



Andy Pearson

Happy Birthday, Mr. Midgley

BY ANDY PEARSON, PH.D., C.ENG., MEMBER ASHRAE

This month marks the 125th anniversary of the birth of Thomas Midgley Jr., a man who transformed our lives in more ways than most of us know, and someone who, for several years now, has been something of a hero of mine.

Midgley was born in Beaver Falls, Pa., in May 1889 to Thomas and Hattie and was raised in Trenton, N.J., and Columbus, Ohio, where his father worked in the automobile industry, principally in the development of tires for motor cars—a fledgling industry in those days. Thomas Jr. had a quick mind and was good with his hands, so he studied mechanical engineering at Cornell University in Ithaca, N.Y., graduating in 1911. Through school and college he played baseball and football, and while at Cornell he founded a student aviation club, although the club had no aircraft, not even a glider.

For a mechanical engineer, Midgley had a remarkable gift for chemistry, and became President of the American Chemical Society in 1944, the year of his death, having served on the Society's Board of Directors from 1930 onwards. He was responsible for four major developments in industrial chemistry, any one of which would have been a career-defining achievement. This unusual career path started in 1916 when he joined the Dayton Engineering Laboratories Company ("Delco") working with W.A. Chryst and C.F. Kettering.

As Kettering wrote in his biographical memoir of his younger colleague, "Midgley demonstrated unusual talents in all three of the important phases of industrial research; first in original investigation or invention; second, in development or in conversion to the stage of practical usefulness and, third, in selling the new thing to the public—or in some instances to management first."

I was impressed by the range of his interests beyond mechanical engineering and chemistry. He was deeply interested in history, zoology, writing poetry and recording music. He became an ardent golfer, with a handicap of five, and turned his experimental tendencies to the task

of conducting trials of different grass types, becoming an expert adviser to all the greenkeepers around Columbus.

I learned key lessons from reading about Midgley's life and work. Always be dissatisfied with the current state of affairs and look for ways to make improvements. Draw on as broad a range of observation and experience as possible when considering a new problem. Talk to people who use the current technology in their everyday routine and seek to learn from their experiences. Be flexible and be willing to modify the approach to a problem if progress is not forthcoming. Midgley was very interested in the development of young people in industrial research and development—his presidential address to the American Chemical Society was titled "Accent on Youth" and emphasized the following message. Pass responsibility to the young people in your organization. Help them to network with people outside their normal circle of contacts. Let them exercise their curiosity and give them full credit for what they achieve.

Midgley was captivated by the thought that, in his lifetime, life expectancy of men in America had risen by more than 50%. He observed that this had never before happened in a single generation in the history of mankind and would likely never happen again. He was deeply concerned about the effect that all that extra manpower in middle management was having on the young engineers entering the profession. This is also a significant lesson that we should heed today.

Midgley is now harshly criticized for his lack of understanding of the environmental harm caused by two of his innovations, the tetraethyl lead additive in gasoline and the chlorine-containing refrigerants. However, I believe that within the constraints of the knowledge of his time he was seeking improvement in all aspects of quality of life. As we start to introduce new halogenated hydrocarbons to the world, we will do well to follow that example, but with the benefit of a far deeper appreciation of the possible effects of our actions on health, safety and the environment. We must seek to identify the correct level of caution in our developments to make sure that we repeat Midgley's successes, not his oversights. ■

Thomas Midgley Jr.



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