Petrol PLAZA

How Diesel Guru Roger Leisenring. Jr. Fights the Good Fight

Roger L. Leisenring of Texaco Additives International has studied every aspect of diesel fuel quality from cold flow to additives. Today, his focus is fueled by yet another interest:

Additives, advocacy and access to TV audiences

With consolidation, expertise in diesel fuel quality and knowing how to improve engine performance is being concentrated in the hands of fewer experts. One of those experts is Roger Leisenring, Jr. of Texaco Additives International, Inc. As a former diesel technical support specialist for Texaco, Inc. and in his current role as a diesel additive specialist, he has spent two decades researching fuel and additives. Today, his skills as a researcher are aimed at achieving solutions in yet another arena—special education—as a parent advocate.

Roger uses a Series 60 Detroit Diesel engine for additive development and evaluations at Texaco Additives International.

You've been involved with fuels for Texaco, Inc. since 1980 and Texaco Additives International, Inc. since 1998. Tell us about your current role in Research & Development (R & D).

With the merger of Texaco and Shell, R&D was shifted to Equilon in Houston. Additives were not involved in the merger, and Texaco subsequently formed the Texaco Additives International Group. Many of us from R & D transferred to that group. On April 1, 1998, I joined the company as a specialist in diesel fuel additives.

Our strength at Texaco Additives is that we focus on data. Any product claim we make is either supported by data through direct testing, is consistent with published research or has read-across data to support it.

For example, a researcher conducts an L10 test demonstrating that, when injectors are kept clean, hydrocarbon emissions are reduced. Will we run that test again? Not necessarily. If we pass our additive through a similar L10 test and the injectors are clean, why would we not see the same benefit? That's called read-across. If we're not comfortable with the read-across, we will conduct tests.

What's a typical day for you?

My work day begins early; you can always reach me at work at 6 a.m. But, if I'm up, I'll come in as early as 4:30 a.m. My goal is to leave at 3:30 p.m. For one, I want to be home when my children arrive from school **(Photo 1).** I'm also a roller-hockey coach on two teams for my kids **(Photo 2).**

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Photo 1: Roger carves pumpkins with his sons (left to right) Michael, Roger III and Brian

Photo 2: Roger serves as the coach for the Pulverising Devils Roller Hockey Team. His son, Michael, is on the far left of the back row

First, I catch up on email. Our company operates worldwide with customers in many time zones. By coming in early, I can take care of that mail and read journals before the workday actually starts.

Then, it's a matter of putting out any fires. For example, I might get a request from my marketing rep who has a sales meeting with his customer. Reluctantly, he admits that he forgot to bring the necessary data and asks if I could please send it. Suddenly, he adds "While you're at it, could you do a 20-slide presentation to accompany that?"

I have specific programs that I monitor on an ongoing basis—a cold flow study, for example. I'm also following a program in which various levels of cetane are being tested to determine the fuel economy penalty for a naturally high cetane fuel as compared to a cetane-improved diesel fuel.

I also discuss various ideas with colleagues. We just finished setting up a 1.9 liter VW Passat engine to test additives. This engine has direct injection and smaller displacement as compared to IDI (indirect) engines.

Do you focus on technical marketing or research?

I provide technical support for the technical development of products formulation. Though I don't do the formulation, with 19 years of experience with fuels and diesel fuel, I am in a unique position to answer a variety of questions. For example, a chemist came to me recently. She had to formulate an additive package for a South American company that had provided her with an unusual specification. Because I'd dealt with Latin American customers before, I had an idea of what they call "gas oil." The customer wanted to see this gas oil in the company's fuel, but didn't send a fuel sample. I helped the chemist come up with a blended fuel to meet the specification that she could test.

Do you function independently or as a part of a team?

When we formed Texaco Additives, we relied on people's ability to work together. However, during the early years of my career, walls were built and empires established. Duplication of effort was inevitable because cooperation was not the focus. Now, we work as a team. Having worked as colleagues for many years, we rely on the fact that we're all friends and colleagues with a common goal—we want to stay in business. The majority of the walls have been taken down.

