

In Memoriam: Professor Evgeny (Eugene) Rivin, 1932–2011

Evgeny Rivin (known as Eugene Rivin) passed away after a long battle with illness on June 6, 2011, five days short of his 79th birthday. He has been a Fellow of ASME, SME, and CIRP—International Academy for Production Engineering (CIRP—French acronym for *College International pour la Recherche en Production*) and had a distinguished career in industry and academia.



Evgeny (Eugene) Rivin
June 11, 1932–June 6, 2011

Eugene obtained his engineering education at the Moscow Machine Tool Institute (STANKIN—Moscow State Technological University) with a Mech. Eng. Diploma with honors, degree equivalent to M.Sc., 1954, and Candidate of Science M.E. equivalent to Ph.D., 1962, crowned with the degree of Doctor of Sciences in Mech. Eng. (Sc.D.) in 1971—the highest degree in the USSR, certified by the State Supreme Attestation Board.

After three years in the manufacturing industry, in 1957, Eugene Rivin joined the renowned Machine Tools Research Institute (ENIMS) in Moscow, and in 1968 moved to the Research Institute of Standardization, where he established and directed the Vibration Control and Advanced Machine Elements Laboratory.

Dr. Rivin immigrated to Canada in 1975 and a year later joined the Research Staff of Ford Motor Co. in the United States as Principal Staff Engineer. Since 1981, he has been Professor in the Department of Mechanical Engineering at Wayne State University in Detroit, where he was teaching Machine Design, and where in 1988 he became the Director of the Machine Tool Research Laboratory.

He was also Visiting Professor at the Institute of Sound and Vibration Research of the University of Southampton, UK, in 1987, and in 1988 worked with the Advanced Engineering Laboratory of General Motors Corporation. From 1994 to 1995, he led a successful Noise, Vibration, and Harshness (NVH)-related project at Ford Motor Co. In 1995 Professor Rivin co-founded and

co-directed The TRIZ Group for training and problem solving using TRIZ methodology (Russian acronym for the Theory of Inventive Problem Solving).

Professor Rivin's professional and academic career in manufacturing engineering, which has spanned over 55 years, provided him with an extensive experience in a wide range of issues encompassing machine tools, tools, and robotics. He was concentrating on design issues—structural dynamics and rigidity, dynamics of rotating systems, vibration and noise control, rubber in machine design, and standardization. He searched for the solution to problems through a three-stage approach: problem analysis, problem definition, and problem solving, in which he frequently used his favorite TRIZ. His R&D activities led to major contributions both theoretical and practical and were followed by the implementation of results obtained. His research was always aimed at a solution to a practical problem.

Professor Rivin was not afraid of bold, innovative approaches in search for solutions. Indeed, his creativity can be best judged by over 60 patents which were issued to him, of which 26 were granted in the United States; some of his patents are widely implemented in the United States, former USSR, and elsewhere in the world.

Since his first acclaimed paper on the stiffness of roller-bearing guideways published in 1955, written when he was still a university student, Professor Rivin published over 150 papers, 16 monographs, and a number of book chapters. He published US standards (ANSI) and earlier the standards in the former USSR. Some of the book titles include the following: *Mechanical Design of Robots* (1988); *Stiffness and Damping in Mechanical Design* (1999); *Passive Vibration Isolation* (2003), and *Innovation on Demand* (2005, with Victor Fey).

In his last fundamental work, *The Handbook of Stiffness and Damping in Mechanical Design* (2010), he established the position of stiffness as a rich, self-contained field of knowledge; he considered it jointly with damping, as in the case of dynamics and vibrations those are frequently closely interrelated. He was completing the book when he was already ill and aware that his intensive search for cure would not provide him with the desired solution. The Handbook is very well written and the rich material assembled in it makes a fascinating reading. The review of *The Handbook* was published in the June 2011 issue of the *ASME Journal of Mechanical Design*.

Eugene Rivin was a remarkable man—quiet and unassuming, a kind, decent man with a brilliant mind, always ready to explain and discuss, contributing his views inside and outside the meeting rooms. He was generous in sharing his knowledge giving invited lectures, keynote addresses, and seminars. He has consulted for many of the most important manufacturing companies. He enjoyed teaching and was a devoted teacher. His trips were timed tightly so as not to miss too many lectures, preferably not a single one. He received awards for his research and for excellence in teaching. He was a titan of work. Ingenuity was his hallmark. With his wealth of experience, common sense and clarity of thinking, he commanded respect. He was an inspiration to those who knew him.

With the passing of Eugene Rivin, we lost an esteemed colleague and a good friend, but he will live in our memory and his publications will continue to provide us with the rich source of his knowledge.

May his soul rest in peace.

Lucjan Kops
McGill University