

# A.G. CHRISTIE: GENERATING GREATER PROFESSIONALISM

*For almost five decades, in classrooms and corporations,  
the Mechanical Engineering professor applied his quiet work ethic  
and heat-power expertise to promoting professional standards for engineers.*

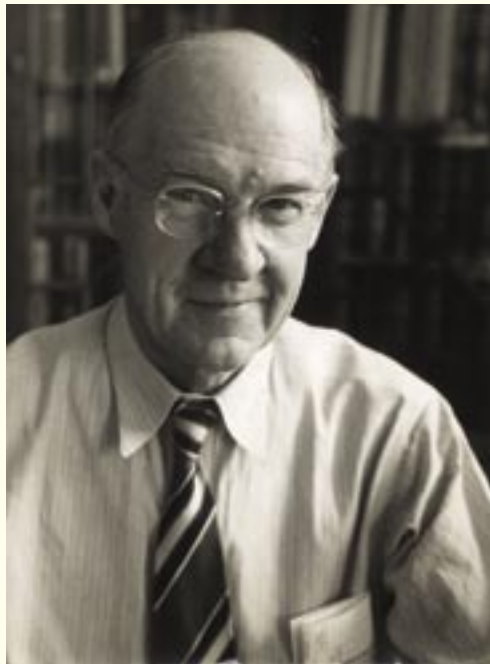
By Dave Beaudouin

The bas-relief memorial plaque, located in the Engineering and Science section of the Milton S. Eisenhower Library on the Homewood campus, bears a succinct summary: “Scholar, Teacher, Leader of Men. Alexander Graham Christie, Mechanical Engineer.” Yet the long legacy behind this brief legend reveals much about the life and career of a pioneering mechanical engineer and remarkable educator whose involvement with Johns Hopkins Engineering spanned nearly 50 years and several continents. Christie’s expertise on steam power plants attracted professional honors and consulting jobs from around the world.

## POWERING UP

Born in 1880 in Manchester, Ontario, Canada, Christie briefly considered a career in the ministry, but instead chose in 1898 to enroll in the School of Practical Science, an engineering college affiliated with the University of Toronto. Obtaining his mechanical and electrical engineering bachelor’s degree in just three years, Christie graduated in 1901 at the age of 20, right at the start of the Electrical Age. Soon after graduation, he landed his first job, as a lathe operator at the Westinghouse Machine Company in Pittsburgh. In a matter of weeks, he was transferred to the steam turbine department. This fortuitous move would lead to his involvement in the construction and design of steam turbines, which became the main focus of his professional career. Such was his rise at Westinghouse that he was put in charge of the company’s steam turbine exhibit at the 1904 World’s Fair in St. Louis, whose spectacular palaces, displays, and demonstrations of progress attracted 25 million visitors.

The decade that followed saw Christie shifting back and forth between education and industry. After a year as an instructor at Cornell University’s highly regarded Sibley College of Mechanical



**For many years after his retirement in 1948 from the School of Engineering, Alexander Graham Christie still actively conducted research at Johns Hopkins (1951 photo). He took many trips abroad during his career to study power generation in England and the continent, and frequently consulted for industry in his native Canada and other countries.**

Engineering (as it was called then), Christie over the next three years became a rising star in the power generation industry, first for the Allis-Chalmers Company and then as mechanical engineer in charge of power plants for the Western Canada Cement and Coal Company. In 1909, he became an assistant professor of steam and gas engineering at the University of Wisconsin, where he remained until he joined Johns Hopkins’ newly organized Department of Engineering in 1914.