How and to what extent has consolidation affected research and development within the industry?

Consolidation has greatly affected R & D; many operations once based in this country are now located overseas. Some companies have even let R & D go, but that is one strength of Texaco Additives—the company has preserved its operation. However, at the same time, some interesting connections are being made. We've seen a lot of fuels people turn up in consulting firms. And engine companies are picking up diesel fuels specialists because they recognize the need for expertise to provide useful arguments to either the EPA or API as fuel quality issues arise.

How did you arrive at your fascination with engines and fuel?

My father, Roger was an aeronautical engineer for Curtis-Wright in Woodridge, New Jersey. He helped develop what was called the R2-60, the two-bank 60-cubic-inch rotary engine. When I was young, my father acquired an engine that he took apart and used to teach me how the parts worked (which I am also doing with my boys). That sparked the interest. Actually, my father didn't want me to go into engineering because he feared the cyclic nature of being involved with government contracts. And, every year, he would express the fear to my mother, Dorothy, that he would lose his job or be transferred. But, sometimes the acorn doesn't fall far from the tree.

Where did you attend college?

I chose the University of Cincinnati because it had one of the first co-op programs in which students worked half the year in their chosen fields. I worked at Curtis-Wright, designing various equipment, like bolts, because they built their engines from the ground up. It was during this time that I met and proposed to my future wife, Barbara.

As my graduation approached, I was eager to remain near my parents and Barbara. I looked for career opportunities within the immediate vicinity, but most of the offers required relocation.

My father told me that he had a colleague who worked in an R&D center in New York, and although my dad wasn't sure, he thought the company was Texaco. So, I interviewed with Texaco. When asked if I wanted to go to Houston, I replied, "Oh, no; don't you have a little R & D center somewhere else?" They indicated that they had one in Beacon, New York, which was just 70 miles from my folks and 80 miles from Barbara. I interviewed there and accepted Texaco's offer.

I graduated with a degree in mechanical engineering (although my background in college at the time was vibration analysis), then joined Texaco in 1980. Barbara and I were married in 1981.

What was your first project at Texaco?

When I first joined Texaco in the 1980s, we dealt with everything from catalysts to lubes, diesel exhaust filters and the Texaco control combustion systems (TCCS). At that time, diesel emissions were just coming into focus.

My first project involved Texaco's patented process of putting alumina onto steel substrates and capitalizing on its capacity to filter particulate matter. The problem was, and still is, how do you get those particulates off the fibers?

Other companies later developed the monolithic type of filters to handle the heat of regeneration.

Along with that, a control system was needed to burn off the soot collected. I spent 2H years trying to help develop that system. Texaco ultimately decided that the emphasis should be on fuels and lubes, not equipment, so that group was shut down.

What were the key projects that followed at Texaco?

Around January 1981, I was assigned to research why our vice president's company diesel car had stopped "dead in the water" on Interstate 684. After investigating, we learned that the garage staff hadn't yet cut the diesel fuel with kerosene and I suddenly had my first encounter with cloud point. Ten years later, cold flow ended up being my field of expertise.

Like many companies, Texaco went through cycles in which it tended to have "generations" of people in the same age group. In the 1980s, we had a very young group coming in and an older group in their 40s and 50s, many of whom knew little about computers.

At that time, most of the testing for exhaust emissions required a person to manually grab an exhaust sample and someone else to read instruments in the engine stand. However, the need to automate that process became clear. In the wake of the departure of a number of engineers, there was no senior engineer available to computerize the exhaust emission equipment. The assumption was: Roger's young; he must understand how computers operate. As a result, I was assigned to and successfully automated that equipment.

In the process, I experienced near-disaster. We were to show the operation of the engine stand to one of Texaco's vice presidents because we had already spent \$20,000 to \$30,000 on the project. However, we weren't entirely ready for the demonstration itself.

