



DR. GEORGE GOBLE Recalls 40 Years of Changes in the Pile-driving Industry

By Lisa Kopochinski, Pile Driver Editor

If you ask Dr. George Goble what he enjoys most about the pile-driving industry, an industry he's worked in for 40 years, he'll tell you, without a doubt, it's the people.

"I've always enjoyed the time I've spent on the job site. This industry consists of a lot of colorful and delightful people," he says.

Even after four decades and retiring from three places – the University of Colorado, Boulder; Pile Dynamics Inc. (PDI); and GRL, he is still busy in the industry.

He does consulting work in the deep foundations area and conducts numerous continuing education seminars. He is also active with the PDCA Technical Committee and the Education Committee. About 15 years ago, he started a business that tests and load rates bridges and is still involved with that. "I suppose that the pile-driving industry is the nearest thing that I have as a hobby. I don't make much money in it, so I guess it must be a hobby."

Goble, who was born on a farm near Boise, Idaho, earned a Bachelor of Science degree in civil engineering from the University of Idaho in Moscow in 1951. The Korean War started in 1950 and, immediately upon graduation from the University, he served two years with the Air Force. After that, he worked as a bridge construction inspector for the Oregon Highway Department for two years. He then went to graduate school at the University of Washington at Seattle where he received an M.S. degree in structural engineering in 1957 and a Ph.D. in the same discipline in 1961. He spent the academic year of

1957-58 as a Fulbright student at the Stuttgart Technische Hochschule in Stuttgart, Germany.

During the years of his graduate studies, Goble worked as a structural engineer at an industrial facilities design firm in Seattle. He joined the faculty at Case Institute of Technology in Cleveland in 1961.

He was there until 1977 when he moved to the University of Colorado, Boulder as chairman of the civil engineering department and retired from the University of Colorado in 1992.

He says his career in the pile driving industry started in 1964 while on the faculty at Case Institute.

"We developed the capability to measure (routinely) pile top force and motion during hammer impact. From this, we developed methods of analysis that are quite accurate in predicting pile capacity. Also, hammer performance can be evaluated from those measurements. An electronic device was developed that processed the measurements in the field and provided the pile capacity prediction and the hammer performance information after each hammer blow."

This device became known as the Pile Driving Analyzer or PDA. In 1972, he founded Pile Dynamics, Inc. (PDI) to commercialize the PDA and was active with PDI together with

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"I began a research project that was funded by the Ohio DOT and the Federal Highway Administration. This project continued until I left Case in 1977."

The goal of the project, he says, was to develop methods of predicting the load carrying capacity of a driven pile by making measurements on the pile under the pile driving hammer at the end of driving.

Frank Rausche and Garland Likins, who had been his graduate students on the research project, until about four years ago when he sold his interest to them.

"I also founded GRL Engineers at about the same time as PDI. GRL developed engineering software and does engineering work with the PDA and other devices to help understand

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pile driving. The PDA is now used in about 40 countries around the world.”

PDCA and the industry

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“I had been in Taiwan and saw the use of cast-in-place piles in applications that were clearly not economical. We talked about the need for an organization that would promote driven piles. Chuck picked it up and did the work of forming the beginning of the organization. He really did a great job in getting it underway and in mobilizing Skyline to support the organization. I was a member of the original board of directors.”

Since the early 1960s, Goble has seen a major metamorphosis in the industry. “The changes in 40 years have been enormous. Hammers have become much bigger, the hydraulic hammer has appeared, hammer performance has become much more reliable, pile capacities have greatly increased, quality of operations is greatly improved and the industry understands pile driving much better.”

Even with the changes and advancements, he says the industry still faces its share of challenges.

“The driven pile is a very high quality deep foundation element,” he explains. “It can be installed in most subsurface conditions in a very cost effective manner. I believe that many designers do not understand this. The challenge facing the industry is to educate engineers about the advantages of the driven pile. PDCA is currently working to provide education for university professors and we’re also doing an annual seminar. We must continually look for other opportunities.”

In his spare time, Goble, who lives near Boulder, CO, enjoys spending time with his wife, Christine, and considers himself to be an avid gardener.

He also enjoys a close relationship with his son, Greg, and daughter, Tanya, who is the executive director of PDCA.

“It is very interesting to have the opportunity to work with one of your children. One sees them in a completely different light. It is sometimes a bit difficult, however, to take orders from them!” he smiles. ▼