

Petrol PLAZA

"Retired" Pump Man Enjoys the Prime of Life

Gene Mittermaier has achieved more during his “spare” time than some people accomplish in a lifetime—yet he’s lived virtually all his life in the same small town. John P. Hartmann interviews engineering consultant, inventor, manufacturer and “retired” Tokheim executive Gene Mittermaier, PE.

An Interview with Armin (Gene) Mittermaier, PE

After a brisk four-mile walk with his wife, Phyllis, a quick breakfast and a round of golf, Gene Mittermaier is ready to begin his day. Today, he is busier than ever as a consultant, an inventor and a manufacturer. Several years ago, he was Vice President of Engineering and, later, Chief of New Product Development for the Tokheim Corporation, where he oversaw the development of many products that became industry standards. Gene continues to be active in the development of fire codes and standards as well as in weights and measures. In his “spare” time, he also writes occasionally for PE&T. His most recent article appeared in the May issue (“Toxic Emissions Reports: Why and How You May Need to Do Them—Now,” page 5).



Gene in his Tokheim office just before he retired. In the background are photos of his late wife, Marilyn, as a baby and young girl, and the family heirloom, a 1933 Packard.

Did your childhood experiences have any bearing on your career choice and the success you have had in your career?

Yes, looking back, I would say my early years had a definite influence, mainly because of my father and my hometown. I was born and grew up in Fort Wayne, Indiana. In fact, except for a couple of years in the armed services, I have never lived anywhere else. Neither of the two women I married wanted to leave town (Marilyn, Gene’s first wife is deceased). I have spent my life in the town that can rightfully claim to be the hometown of gasoline pump manufacturing.

My father was an inventor. He had more than 30 patents for General Electric (GE). I was always interested in what he was doing; he took me to the factory (the transformer division of GE) to let me see some of his work. One of his inventions that impressed me was the “quiet ballast” for fluorescent lights—they had previously made too much noise.

By the fifth grade, I was drawing and inventing things. My first creation was a lawnmower that had a

3/4 hp air-cooled engine, with a sickle blade on the front. It was very light—you could hang it on the wall in the garage. It worked well for a small patch of ground, but the grass build-up on the sickle blade was a problem.

By the time I reached college age, I was interested in jet engines. I wanted to design them so I attended the Indiana Institute of Technology, majoring in mechanical engineering, with a minor in aeronautical engineering.

In 1953, while I was in college, my father paid \$1,500 for a 1933 Packard V-12 Model 1006 Convertible Victoria, custom body by Dietrich, just to have something to work on at night. Over a period of eight years, he tore that car completely apart and totally rebuilt it. In 1998, a little over a year ago, Otis Chandler, former owner of the Los Angeles Times, purchased the car for a vintage car museum he was establishing (see photo above). Over the years, in a highly fluctuating market, the value of the old Packard has been as high as \$1 million.

As I observed my father restore that car (I helped him some, but not much), I saw a pure perfectionist at work. “Good” was not enough; it had to be a lot better than good. It was a great benefit for me to see first-hand the results of such an attitude.

A closer look at the 1933 Packard V-12 Model 1006 Convertible Victoria, custom body by Dietrich. Purchased by Gene’s father, Armin F. Mittermaier, in 1953 and restored to perfection, the car is now owned by a vintage car museum in the Los Angeles, California area.



What did you do after college before joining Tokheim?

In 1955, right after receiving my BS degree in mechanical engineering from Indiana Institute of Technology, I was drafted into the army and served two years on active duty (see photo right).

Although my army career drew me closer to something dear to my heart—jet engines—my actual role in the service was far removed from engine design. I was a forward observer for calling in F86 Saber Jets on air strikes. Stationed in Germany with the Tenth Infantry Division Artillery during peacetime, our job was to stay ready. Staying ready meant going out on maneuvers. I had a 3/4-ton truck with three radios. I would pick up a pilot, drive him to the front lines, locate the enemy and call in the F86s.

Completing my military stint in 1957, I returned to Fort Wayne and, after trying a few jobs that didn’t quite fit, I joined the Wayne Pump Company in 1960. I was assigned to the company’s Research and Development Department, with no involvement with service station equipment.

