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George Balogh
of SpectraSensors

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Balogh Urges Engineers To Communicate Their Enthusiasm To Youngsters

By Jeff Share/Editor



George M Balogh, the genial chairman and CEO of SpectraSensors, Inc., San Dimas, CA, discussed his career and his company's technology for natural gas pipeline moisture content monitoring with *Pipeline & Gas Journal* recently.

His enthusiasm for both his current post and his profession came through clearly during the visit. His call to engineers to get out into the schools and pass on the satisfaction and excitement of their profession is timely.

P&GJ: Was there a pivotal time in your life that influenced your career choice?

Balogh: Yes. I started working part-time jobs at 12 years of age and at 16 had my first factory job working a graveyard shift in Solon, Ohio. The factory manufactured boat trailer rollers and had a press that ran 24 hours a day. I was one of the two night-shift crew who drove a tow motor lift truck and fed the presses. Over time, I came to understand the organization of the factory floor and saw ways in which it might run more smoothly.

When I suggested new setups to management, to my surprise they accepted them. Remember, I was only an eager kid and my enthusiasm evolved into making changes on my own, then informing management as a fait accompli. They liked the initiative and encouraged me to continue. I didn't know it at the time, but I was doing industrial engineering. And even though it was not apparent, I really enjoyed problem solving on a conceptual level.

P&GJ: Who were your role models?

Balogh: First and foremost was my dad who taught by example and helped me develop a strong Midwest work ethic. One high school teacher in particular lit a fire about math and computers, but let's come back to that later.

P&GJ: How did you get started in business?

Balogh: With a BS degree in industrial engineering in hand from California Polytechnic State University, I interviewed at

Crown Zellerbach and was hired to work with sales and manufacturing in the Southeast, marketing corrugated containers. It was like my teenage factory floor set ups because the issue was productivity; in other words, product cost vs. application and expediting the sales quotation process. I perfected a system in which a salesman completed a form the day before containing the customer's requirements. Using a Fortran code that I wrote, the prospect's data was keypunched on paper tape overnight. The following morning, the IBM 360 had computed the fabrication and printing costs that the salesman needed to quote and close the sale.

P&GJ: Did you continue your education and where did it take you?

Balogh: In my spare time, I earned an MBA in business and finance nights from Golden Gate University. The courses were terrific because the professors were all business leaders. The MBA opened doors to high technology companies and helped land a job in corporate finance at Varian Associates who gave me the opportunity to take on tough jobs needing solutions. My next position was in a turnaround situation at Spectra-Physics, a \$100 million division of a publicly traded corporation that did a second IPO in 1997 and a merger in 2002.

During my 13 years at Spectra-Physics, I became senior vice president and founder of the Passive Telecom Group that was responsible for developing and executing the company's optical component and thin film product strategies. It was a dream job because it presented difficult challenges in bringing solutions to manufacturing, finance, and engineering issues. In addition to being able to hone my conceptual and technical skills, that broad experience planted the seed for branching out into the world of startup companies.

P&GJ: Provide us with a little history about SpectraSensors.

Balogh: Frankly, it all started as technology in search of a business. A group from NASA/Caltech Jet Propulsion Laboratory (JPL) in Pasadena formed the company in 1999. Drawing on his extensive experience at JPL in developing advanced laser-based optical systems for atmospheric measurement, Randy May, founder and now chief technical officer, discovered that many com-

ponents in the flow of natural gas interfere with accurate sensing and measuring. With the help of JPL, he developed the gas application using a tunable diode laser and software that operated on a wavelength specifically for natural gas.

P&GJ: When did you join the company?

Balogh: I started working with Randy in the summer of 2002 and joined the company in January 2003. After months of market research and sweat equity, we developed a business plan focused on energy, water quality, and atmospheric monitoring applications. The first product was purchased by El Paso Natural Gas which, with our product, pioneered optical laser-based moisture monitoring. It soon became clear that this application presented a huge opportunity because none of the existing in-line monitoring products worked as reliably as our non-contact laser system.

