

ION BASGAN

(1902 -1980)

A Romanian Inventor



Predestined to offer Romanian science and technology a series of far reaching achievements in the domain of oil-drilling improvement, Ion Basgan was, still is and shall remain one of the most brilliant Romanian inventors. Inspired by the new ideas of sonicity, Prof. PhD. Eng. Ion Basgan produced over 50 technical and scientific works that were printed in several specialized technical publications in various countries.

As a disciple and collaborator of the father of sonicity, Gogu Constantinescu, Ion Basgan, the oil industry engineer, distinguished himself in the realm of technical and scientific creation by manifold exceptional achievements, in the domain of oil industry, that later became worldwide priorities.

His special achievements pertaining to the oil-drilling technique were appreciated by George (Gogu) Constantinescu, the father of sonicity, as well as by other Romanian and foreign specialists: 'Method for improving the output and perfecting rotary oil-drilling, by percussion-rotation and hydro-mechanical pressures absorption' (Romanian Patent No. 22789/1934) and 'A new oil-drilling system taking into account hydrostatic pressure and long-distance sonic energy transmission by means of proportional heavy oil drilling rods and sonic oil drilling (USA Patent No. 2103137/1937).

Ion Basgan was born at the beginning of this century on the 24th of June, 1902 in Focșani, an old town in Vrancea county, in the South of Moldavia, in an over three hundred year-old family. His mother was known to be the offspring of an old Transylvanian shepherds' family. The peaceful life of this honourable family and its off-springs is in itself a living example of the general truth that native intelligence has always been a state of the spirit of the Romanian nation and a symbol of its perennial existence.

Endowed with an authentic intellectual capacity that was sustained by an unusual spiritual strength and a strong determination to study, Ion Basgan had graduated the Primary School No. 2 of Focșani and then attended the Secondary 'Boarding' School of Iași. As a pupil, he would always receive scholarship grants and prizes: his propensity for study allowed him to receive outstanding school performances. On the 5th of June 1920, he graduated the secondary school and was awarded a 'Steaua Română' ('Romanian Star') scholarship for the courses of the Superior School of Mines and Metallurgy (Montanistische Hochschule 5, Leoben, Austria) between 1920 and 1925. In 1933, he was awarded the doctor degree in technical sciences. Ion Basgan became famous thanks to the applications of his Rotary drilling method that became the most extensively utilized method in all oil – producing countries.

Based upon the principle of sonicity, the new drilling system brought about a technical revolution for the American oil industry. That was how the American economy would substantially increase its profit, through yearly savings of 1.8 billion dollars. Unfortunately, Ion Basgan, who died on the 15th of December 1980 and his descendants did not benefit from the Patent

ownership rights, to say nothing of the fact that the Romanian Academy (that awarded Ion Basgan the Dr. Cornel Nicoară prize in 1935), the Institute of Oil and Gas, as well as Politehnica University of Bucharest have failed on many occasions to render the due homage to Ion Basgan, the Romanian scholar who had dedicated his life and work to Romanian science and not only. His entire existence was a living proof that native intelligence is a dominant feature of the Romanian nation and not a mere accident of fate.

Many of the technical achievements of Ion Basgan, the inventor, represented the topic of extended debates in several periodicals and treaties, while they were also sources of inspiration for other specialists in their attempt to improve the oil drilling technique. The Foreword to one of Ion Basgan's works that had been published in the former USSR, in 1935, mentioned the following assertion of Prof. K. Tiscenko regarding the outstanding practical results that were obtained in oil production by former USSR and USA when applying Basgan's invention: 'compelling the oil – boring system to vibrate during rotary drilling and thus setting an alternative dynamic load on the base, a significant increase of the driller travel can be achieved. A.Z.N.I.I. tested this principle and proved that the driller starts to operate again under the action of longitudinal vibration, at the end of its travel. In 1938, this principle was practically tested in Romania at the oil well no. 471 of the Ghirdoveni oil field. Positive results were obtained when testing the implementation of the Basgan method, that confirmed the high drilling speed, its costs reduction and higher quality, through perfectly vertical boring.

Essentially, the Basgan method is based on two principles, namely: the sonic oil drilling and the technique of heavy proportional oil rods. Therefore, the percussion rotary drilling, that is the sonic drilling permits the driller to perform percussion on the oil driller bottom, while the driller still rotates. The percussion shocks are a result of the sonic effect, inducing a certain level of the driller vibrations. The method of the sonic drilling as applied in other countries also is based on the vibrations produced by mud pumps into the oil rig and the long distance transmission of energy through the drilling rigs, without bottom vibration apparatus.

Ion Basgan emphasized the importance of utilizing heavy proportional rods at drilling rigs, whose load is equal to the load applied on the driller in order to avoid deviation of drilling bores and rods brake. The above-mentioned process enables the oil producer to perform vertical drilling with a 30 to 50% economic output, as compared to that of previously applied oil drilling methods.

The scientific works of American scientists, Murray Hawkings and Norman Lamont of Louisiana University (California, USA), American, French, German and Russian university courses (of Prof. Moore, Prof. Evescenko, Prof. S.I. Siscenko, etc.) have focused on the originality of the Romanian conception, namely Ion Basgan's idea, as well as on its contribution to the development of Romanian science.

After thorough research, studies and calculations, Ion Basgan proved that with the field method, the application point of the Archimedes force lies at the lower end of the drilling installation and not at the gravity centre of the drilling rig that is introduced into the drilling mud.

Thanks to his inventions (patented in Romania and USA), that are of great importance as a result of their practical economic effects, namely: drilling by means of heavy proportional rods and the sonic drilling, Ion Basgan's name is written on the panoply of renowned Romanian inventors. This is how through Prof. Dr. Eng. Ion Basgan, Romania has contributed one of its most valuable inventions to the technical and scientific international patrimony.

The outline of the professional carrier of the Romanian scientist may be rounded up by adding to it a further dimension, that of a subtle observer of the political events, although he never got involved in the deeper political interplay, in spite of the frequent demands of

contemporary politicians. His existence was mainly marked by his propensity for technical and scientific creativity less than for political incertitude. Nevertheless, his fine political contribution proved his love of his people and the national interests of his country.

Ion Basgan was and still remains, through his work and creativity, an inventor of genius for the Romanian people, whose undying creation already belongs to the entire world.

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