

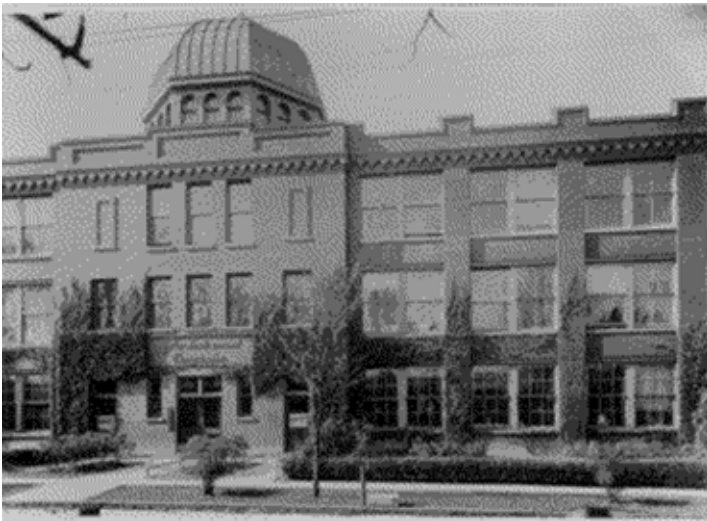
THE TAYLOR AUTOMATION HERITAGE

In 1851, George Taylor and David Kendall began making thermometers and barometers in Rochester, New York. Their firm was called Kendall and Taylor and started with a single rented room above the Post Drug Store at 4 Exchange Street.

David (at age 35) brought technical expertise to the business as his father had founded a thermometer company, possibly the first in the US, in 1820 in New Lebanon, NY. George was a brilliant young man of only 19 that brought a flair for selling and marketing. Although their skills complemented each other, after only 2 years the partnership ended. David then went off on his own to manufacture barometers.

The original business was focused only on the weather. It quickly expanded into other applications in 1855 with mantel, churn, distillers' and brewers' thermometers; starting Taylor's long legacy serving the process industries.

Frank Taylor, George's brother had his own thermometer company with partner and cousin Hamlet Richardson. The businesses merged in 1871. Then in 1872, Hamlet left the business for health reasons and it was renamed Taylor Bros. It was organized as a partnership until 1890 when it was incorporated and became Taylor Bros. Corporation.



The Taylor headquarters at Ames St in Rochester, NY

In 1904 the company announced the purchase of land and plans to build a much larger factory far from downtown Rochester on Ames Street. They began operations at the new plant in 1906 and would remain there until 1992. Today the site has gone through extensive environmental remediation required after years of thermometer production. It is now awaiting re-birth as a brown-field site.

THE TAYLOR AUTOMATION HERITAGE

Even in its early years, Taylor had been involved in many acquisitions including a controls company called Davis & Roesch Temperature Controlling Company. In 1907, Taylor consolidated and reorganized itself into Taylor Instrument Companies and began using the trade name Tycos. This trade name was used exclusively until 1932 in which the Taylor name was then used.

The company had a long history of technical innovation and investment. This commitment was evident early in its history when it started what is believed to be the first R&D department in the American instrument industry in 1911.

Taylor also had a major impact on America's success in both world wars. In WW I, it made about 99% of all altitude barometers (altimeters) used by the US. They also made airplane stratoscopes, inclinometers, and oxygen systems for pilots. The war also resulted in a large operation making compasses that would continue for many years.

In WW II, Taylor was the prime process instrumentation contractor for the Manhattan Project's gaseous diffusion plant. "The designing and procurement of process control instruments for the Gaseous Diffusion Plant at Oak Ridge, Tennessee marked a major milestone in industrial instrumentation. Taylor was chosen as the prime contractor for this undertaking and within an amazingly short time had designed, manufactured and delivered 43 carloads of unbelievably precise instruments for the processing of uranium." Policy Guide for Taylor, 1953

Perhaps Taylor's most remembered contribution to automation occurred in 1941, when two Taylor employees John Ziegler and Nathaniel Nichols developed a defined method for tuning controllers. They presented their method in a paper they gave to an ASME meeting that year. Their method was linked to the development and success of the Fullscope 100, the first controller with true PID functionality.