## “EXCEPTIONAL ABILITY”

If there is a consistent thread that carries through Christie’s 50 years at Johns Hopkins, it is his uncompromising work ethic, coupled with a quiet intensity of focus. These characteristics were to win over generation after generation of students. As his former student John I. Yellott ’31, ’33 ME noted, “To the small number of graduate students who were privileged to know him more intimately, the true nature of his exceptional ability in his field became more apparent. The breadth of his industrial and consulting

work gave him a knowledge not only of the details of power plant design but also of the broad economic decisions that must be made before the designers’ concepts can come to reality” (*Johns Hopkins Alumni Magazine*, November 1948). Promoted to professor in 1920, a year later Christie became chairman of the Mechanical Engineering Department, a post he would hold until his retirement in 1948. For 21 years, until 1953, he headed the Night Courses for Technical Workers for part-time Engineering students.

During his Johns Hopkins years, “A.G.,” as colleagues and students affectionately called him, emphasized the need for raising the bar on engineering as a certified practice. As Christie stated in his 1963 autobiography, *What Does an Engineer Do?*, “In the early days of this century, engineers were regarded as upper class plumbers

*“He never preached, yet every class, every contact, every warm association was a sermon, a lesson in ethics, compassion, decency, and devotion to work and learning.”*

—ROBERT H. ROY '28, SPEAKING OF A.G. CHRISTIE

**This 1916 *Hullabaloo* portrait of Christie depicts him two years after he joined the faculty at the newly organized Department of Engineering at Johns Hopkins.**



with no professional standing. The present national demand for highly trained engineers has caused the public to recognize the professional status of engineers. Engineers must assume greater responsibilities in Government as most phases of modern life and national well-being are dependent on engineering developments.”

Christie did much to raise the professional status of engineering through his lifelong commitment to public service. During World War I, he was involved in developing anti-submarine measures, and in World War II, he was appointed director of training for the Baltimore War Manpower Commission. He helped establish the State of Maryland Board of Registration of Professional Engineers and Land Surveyors, and served as its first chairman. Christie held Registration Certificate No. 1, signed by himself. His son, Peter G. Christie '42 (see page 13) donated the certificate to the state board, which then presented it to the Engineering Society of Baltimore in 1990, the year the state board created The Christie Society to recognize engineers who had maintained their license for 50 years.

#### A LIFETIME OF ACHIEVEMENT

Throughout his life, Christie was recognized with other accolades. In 1939, he was elected president of the American Society of Mechanical Engineers (ASME), and that same year, was also elected an Honorary Life Member of the Institution of Mechanical Engineers of Great Britain. The American Society of Engineering Education, in which he was a Life Member, awarded him its prestigious Lamme Award in 1948. In 1953, ASME honored him with its George Westinghouse Gold Medal for his outstanding work in civic power development.

At the Whiting School of Engineering, the annual Alexander Graham Christie Lecture, co-sponsored by the ASME student chapter and the Baltimore section, brings an outstanding speaker to campus each spring.

From his retirement in 1948 until his death in 1964, Christie maintained his active relationship with Johns Hopkins as an independent researcher while pursuing consulting assignments around the world.

In *The Baltimore Engineer Newsletter* in 1965, Robert H. Roy '28, whom Christie had mentored and who at the time was the Engineering dean (see the Summer/Fall 2003 issue), expressed the feelings of many:

“This gentle, kindly man never preached in the classroom; on the contrary, his was a single-minded devotion to engineering, almost assuming that we, his students, would be as devoted to the cause as he. He never preached, yet every class, every contact, every warm association was a sermon, a lesson in ethics, compassion, decency, and devotion to work and learning. He was our teacher in all that is best in the meaning of the word.”



**In Christie's autobiography, published in 1963, he traced how engineering's professionalism had increased since the early 20th century, when engineers were perceived as “upper class plumbers” (1951 photo).**

## A.G. Christie Remembered

*“...He was forever being called upon as a consultant”*

**Charles D. Flagle '40, '54 MS, '55 PhD**, as an Engineering undergraduate in the late 1930s, studied under A.G. Christie and later became a professor of Mathematical Sciences in the Whiting School of Engineering. Flagle also is professor emeritus of the Department of Health Policy and Management at the Johns Hopkins Bloomberg School of Public Health, where he taught for 30 years.

