Oil Analysis Laboratory Continues Family Tradition

Analysts, Inc. Celebrates Half a Century

By Jeff Billington, Noria Corporation

The year was 1960 - John F. Kennedy had just been elected president; Alfred Hitchcock's "Psycho" was making theater-goers squirm in their seats; Muhammad Ali, then known as Cassius Clay, was just creating his own legend when he won his first professional fight; and Edward Forgeron was founding Analysts, Inc., the first commercial lab to provide spectrochemical analysis of elements in lubricants.

Fast-forward to today, as the family-owned business continues to thrive into its third generation with Michael Forgeron, Edward's son, who serves as president and chief executive officer and has 41 years of service with the company. Edward, who retired in 1988, remains chairman of the board of directors at AI, but the business also remains family-oriented with Patrick (15 years, support and training), Eric (12 years, laboratory manager), and Cary Forgeron (6 years, national sales manager).

The company has several laboratories across the United States, Mexico and Japan, and their services cover a spectrum of industries, including production machinery, manufacturing equipment, power generation, marine, heavy construction, mining, trucking, mass transit and the aircraft industry.

In honor of AI's anniversary, we interviewed Edward, Michael and Cary to help provide an insight into the company's first 50 years.

How and when was Analysts, Inc., founded, and why?

Edward - "I was working for Baird Atomics, an instrument manufacturer, and was involved in sales and service of spectrometers including atomic emission, atomic absorption and infrared. Baird Atomics sales included instruments being used for oil analysis by the railroads and the military, as well as instruments used for metallurgical purposes in mining, steel and forge mills."

Michael - "In 1958 Edward sold a laboratory set-up to Pacific Intermountain Express (P.I.E.), a large trucking company headquartered in Northern California. P.I.E.'s idea for an in-house lab was very progressive but not sustainable at the time. However, Edward had seen the potential benefits of establishing a commercial testing laboratory that included spectrographic analysis where customers could submit their samples to experts who would test and evaluate the results. In 1960, he formed Analysts, Inc. with P.I.E. - who sold back their lab equipment - as the first customer."

How did the family members get started in oil analysis?

Michael - "When I was younger, I was always interested in my Dad's work and wanted to know what he did and why. I would sometimes travel with him to our first laboratory in Oakland, Calif., where he would explain the testing and how it impacted the customer's business. There really was never a question in my mind that I would join the business. I formally joined Analysts in 1969, and it has been my passion and work ever since."

Cary – "Don't tell Michael, but I never really had any interest in working for Analysts. For me, it started out as a part-time job while

I finished off two more classes for my degree. I was out with a customer who was in the middle of an outage, and I got to see an open turbine system. It was absolutely fascinating and I was hooked. Seven years later I still get excited learning about how these pieces of equipment operate."

Who were your first customers?

Edward and Michael - "In addition to P.I.E., our early customers included the U.S. Navy, International Harvester, various steel mills, mining operations and natural gas pipeline companies."

When and where was the second lab started, and why was that location chosen?