My early work at Wayne was to provide ground-support hydraulics for Nike Zeus anti-missile missiles. Wayne was heavily involved in manufacturing the ground-support hydraulic hardware for the Nike Zeus, which was designed to intercept and destroy incoming missiles before they reached their targets.

Unlike the other Nike series, the Nike Zeus was fired from an underground silo. Firing control was accomplished by radar that employed a large, domed antenna that rotated 360 degrees in one

minute, picking out targets and identifying the type of incoming missile and its flight path. This information permitted the Nike Zeus to be fired with accuracy and with reasonable certainty that it would do its job. I witnessed the actual firing of two Nike Zeus missiles at the White Sands, New Mexico test range.

In 1962, I joined the Tokheim Pump and Tank Company and stayed on for more than 30 years.



Gene took this photo of an F86 Saber Jet “buzzing” him and his 10th Infantry Division Artillery buddies at 300 knots while on maneuvers in Germany, 1956.

Were all of your years with Tokheim in the engineering area?

No. After my initial project in engineering, I spent a few years in sales. In fact, my 30 years with Tokheim were about evenly divided between marketing and engineering. I liked them both. I guess I couldn't choose one over the other.

My first engineering project was to develop a gasoline dispensing nozzle that would open with a “feather touch.” At the time, suction pump systems still prevailed at retail service stations. To build stations with multiple pumps required the pumps to be located farther away from the underground tanks. Larger pumps, operating at higher pressures, resulted in more pressure in the dispensing hose and nozzle. This, in turn, required more force to open the nozzle.

My specific project was to develop a hydraulically-powered nozzle that could be opened with a feather touch. We succeeded in developing such a nozzle, but never marketed it because lower-cost alternatives were developed.

To be a good salesperson in the petroleum equipment industry, it helps a great deal to know the technological side of the product. You also need to relate such knowledge to people who don't know as much about the technology. My engineering background helped me in marketing. But I also had to learn to communicate with people other than engineers. And this experience, in turn, helped me be a better engineer.

Tokheim's five-speed bicycle transmission on an all chrome-plated bicycle. In 1974, this invention won a spot in Industrial Research magazine's top 100 inventions of the year. The bicycle pictured here was on display at the Museum of Science and Industry in Chicago from 1974-1976.



What were some of the major equipment developments that occurred while you were managing Tokheim's engineering program?

I was Manager of Engineering and a corporate vice president for Tokheim from 1972 to 1982. During that time, we developed the first electronic dispenser display, the Model 158 and Model 162 self-service dispensers; vapor recovery systems; tank gauges; and POS devices. We placed enormous emphasis on design, durability and reliability. Of course, like the feather-touch nozzle, not all engineering efforts result in successfully or profitably marketing a product.

Our work on the electronic dispenser stands out in my mind as one of our best and most successful

projects. In 1972, Tokheim had not yet undertaken a project to develop an electronic dispenser, and the company allowed me to start such a project. I led a great team of engineers and gave them a free hand to do the project. By 1974, we were the first company on the market with an electronic computer in the dispenser. Our market share at the time was 25 percent. By 1976, our market share had increased to 46 percent because Tokheim had the only electronic dispenser in production on the market.

We did a lot of other things as well. As I have said, our engineering team was great. Believe it or not, we even brought out a five-speed bicycle transmission. It won an award from the Industrial Research magazine (the IR 100 Award) as one of the 100 best products brought to the market in the entire USA in 1974. This transmission had the same range as a 10-speed—it just made bigger jumps between speeds. It also could be shifted by twisting a handlebar grip while pedaling hard. But we were bucking a strong trend in public perception. People continued to perceive that 10-speed bikes offered much more value than five-speed bikes. In fact, 10-speed bikes outsold five-speed bikes by a factor of 30 to one. The product was on display in the Museum of Science and Industry, Chicago, and now is on display in my recreation room (see photo top left).

In 1985, I became Tokheim's Director of New Products and held similar positions until I retired from the company in 1993. Some of the products we developed during that period were new versions of the Tokheim Card System (dispensers with built-in card readers); vapor recovery systems; tank gauges; and POS devices.



