg did considerable teaching at various educational institutions of the army and navy and in the electrophysical faculty of the Leningrad [Electrotechnical] Institute imeni Ul'yanov (Lenin). Berg also devoted considerable time to the training of scientific and teaching personnel. He has given radio engineering training to many scientific and practical workers whose works are well-known to radio specialists, e.g., S. N. Arkhipov, A. A. Genkin, S. A. Drobov, L. A. Kotomina, S. T. Panfilov, A. P. Sivers, and V. I. Siforov.

We should also emphasize the particular importance of Berg's work with practical workers of the Soviet radio industry. This participation of an important scientist in the work of industry enriches both his activity as a scientist and the efficiency of production workers. Many of Berg's students have achieved wide acclaim through their work in industry, e.g., B. V. Voytsekhovich, V. V. Milyutin, and G. A. Pavlov.

The active organizational and scientific and technical activity of Berg in a number of scientific organizations has been characterized by his ability to see new methods and potentialities for the development of radio engineering, to discern new trends in this rapidly expanding field of science, and to set up research works of wide scope and bring them to practical realization.

The scientific, pedagogical, organizational, and public activity of Berg has been deservedly acknowledged and praised. In 1930, he was awarded the title of professor, and in 1936 he was awarded the degree of Doctor of Technical Sciences. He was elected a Corresponding Member of the Academy of Sciences USSR in 1943 and an Active Member of the same academy in 1946. In 1951, Academician Berg was awarded the A. S. Popov Gold Medal by the Presidium of the Academy of Sciences USSR for outstanding work in the field of radio engineering. For his service in developing Soviet science and radio engineering, Berg has been given six orders (including two Orders of Lenin) and four medals by the government of the USSR.

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