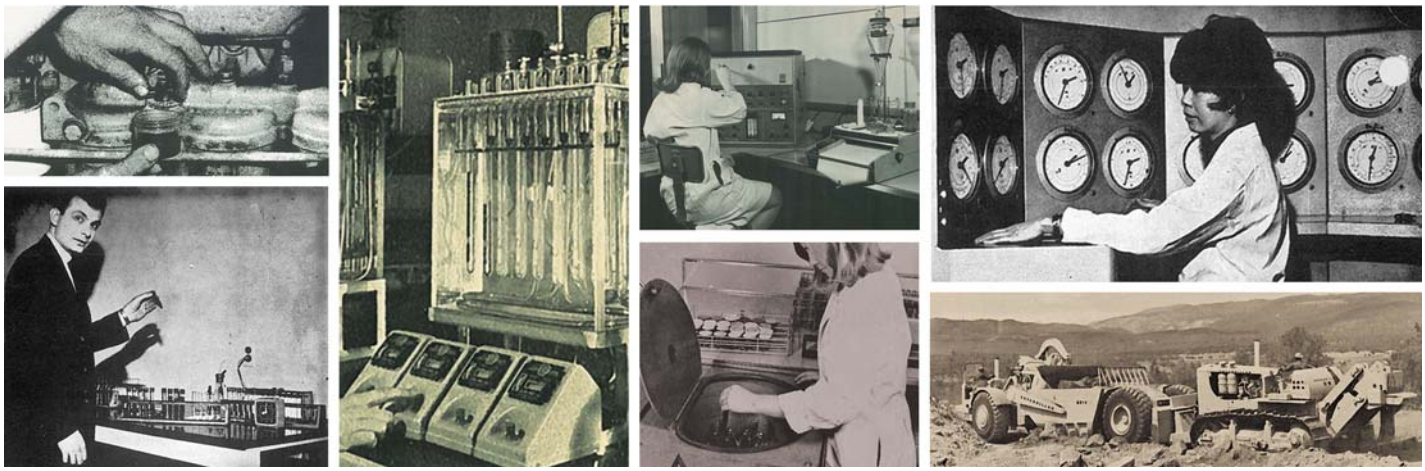
Edward and Michael - "In 1967, Analysts was awarded a services contract for oil analysis testing for groups of the Atlantic Fleet of the U.S. Navy. Analysts was already quite involved with testing for ships in the Pacific, and the new contract established the base and ability to open our second lab in Linden, New Jersey."

Establishing international operations in Japan and Mexico were also important and proud moments in our history.

"Of course, we view the celebration of 50 years of business as monumental. We are quite aware of the mortality rate of businesses and we are exceedingly proud to have maintained family ownership and shared the past 50 years with so many dedicated co-workers."

What key elements propelled your lab to its growth and success?

Michael - "Analysts was the first commercial laboratory to utilize spectrographic analysis for wear metal determination. This allowed us to provide significantly more information about the units being sampled and specifically identify wearing components. In the early 1960s, there were significant problems with an opposed piston engine design for units used in mine sweepers in the U.S. Navy's Pacific fleet. The Vietnam War was in full force and these failures contributed to many problems. Using Analysts testing and analytical services, a backlog of some 15 months delivery of replacement crankshafts was all but eliminated.



What is your recollection of how and why the oil analysis field started?

Edward and Michael - "In the 1940s, railroads were experiencing costly failures of their locomotive engines and were trying to determine a method of root cause analysis. Slowly, by looking at the used oil from failed engines, they were able to piece together causes of the problems and failures.

"The military became interested in this work in the 1950s, first with aircraft engines and then on to all the various equipment they employed. This eventually allowed the transmission to monitoring samples on a regular basis where preventive and then predictive maintenance programs were developed."

Where there any monumental events from the founding of AI until today?

Michael - "Our business has evolved on a very steady basis over the years. Changes and improvements generally become part of the landscape over time. Certainly the contracts with the U.S. Navy gave the company and industry huge credibility. Our introductions of ferrographic analysis, LEM soot analysis and QSA varnish potential analysis have created momentous gains in the business.

"The success of the program established without a doubt the value of a full testing program with expert diagnostics. Using the success of the Pacific fleet program, in conjunction with the company's original and continual mandate for the highest level of diagnostic expertise and service to the clients, we continually propelled our growth and success.

"A good portion of our success has to also be attributed to our employees. We have over 35 STLE certified technicians, chemists, data-analysts, lab managers, and field support personnel certified to ICML and STLE's CLS and OMA I and II. This is a tremendous pool of expertise from which our customers directly benefit."

Where is the oil analysis profession heading in your opinion?

Cary - "Eventually, on-line/on-board sensors will work to expectation. When this occurs, more of the continual monitoring of equipment will be driven by these sensors which should identify those units with developing problems.

"Laboratory testing will still be a major factor, particularly on the units that have been identified with anomalies, and the testing will be more precise and higher end and directed specifically to the warnings that have been identified in the field.

Edward Forgeron, right, started Analysts Inc. in 1960, and his son Michael, left continues to carry on the family name as current president of the company.

