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YU. V. LOMONOSOV (1876-1952) – FOUNDER OF THE LOCOMOTIVES' TRACTION THEORY – FOUNDER OF SCIENTIFIC PRINCIPLES ON RAILWAYS' OPERATION

Yurii Volodymyrovych Lomonosov (1876-1952) – professor, the scientist in the field of trains' traction, the interaction of the rolling stock and track. He created the "Office on locomotives' investigation" (1912-1917 pp.). The project of one of the first national locomotives was created under his direct leadership (built in 1924 in Germany). During the 1918-1920 - th Yu. V. Lomonosov was the member of the board in the People's Commissariat of communication lines. In the 1920-1923 s – he became the head of the Russian railway mission for locomotives' purchase abroad. In 1927 he moved to permanent residence abroad. Scientific works of Yu. V. Lomonosov are devoted to the theory of trains' traction, rolling stock research, scientific fundamentals of railways' operation. He is considered to be the inventor of the world's first diesel locomotive and diesel locomotive with electric transmission.

The reason for unattention of the scientific community to Yu. V. Lomonosov's personality lies in the fact that in 1927 he left the USSR, remained abroad and became those who did not return. That's why his scientific and technical achievements were "forgotten" for a long time. In the early twentieth century two groups of specialists independently on each other were engaged in creating diesel locomotives: prof. V. I. Hrynevetskyi and his students: O. M. Shelest, B. M. Oshurkov, and prof. Yu. V. Lomonosov with students O. I. Lypets and M. A. Dobrovolskyi.

Actually both group leaders are the founders of locomotives' construction, authors of traction locomotives' theory and scientific bases of railways operation.

The researchers of Yu. V. Lomonosov's life and creative work note that during his stay in Kyiv, he finally convinced of the futility of locomotives' improvement and came to the conclusion that the future is with more economical cars - actually with internal combustion engines, instead of steam machines.

Professor Yu. V. Lomonosov began intensively working out options for diesel application in locomotives. Personally he explained his decision himself: "Being a railway man but not a specialist in internal combustion engines, I didn't come to the idea of diesel at once and not from the standpoint of future fuel problems but in search of the way out of these troubles, in which the railway sector posed by the lack of good water". That is why yet in 1909 Yu. V. Lomonosov began designing oil tanker based on diesel engine with friction transmission of the torque (from diesel engine to the driving axle of the locomotive) which provided weight reduction of the oil tanker and its cost. Tests of the novelty were conducted on the Tashkent Railway.

From August 1923 to June 5, 1924, he took part in solving important engineering tasks: the creation of the first domestic diesel locomotive with electric transmission. Yu. V. Lomonosov created a remarkable creative team of the engineers and scientists. The tests were held on a temporary station in Esslinhen. The Soviet government, representatives of foreign science and technology highly appreciated the locomotive system by Yu. V. Lomonosov. On February 4, 1925 the locomotive numbered Yu. V. №001 was brought into the list of existing locomotives on the railways of the Soviet Union. Yu. V. Lomonosov completed his engine using separate structures that had already been well tested in practice. In particular, the diesel engine was used on German submarines, Swiss traction motors - on Swiss and Japanese electric locomotives. Diesel power amounted to 1200 horsepower. Even the first tests confirmed significant advantages of the electric locomotive over diesel.

Outstanding engineer Yu. V. Lomonosov (1876-1952) realized the prospect of replacement steam locomotives by diesel locomotives in the early twentieth century. He was the first in the world who succeeded in creating a workable trunk diesel-electric locomotive, which was put into operation in 1925 and has worked in the Soviet Union for 30 years, having passed 1 million kilometers. This story captures the courageous prediction of Yu. V. Lomonosov, his technical genius and far-sightedness.

Keywords: Yu. V. Lomonosov, railway transport, trains' traction, railway operation, railway transport management, diesel locomotives

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