During the demonstration, I heard this odd "clacking" noise and suspected that I needed to shut the engine down. The vice president continued talking and talking. Clack, clack, clack. Finally, he said, "Thank you very much. You're doing a very good job, Roger." As soon as he left, I shut the engine down.

Apparently, someone had forgotten to tighten the bolts on the shaft between the flywheel and the dynamometer—that bolt was just hanging there by a thread. One more "clack" and it would have shot out; that might have been the end of my career!

What did you know about computers back then?

I knew FORTRAN language. By the time the program I wrote was completed in 1983, the code was 9,000 lines long. The program did (and still does) everything from turning on the emission equipment in the morning to automatically calibrating the system. That system has already lasted almost 17 years, which is incredible for a computer system; Hewlett Packard doesn't even support the system anymore.

What events followed your successful automation of the engine testing stand?

From 1983 to 1988, I was responsible for our vehicle emissions lab. The lab conducts FTP (Federal Test Procedure) emissions testing for gasoline and diesel, which serves as the basis for fuel economy

and gaseous emissions data (see Photo 3).

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Photo 3: Roger works with one of his last computer automation projects (engine stand) before his assignment as the diesel tech support specialist for Texaco, Inc. (1988)

In 1988, there was an abrupt turn of events at Texaco. Pennzoil sued Texaco, claiming that somehow we had stopped Pennzoil from acquiring Getty Oil and, subsequently, were able to purchase Getty Oil ourselves. In the wake of the final \$11 billion judgment awarded, Texaco declared bankruptcy. We literally walked into the plant one day and were handed letters informing us of the bankruptcy. Naturally we thought we would all be laid off. But, luckily, Texaco had a visionary as President and CEO—Jim Kinnear.

Jim Kinnear believed employees were a company's greatest strength and that any company that didn't value employees would be destined to fail. He encouraged Dale Pollart, Director and Vice President of R&D, and Frank Gaetani, Manager of the Fuels Section, to pursue their interests in new additives, even though Texaco was very conservative in its use of them. Kinnear's response was, "Go for it! Let's develop it." And that's how System 3 came about. This additive system revolutionized the industry—gasoline was no longer simply a commodity but a product that could be altered to differentiate performance.

At the same time, we went through the quality initiative, based on Deming's approach to total quality management. We were trained to start thinking out of the box and work more as a team. And with this, employees became empowered to make decisions because Texaco promoted that. Within that quality initiative, I was the quality assurance person, helping to set up and monitor quality teams.

How did the emphasis on quality and creativity affect your work at Texaco?

Here's an example. By 1989, the six-lane road simulator, which was used to test vehicles in place without drivers, was over 15 years old and the old tape drive controller system needed to be replaced. The cost of replacing this simulator, the tape system and controllers was more than a million dollars. Therefore, my responsibility was to automate one of the lanes to study the feasibility of using Cellmates, manufactured by a company named Digalog.

We were supposed to begin the overhaul in April and faced an October deadline. And, with the ongoing development of System 3, we needed to use the road simulator to finalize our claims. Unfortunately, we didn't get into that facility until June.

Within six weeks, our team in the Fuels Section had everything gutted, stripped, the wires pulled and were ready for the contractor to come in. I found out that some of the technicians would come in off-hours to complete the work. Some would say "I couldn't sleep" and come in at 1 a.m.

Everybody felt a sense of ownership—Jim Kinnear's philosophy was that Texaco is your company. That's why everyone involved was willing to put in the extra time. We still credit Jim Kinnear for that.

How did you become involved with diesel fuels?

About 1989, Frank Gaetani knew that Dr. Bob Hileman was retiring. Bob was the technical support person, the troubleshooter, for diesel fuels, as well as aviation fuels. Frank said, "You're done with this road simulator project. We know Bob; we would like you to be the new Bob."