"This may create somewhat of a shake-up in the industry as significant capital investment will be required to properly equip a lab with appropriate instrumentation."

What will oil analysis labs look like in the next 25 years?

Michael - "We see automation. Nearly all phases of sample/test processes will be predominantly automated. New technology, along the lines of RFID tags, will replace sample label-barcodes and forms being utilized today. Instrumentation will continue to evolve and new processes will be developed to allow the laboratories to identify many new areas of lubricant condition and unit wear. "

Can you recall any big success stories where your lab saved a machine from catastrophic failure?

Cary - "We have quite a few case studies of customer success stories. One example from the nuclear power industry and safety related equipment involved a motor drive for a multi-stage water pump. The early identification of the problem and prompt corrective action by the customer produced a documented saving of $3,600,000."

What would you say is the greatest technological achievement or advancement in oil analysis?

Michael - "As with so many other industries, computing power has allowed for greater advancements in oil analysis. Computers and software have vastly improved instrument speed, accuracy and precision. They have allowed us to easily mine data sets for much information than could never be developed manually, and to assist both Analysts' engineers and our customers to easily manage large fleets of industrial or rolling equipment."

Currently, there are more than 150 commercial oil analysis labs in North America and thousands of onsite labs. Does the industry need that much competition?

Cary - "Competition is not a bad thing. By definition, it forces different entities to improve their work to be most successful and that can only result in a stronger industry for all of us."

In your opinion, does the United States lead the world in oil analysis?

Michael - "There are a number of excellent laboratories throughout the world. Analysts is proud to have visited, collaborated with and worked closely with many of these labs. But, absolutely the United States market leads the world. Our overall level of user training-in and understanding-of oil analysis is higher than any country or region in which we work or have visited. The user participation in full oil analysis programs is above any other area in the world."

What are the current threats to the oil analysis industry?

Cary - "There are factions that would very much like to drive the industry into commoditization. We believe these efforts work at cross purpose to the real value and benefits of oil analysis. It is not what you pay for a sample, but what you receive as a return from your investment that should be considered. Improved productivity, longer asset life cycling, proper lubricant selection and service levels all contribute directly to an organizations' bottom line.

"It is important to realize that not all oil analysis is the same. The equipment users must decide what their objectives are when they initiate or revamp a sampling program. Based on these objectives and an honest dialogue with their laboratory, the proper sampling, testing and diagnostics can be applied.

"Oil analysis is a technical business that is comprised of three major components: proper sampling, quality testing and expert

diagnostics. Similar to a three-legged stool, all three components must be working in sync in order to be most beneficial. In our world, 'one size doesn't fit all.'"

Any humorous stories about something that might have happened in one of your labs the past 50 years?

Cary - "We have definitely had our fair share 'interesting' test requests over the years. Without fail, every year there are some outlandish inquiries. Most of these have nothing to do with lubricants - blood, urine and pregnancy testing seem to be the most common. Every so often an unsolicited sample is received utilizing one of the sample information forms. On a few occasions a urine sample has been entered in as an engine coolant or hydraulic fluid. Happily, these 'specimens' are identified immediately and handled appropriately."

Do you have any advice for a person thinking about entering the oil analysis field?

Michael - "If you like the sciences or enjoy interfacing with various industries each day, if you are not afraid of hard work and enjoy a sense of satisfaction from challenging responsibilities and helping customers save money, then oil analysis is a field to be seriously considered."

What important laboratory technology still needs to be invented that can help the industry?

Michael - "We don't know that there is any single technology that is missing from the industry. Internally, we have our R&D efforts and externally, we are fortunate to have many suppliers working on continual improvements to the existing technologies we utilize daily."

How has AI been an innovator in the oil analysis field?

Cary - "Analysts' innovations began on day one, as we were the first laboratory to offer wear metals analysis. Two years later, we introduced infrared testing on natural gas engine oils. In the late 1960s, Analysts was issued its first of three patents for the "bellows" sampling device. The company was first to provide ferrographic analysis and though our own R&D, the patents for an automatic viscometer and the LEM fuel soot analyzer were developed as well as the QSA test procedure and reporting for varnish potential." **ML**