Pictured here is the dispenser island curbing manufactured by Gene and his partner, Don Rhodes. The assembled 4' x 6' x 9" molded engineered plastic island form is in four sections that are bolted together. This is the only size available now. Designs are underway for other shapes and sizes, depending on demand.

Could you tell us about your involvement with the National Fire Protection Association (NFPA) and the National Conference on Weights and Measures (NCWM)?

From 1978 until my retirement from Tokheim in 1993, I represented the Gas Pump Manufacturers Association (GPMA) on the NFPA 30, Flammable and Combustible Liquids Code Committee and NFPA 30A, on the Automotive and Marine Service Station Committee. During that period, I also was responsible for representing GPMA on the National Conference on Weights and Measures (NCWM) Committee.

About a week after I retired from Tokheim, I went to Washington, DC and talked with executives at the Petroleum Marketers Association of America (PMAA) about representing the association to NFPA, NCWM, EPA and CARB. They hired me as a contract consultant. Now, I represent PMAA on the NFPA 30 Committee; the NFPA 30A Automotive and Marine Service Station Committee; and at NCWM and IFC meetings.

PMAA recently asked me to provide technical guidance on complying with Section 313 of the

Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and Section 6607 of the Pollution Prevention Act (PPA) of 1990. These laws require that, by July 1, 1999, owners of bulk plants and terminals must submit estimates of releases and waste management quantities of certain specified toxic chemicals to the US EPA. Details on these requirements and some of my guidance for compliance are included in my article in the May issue of PE&T ("Toxic Emissions Reports: Why and How You May Need to Do Them—Now," page 5).

Now that you are "retired," do you find yourself looking for things to occupy your time?

Not at all, because I quickly found things that are already keeping me busy. The work I'm doing for PMAA has been intensive at times. But the real deal is that I am now in the manufacturing business. So between my new business and PMAA, I don't find myself with much time on my hands. In fact, I hardly have time to do any expert witness work on fires at service stations. I used to do quite a bit of it.

I always heard that work is more fun once you've reached the point in your life that you don't have to work. I'm finding this to be true. I'm working hard and enjoying every minute.

What are you manufacturing and how did you get started in it?

After retirement, I got together with Don Rhodes (another former Tokheim vice president, who has also served as President of Gasboy, Inc., when it was acquired by Tokheim in 1987). We have designed and are now producing nonmetallic dispenser island curbing forms (see photo on page 28).

We had known that steel forms require painting and frequent repainting. The forms come from the supplier with primer paint, and you have to paint them. After a few years, the paint is in terrible shape, especially at facilities along the seashore and in areas where lots of salt is put down on the roads.

Our new concept is to manufacture the dispenser island forms from plastic instead of steel. Our engineered plastic is not damaged by water, salt or fuel. The color remains consistent throughout the material, and it won't rub off because it can't. Our standard forms are black because black has the best UV protection. However, gray and white are also available. We can custom match company colors upon request. Also, no painting is required.

Other advantages of plastic forms over steel forms are that they cost much less to ship (the customer pays for shipping); require less shipping time; and are simple to store. For a complete island, a plastic form weighs 44 pounds, compared to 170 pounds for a complete island steel form. We have a molded parts supplier who can ship the forms via UPS. The name of our company is Poly Concrete Forms, Inc. (PCF), and we are located in Fort Wayne, Indiana.

The bride and groom in this New Orleans paddle-boat wedding party are Gene's daughter Carolyn and Bill Dipaolo. The couple at left are Gene's son, Paul, and Paul's wife, Laura. On the right are Gene's daughter Cheri Churchward and her husband, Bart.



What were some of the engineering issues involved in developing the plastic island forms?

The major hurdle was the thermal-expansion of plastic. Plastic material expands about 0.5 percent faster than concrete. If you take 100-inch-long pieces of concrete and plastic through a range of temperature changes from zero to 100 degrees F, the plastic piece would be a half-inch longer than the concrete piece at the 100 degree F mark. This is due to thermal expansion. We have designed our forms so that the concrete holds the plastic and prevents it from moving so that it doesn't get longer. Instead of getting longer, the plastic gets a little thicker and stays bonded to the concrete.