Fortunately, Dr. Hileman was a fantastic teacher. I actually had a little table set up in his office. Half the day I would sit there with him, go over things and listen to phone calls. Basically, I became his shadow for a year. The last three months, Bob sat at the little table and I sat at the desk.

After his departure, I became the decision-maker; there was nobody else within Texaco with that specialized knowledge.

With that degree of specialization, you must have faced some interesting challenges. Early on, I remember getting a call from our Latin American/West African Division. Texaco had a tanker going through the Panama Canal. A Central American government scheduled to receive the fuel shipment had refused to accept the product unless the fuel met a particular, and unusual, specification.

My contact from Texaco called and asked me to determine whether or not the tanker should be authorized to turn back once it cleared the Panama Canal because the fuel did not meet that specification. And, of course, this type of thing always happened on a Friday.

I asked him to fax me the specification. After doing some research, I discovered that the specification in question was an obsolete military specification. I also found out that it was half the quality of what even our military would recommend. I basically recommended that Texaco contact that country and state my findings. The government in question accepted my word as sufficient. I signed off and the tanker went through the Panama Canal. And that kind of challenge occurred routinely; I would typically field over 300 phone calls and letters each year.

Describe your involvement with professional organizations.

When I assumed Bob Hileman's position, I also took on his role with ASTM. In my heyday, I was on 28 to 30 committees—ASTM, SAE and others. My motivation stemmed from reading information in journals that was basically incorrect, and I had a tough time keeping my mouth shut.

I had been in the ASTM Diesel Section for about two years when Carl Jewitt of Ashland Oil told me he intended to step down as the chairperson. He expressed the concern that the chairperson needed to bring balance, rather than bias, to the committee. Though he acknowledged that I was relatively young, he said he felt I could fill that role. I accepted that offer in 1993 and have been the ASTM Section E2 Diesel Fuel Chairperson ever since.

With the National Council of Weights and Measures, I'm the Co-Chairperson, along with Randy Jennings, of the Premium Diesel Fuel Task Force, which is under the Petroleum Subcommittee. I'm also the Chairperson of the Society of Automotive Engineers (SAE) Diesel Fuel Committee.

Tell us about your family.

Barbara and I have three boys—three handfuls who are as different as night and day (see Photo 4).

Roger III is named after his grandfather and me. Brian Albert, my 10-year-old, is named (his middle name) after my wife's father. Eight-year-old Michael's middle name is Lewis, named after my father's brother, whom I adored.

Photo 4: Roger and his wife, Barbara, join sons (left to right) Roger III, Michael and Brian for a Christmas portrait. In Roger's own words, "I am defined by my family.

Two of my boys are classified under Special Education Programs in school. And that has led me to an area that I never thought I would get into—basically being a parent advocate for special education.

Initially, I was naive about the special education program for my sons. However, I began to suspect a problem. I've always tried to pass along to my children what I was first taught by my dad—if you find someone not doing what is right, make it right. Once I started researching, I formed the impression that, even with an opportunity to do the "right" thing, our district was choosing not to follow either the letter or the spirit of the law.

What I learned at Texaco is that you have to empower people to push the envelope, think out of the box, do more with less. School systems have yet to embrace the total quality system and empower teachers. It's a very hierarchical system, one in which there is little accountability.

What have you learned in your role as a parent advocate?

Last year with great reluctance, our district became the first in New York State to have a committee of special education under a Board of Education. I served as the Co-Chairperson. As an advisory committee, we ultimately make recommendations on how to improve the special education system in the district. Unfortunately, the Superintendent did not endorse the formation of this committee for this school year and it was disbanded.

Parents don't realize that, within their own states, they should be comparing the scores for students with disabilities and those of the general school population. In my state, I learned that a high percentage of the special ed students were not achieving minimum standards.

Certainly it's legitimate to argue that some children may plateau or never achieve specific educational goals, but norms exist for any given test. For example, in my particular district, 56 percent of special ed students in Grade Six failed to meet the minimum standards for reading, as opposed to three percent of the general ed students. And when I researched reading test scores for 42 school districts in four New York counties, I found the failure rate ranged from 13 percent to 90 percent. To me, that is unacceptable.