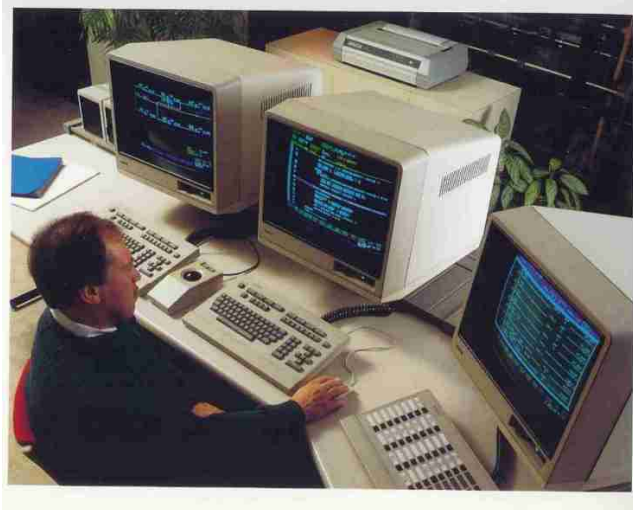
Taylor's more modern era was marked by mergers and continued technological innovation. In 1968, Taylor Instruments merged with Ritter Pfaudler Corp. a Rochester-based manufacturer of medical, dental and water processing equipment and supplies. This resulted in a holding company called Sybron Corp.



THE TAYLOR AUTOMATION HERITAGE

That same year they introduced the first commercially available batch control language known as Taylor Advanced Batch Language (TABL). It was the first language that let users program their own batches. In 1972, the term “unit relativity” – a technique for gaining efficiencies in both batch engineering and computer memory usage - was coined by Taylor Instruments.

In 1973, Taylor was the first to introduce real-time programming to the control industry through an adaptation of BASIC known as POL (Process Oriented Language) first used on the Taylor 1010 and MOD 3000 control systems. In 1980, Taylor introduced the MOD 30 panel controller and instrumentation system. It then introduced the MOD 300 distributed control system in 1984 with the first globally distributed relational database.



In 1983, Combustion Engineering acquired Taylor Instruments from Sybron. Then in 1987, the Taylor operations were integrated with AccuRay headquartered in Columbus, OH, a flat-sheet measurement and control company that was purchased by Combustion Engineering.

The pace of change quickened when ABB (Asea Brown Boveri) acquired Combustion Engineering in a deal announced in 1989 and completed in

1990. Taylor was further integrated into the related operations of its new parent. The Taylor MOD 300 systems division that had integrated with the AccuRay business, now was also integrated with the operations related to the Asea Master system in Vasteras, Sweden. The Taylor instrumentation division was eventually merged with the instrument and water meter business of Kent from the UK. The new instrumentation division went through several names such as ABB Kent-Taylor and ABB Instrumentation.

The Taylor part of ABB continued its tradition of batch innovation with the launch of Batch 300 in 1991 as the first S88.01 batch-oriented product. In 1994 it introduced the Production Data Log as the first batch-oriented historical data application.

THE TAYLOR AUTOMATION HERITAGE

In 1992, Advant technology based on HP Unix workstations was introduced for the MOD 300 system. The MOD 300 distributed control system has continued to evolve and now includes some features of ABB's new offering known as Industrial IT.

The Taylor people and technology have now been completely integrated into ABB operations. This process accelerated after the purchase of Elsag Bailey in 1999. This deal brought four more distributed control systems and many overlapping instruments to the ABB product line with the resulting need for consolidation. The US headquarters were soon moved to Wickliffe, OH, and instrumentation manufacturing went to Warminster, PA.

About the Author

Fritz Ruebeck is the founder of ClassicAutomation. He worked for the Taylor related parts of Combustion Engineering and ABB from 1989-2002 in marketing and service management.

References

“ 100 Years of Process Automation.” Control, December 1999, Vol XII No.12.

“ABB in Batch Processing Industries.” ABB, Publication 3BUS092041R0001, 1995.

Buckley, George J. “Modern Control Started with the Ziegler-Nichols Tuning” Control Engineering, October , 1990 volume 37, number 12.

Merrill, Arch “Graduated by Years from 0 to 100.” Taylor Instrument Companies, Rochester, NY, 1951.

“Policy Guide for Taylor Instruments.” Taylor Instrument Companies, 1953.