We made the first forms out of extruded engineering plastic, supported by steel to stiffen them. We are thankful to Russ McGinnis of Mobil, who was the first to try them out. That proved too labor-intensive and overly expensive. So we designed and had a mold made for the plastic forms. We have filed for patents on all of our designs.

Who would you say had the most influence on your life?

My mother and father, no doubt. My mother was just a terrific person and homemaker. She and my father made my life wonderful. As I mentioned, my father greatly influenced me in my childhood years and even on into and beyond my college years. In addition to being a perfectionist when it came to mechanics and machinery, he passed along several pieces of advice about inventiveness and innovation that should be of value to anyone involved in this kind of business.

One was an old Chinese saying, I think, that "Every truly great accomplishment is at first impossible." Another one that my father often said was that "In the life of every project you will swear that the project is dead at least three times, but that doesn't mean it's really dead." How true were these words in many of the projects I worked on at Tokheim!

Tell us about your immediate family.

For 40 years, I was married to a wonderful woman, Marilyn, who passed away in 1996. We have three great children, and they have grown up to be happy people. That is one of my greatest satisfactions in life. My daughter Carolyn Dipaolo, her husband, Bill, and their daughter, Bonnie (age 4), live in Fort Wayne, where Carolyn is the managing editor of the local newspaper, News Sentinel, and Bill works for the County Office of Planning and Development.

My daughter Cheri Churchward and her husband, Bart, also live in Fort Wayne, where she is an interior decorator and he owns Bart's Car Stores. My son, Paul Mittermaier, and his wife, Laura (expecting in August), live in Pensacola, Florida, where they own a personal watercraft sales and service business.

In 1998 I married another wonderful woman, Phyllis Annis (see photo above), and added three grown children to the fold, Judy, Ron and Roger. Phyllis and I just finished construction of a new home in Fort Wayne. I have a brother, Norman, who is three years younger. He is retired after heading research for AeroJet, a supplier of large rocket engines in Sacramento, California.



Gene Mittermaier and wife, Phyllis, enjoy their vacation at Lake Louise in the Canadian Rockies.

What about your hobbies?

I have more hobbies than I have time for. Actually, I think my hobbies could keep me occupied full-time even if I were totally retired. Phyllis and I love to travel. So far this year, we have visited the Rattlesnake Museum in Albuquerque, NM; the National Aquarium in Baltimore, MD; River Walk in San Antonio, TX; and the beach in Costa Mesa, CA. I don't know where our next venture will be—Phyllis is reading some brochure on the Greek Islands.

There are many other things I enjoy as well, including 10-speed bicycling, swimming, walking, reading, golfing, tennis and driving. Every morning, Phyllis and I walk at least four miles before breakfast.

Recently, I've taken a course in astronomy and plan to take more. Phyllis just gave me a Meade ETX-90/EC Astro Telescope with Electronic Controller for my birthday. So far I've viewed the moon. The moon looks best when it is a half moon because you then can see the detail of the shadows in the craters. I've also looked at Mars, which is about 60 million miles closer to the earth now than usual. In our telescope, it looks like our moon only colored orange and shrunk to the size of a marble.

I really enjoy golf, although at best I am a bogey golfer. But I'm happy with my game because, after all, golf pros who practice by hitting one thousand balls a day only play each hole one stroke better than I do. With the right attitude, you can be happy no matter how bad you are at something. However, I think it's very difficult to maintain a positive attitude without the help of important people in your life. For example, Stanley Wulc has always been an inspiration to Don Rhodes, my business partner, and myself. He is the one who inspired us to start PCF. I could never have better friends than Stanley Wulc and his wife, Dora.

My dad passed away of a stroke at 87 years old just after he had chopped all of the ice off of his long driveway. He was always searching for the purpose God had in mind when creating human beings. Dad's conclusion was that if you had created something as beautiful as this earth and its surrounding universe, then, you would want someone else to see and appreciate all of the beauty you have created. I think it's a simple and true explanation of life; just thinking about it helps keep me grateful.