School systems are geared to deal with the 63 percent of children who fall within the normal curve—not the remainder of students with specialized needs. Those involved—educators, administrators, and teachers—aren't always willing to "think out of the box." When my son's reading program was finally changed, we saw gains. But, it took a long time for the change to occur.

Tell us how you started your special education website and cable television show.

I started first with my website (www.idsi.net/nyeducation). After I spent time educating myself, I had to have an efficient method of storing that information.

Barbara is always telling me that God leads people in unexpected ways. One Saturday, I was driving Brian home from a snow-boarding class. Suddenly, I said, "I'm going to start a TV show." Later, Barbara's response was, "You're going to start a TV show? We don't see you now. How are you going to manage that?"

On Monday, I called the cable station and got an application for the local access channel. By Friday, I was approved to have my show on the second and fourth Sunday night at 7:30 p.m.

The show premiered on March 13, 1999. It's called "The Parent's Guide to Special Education in New York," but I've shortened that to "The Special Education Show" (see Photo 5). The potential viewing audience is 60,000, and I'm now syndicated in Westchester County.

I've had to learn about video and staging a program. For our premier show, I didn't realize that I actually had subtracted sound from the video. One show I did was shot in front of the Capitol. I did another show at a ski resort because I found out that they actually had certified instructors for disabled children.

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Photo 5: Roger reviews a video tape of his cable television show "The Special Education Show."

I believe parents must become educated and join together as a collective force. One woman told me, "I was trying to tell my husband what was going on and he never understood me. Your show helped me get that message through."

I've also started up an organization called PARENTS (Parents Aligned for Reading Education, Now and Tomorrow). And, I've also formed an Internet club. First, go to Yahoo, then to "Clubs," "Schools & Education," "Special Education" and then click on "Duchess County Special Ed" (http://clubs.yahoo.com/clubs/ dutchesscountyspecialed). I started the club on July 11 and, in less than one month, it had over 560 visits.

The club basically gives parents with children in special ed a forum. I've found that parents rarely know where to find help. By joining the Yahoo club, parents can put out questions in the hope that someone can provide a quick response.

Does it ever make you want to get into education or administration?

At one time, I considered getting a law degree. To prepare for some of my cases, I have actually read the Congressional Record to see what Congress intended.

Last school year, my son was getting one-on-one reading, which he desperately needed. On March 17, I received a letter stating that he would no longer be eligible for one-on-one reading. Rather, he would only be able to participate in a small group, using the same program and approach to teaching reading that had not succeeded in improving his reading during his elementary schooling. As a result, I ended up doing research and statistical analysis to prove that my son needed this particular program. I also wrote to leading experts who were familiar with my son's disability; all of them wrote back agreeing with my position. This lent credibility to my claims. I filed a complaint with the state. In the end, the school district has finally agreed to provide a one-on-one reading program for my son.

It sounds as if this process has been all-consuming for you and Barbara?

Yes. And, when you talk to most special ed parents, that's what it is. Eventually, the process wears you down. A lot of parents give up. However, I have also been encouraged by the positive feedback of some teachers.

They've told me, "We're so glad you're here and so involved. We wish that we had other parents like you. Some walk away, don't even care or don't show up at parent conferences." So you have it on both ends—damned if you do, damned if you don't.

At some point, my children will be out of the school system. Do I continue doing this? I don't know. Once their kids get out, a lot of parents say, "I'm done with that. Let someone else battle that." So the schools win by "retirement." Some schools rely on that. There is no accountability for the school districts and that's a shame.

To survive, Barbara and I have developed teamwork, which can be demonstrated in many ways. It's not necessary for Barbara to sit down with me and do the research; that is what I do and do very well. But when I'm communicating through the Internet, I'm not with my sons. She then takes care of that aspect. And that's where the team effort comes in.