“When it came time for Dr. Christie to retire, it took two professors to take his place, and here’s why. A.G. not only taught us about the manufacturing processes of power-generating machinery, but also, with the management of those processes and utilization of technical equipment, employing the organizational theories of [Frederick W.] Taylor and Gantt [Henry Laurence Gantt was an 1880 Hopkins alumnus]. For much of this, Christie drew upon his own experience, for he was forever being called upon as a consultant to help power companies decide upon what equipment they should use.

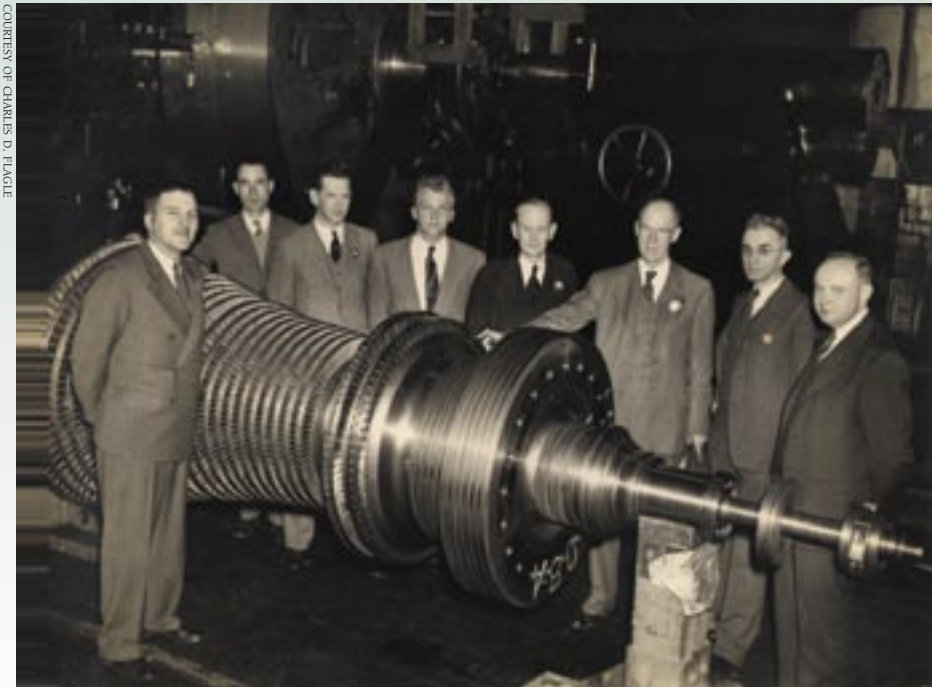
“After World War II and A.G.’s retirement in 1948, the Department of Mechanical Engineering needed a professor to take over this aspect of technical instruction focusing on organization and management, and yet another professor who was oriented to the new post-war world of modern engineering. And that’s exactly what happened.”

*“Father told a lot of stories on himself”*

**Peter G. Christie '42**, who was a Mechanical Engineering student at Johns Hopkins during the time his father was a professor, received his MA in architecture at Harvard University in 1949 under the tutelage of Walter Gropius, the famed architect. Opening his own architectural firm, Wilson & Christie, in Baltimore in 1950, Christie designed distinctive private homes and public buildings around the city, including the Greater Baltimore Medical Center on North Charles Street.

“My father was a quiet man. He let you do most of the talking. After a full day of teaching, he would come home for dinner and then go into his study, where he worked every evening on consulting projects. Yet he still had time for other interests. He was an avid gardener and outdoor photographer. In fact, many of his mountain photographs appeared on the covers of engineering magazines. Father told a lot of stories on himself—like when he was made the sheriff of a town in Alberta, where he was overseeing the construction of a cement plant in 1910. They gave him a badge and a pair of brass knuckles!

“How would I sum up his life? Just as his memorial plaque says—a leader of men.”



COURTESY OF CHARLES D. FLAGLE

**A.G. Christie (third from right) and Engineering graduates visit the Westinghouse plant in South Philadelphia in 1941.**