P&GJ: How did El Paso Natural Gas learn about SpectraSensors?

Balogh: As I said, our technology was in search of a business. Call it a stroke of luck or JPL's reputation, but this is what happened. In 1999, El Paso Natural Gas had a sampling hut in Bloomfield, N.M. where it had installed three different brands of moisture analyzers measuring discrete readings above and below tariff limits. One day in April 1999, a chem lab specialist, Charles Padilla, called Randy at JPL to ask if the TDL moisture analyzer he had heard about could monitor water vapor in natural gas.

After many trips by Randy to Bloomfield, the first SpectraSensors moisture analyzer was born and a few months later, with JPL and Caltech's blessing, the company officially started business as a technology spin-off. In fact, Caltech remains one of the company's founding shareholders. El Paso Natural Gas discovered that our unit could operate unattended 24 hours a day and reliably monitored their gas as part of a program to maintain tariff quality and resistance to corrosion within their pipeline infrastructure over a period of years, with no calibration requirements.

P&GJ: Where does SpectraSensors go from here?

Balogh: We just introduced a family of analyzers, including a portable unit, the SS1000, developed for gathering fields to identify wells that are contributing water vapor. The portable can also verify the accu-



racys of permanent installation units like the SS2000 in problem situations. Further, as imports and distribution of LNG grow, there will be an increased demand to address water vapor issues throughout the expanded infrastructure with higher performance systems. From our perspective, the easier and more turnkey our systems are to install and operate, the better. We are also adding new laser wavelengths for monitoring applications in petrochemical and industrial process plants.

P&GJ: Ultimately, how important is TDL technology to the pipeline industry?

Balogh: The National Transportation Safety Board has published a number of new rulings requiring active monitoring to help avoid gas pipeline corrosion, particularly in populated areas. We believe our SS-Series product line will grow in its contribution to overall pipeline safety. Our customers have run comparative tests between our analyzers and dew scopes and each test has proved the SS-Series to be as accurate, or more accurate than dew scopes. We strongly believe that our systems reliably comply with or exceed the standards established by the Bureau of Mines.

P&GJ: Tell us about your family and personal interests.

Balogh: I am married and my kids are in their twenties finding their way in the world. My wife and I enjoy traveling through South America and exploring the southwestern U.S. When I am not at the San Dimas plant, I am usually at our Nevada desert home overlooking Las Vegas. I love automobiles of all kinds, admire collectors like Jay Leno, and enjoy motorcycling on the back roads of California, Nevada and Utah.

P&GJ: You mentioned earlier that you wanted to come back to the influence of a certain high school teacher?

Balogh: When I was a junior in high school, I took an advanced math class taught by an IBM professional who was granted a one-year leave to teach. He made math real and exciting and lit the fire I mentioned earlier. One day he showed up with what is now a primitive IBM 1620 computer. My classmates and I would spend hours learning how to apply mathematics to real world problems in ways that most high school teachers struggle with today. I entered undergraduate studies better prepared to pursue engineering; on

my first job used Fortran to solve a productivity issue at Crown Zellerbach; and gladly tackled difficult and complex problems at Varian and Spectra-Physics applying math principles to sound financial strategies.

P&GJ: What would you advise young people who may be considering an engineering career?

Balogh: Young people should realize that engineers are a small percentage of the total work force and will always be in demand because of the few graduates entering the field annually. Demand for engineering solutions will increase, along with challenges and opportunities, as our society and economy grow. But I am troubled about the decline in undergraduate engineering enrollment.

Over the years, I have been involved in associations that promote high school career days and present engineering as a viable and exciting career. I urge your readers to get involved and emulate my high school teacher, whom I consider a hero, to create excitement in math and the sciences at their local schools. Remember, even if you reach just one kid and he or she goes on to lead a company, what can be more satisfying or more beneficial to society? *P&GJ*