

William Garmier

This CEO of Renewable Lubricants discusses oil analysis and how he started working in the lubricants industry.

By Rachel Fowler

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William Garmier

The Quick File:

William W. Garmier, CEO and director of technology for Renewable Lubricants, Inc. (RLI), is a successful entrepreneur with more than 50 years of R&D, lubricant formulating and manufacturing experience for RLI. As the founder and cofounder of two closely held lubricant corporations, he has been directly involved in every aspect of the lubricant business. Garmier is the inventor and owner of more than 50 U.S. and international patents on vegetable-based lubricants. His knowledge in the vegetable lubricant technology and business has brought over \$5 million in contracts and in-kind contributions to RLI from many government and industrial organizations. RLI's project has been the largest known R&D program in vegetable lubrication.

Garmier's numerous years of industrial, agricultural and heavy equipment experience provided him with unlimited equipment knowledge. Prior experience includes owner operator for Garmier Farms Ltd., industrial millwright, heavy construction equipment operator/maintenance and U.S. Airforce crew-chief. Garmier completed U.S. Airforce Technical Schools on all aircraft systems for C141 Star-Lifter, including Fuels and Lubricant Systems (graduated with honors), Air University and Airforce Supervisor Training/Leadership School. He is U.S. Airforce schooled and experienced on lubrication and reading oil analysis, as well as responsible for aircraft records and repairs. Garmier was responsible for training new flight crew and monitored jet engine oil, hydraulic system fluid analysis and ISO cleanliness. His continuing education after the U.S. Airforce included engineering/advanced manufacturing at Stark Technical College, Canton, Ohio, and manufacturing quality and statistical process control at Teledyne Corp., Hartville, Ohio.

After the U.S. Airforce, in 1970 he returned home to the family farm, where he built his family farm to an 800-acre grain farm operation. In addition to the farm operation, he developed, manufactured and marketed fully formulated petroleum, synthetic lubricants and greases for heavy industry and transportation. He also utilized this expertise to design high-performance synthetic ester and polyalphaolefin (PAO)-based lubricants. In 1988, Garmier began research on lubrication utilizing agricultural vegetable oils from high oleic plants. As a result of his early R&D efforts, Garmier is the first to run vegetable motor oil of this type successfully in an internal combustion engine. In July 1993, he received the Product of the Year Award, published in Lubricants World Magazine, for his first-generation sunflower motor oil formula. In 1994, World Champion International Hot Rod Association (IHRA) drag racer Mark Thomas set the track

speed record in Rockingham, N.C., at 241.77 mph and won the World Nationals at Norwalk Speedway. His 3,500 horsepower (HP) Top Alcohol Funny Car was totally lubricated by Garmier's corn-based formulations. In 1996, RLI was awarded two grants from the United Soybean Board (USB) for work on soybean hydraulic and engine oils. Garmier has published USB success profiles and publications in support of his work and has presented his work through STLE, Society of Automotive Engineers (SAE) and American Oil Chemists' Society (AOCS). Garmier's formulations are marketed and sold internationally.



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TLT: How long have you worked in a lubrication-related field, and how did you decide to pursue a career in the lubricants industry?

Garmier: I have spent more than 50 years in lubricants-related fields. After the U.S. Air Force, I worked 25 years as an industrial millwright/class A machine repair for Teledyne Corp. (maintenance leader and Union safety director in charge of purchasing lubricants and proper lubricant storage, scheduled equipment maintenance and oil analysis for four Teledyne's manufacturing plants). As safety director I scheduled equipment safety tours and meetings and maintained safety data sheet files for chemicals and lubricants. After Teledyne I worked as U.S. technical coordinator for Axel Christiernsson AB (one of the largest grease manufacturers in Europe and U.S.) in designing grease for the roll strip mills at U.S. Steel, Gary, Ind.

As I was working in the industry, I realized that there was an absence of lubrication knowledge. The maintenance and engineers had little to no lubrication training, and lubrication in the industry was considered a "black art." This allowed me the opportunity to teach and present lubrication seminars to my colleges in the steel and rubber industry. Teaching lubrication was and is rewarding—the industry is eager to learn, and I found a career in the lubrication industry.

TLT: What has been your most rewarding accomplishment throughout your career in the lubricants industry?

Garmier: I have been fortunate to work with different organizations developing RLI's biobased lubricants. R&D work included grants/collaborations from the Department of Defense, Department of Agriculture, Lubrizol, Battelle Institute, Dow AgroSciences, Chevron Phillips Chemical, Ohio Soybean Council, National/Ohio Corn Growers Associations, Penn State University, University of Nebraska and others. I have developed strong personal relationships that have lasted over the years, but my most rewarding accomplishment has been starting RLI, and Garmier Farms Ltd. with my wife and working with my family. Garmier Farms

Ltd. has come full circle growing high oleic soybeans for producing high oleic base oils and splitting out the oleic acids to produce synthetic polyol esters for the industrial lubricant markets. Recent R&D work includes working with government contractors, Concurrent Technologies Corp. (CTC); Southwest Research Institute; and U.S. Army Tank-Automotive Research, Development, and Engineering Center (TARDEC) developing a new fire-resistant hydraulic fluid for the M1 Tanks and Army construction equipment. I've also worked with Northrop Grumman Navy Advance Seal Delivery System hydraulic fluid for the Navy submersibles, biodegradable/biobased MIL-PRF-32073 antiwear (AW) hydraulic fluids for General Dynamics military bridge building ships and other Department of Defense (DoD) ground support equipment and biodegradable/biobased AW hydraulic fluid for (trainer development) flight simulators at Randolph AFB, Texas. At the present time, I'm working on another United Soybean Board grant, leading R&D on several different soy-based transmission fluids.

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TLT: What is the No. 1 piece of advice you would give to a person who might be interested in starting a career in the lubricants industry?

Garmier: Do not let anyone discourage you—so long as there are moving parts, there will be a need for lubrication professionals.

TLT: Throughout the different segments within your career, which one has been the most interesting, challenging and/or rewarding?

Garmier: I have always enjoyed working on heavy equipment. There is always an interesting challenge in developing products for this area, because industry is always trying to increase production, which means higher speeds and higher

loads. In addition, they are always trying to push oil change intervals longer. In order to overcome these challenges, it really pushes the formulator to fully understand how the oil will perform and change over time. Through better understanding of the oil analyses and seeing what is happening with the equipment, we have been able to keep pushing the performance envelope.

TLT: What are some of the most technical lubrication-based concepts or topics you have encountered throughout your career?

Garmier: Tackling oxidation and cold temperature performance in natural ester formulations has been the backbone of the patents. I did extensive testing into antioxidants with synergistic effects into triglycerides development of hydraulic fluids. When I first started working with natural oils, everyone said that it could not be done.

TLT: What is the one thing you wish you would have learned earlier in your career?

Garmier: Do not be afraid to ask for help. I have developed numerous lifetime friendships through R&D projects. As I think back about the challenges I have worked through over the years, I have learned there are ways to formulate around most lubrication challenges, but the only way to get the expertise is to be able to understand there are experienced lubrication engineers that will help young professionals. 

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