PREFACE

It's likely that few industrial companies founded 80 years ago or more have as detailed a record of their history as Allen-Bradley. This can be credited largely to the interests of the founders, Lynde and Harry Bradley (photography, history and clocks being among them) and their sense that what they were doing would be significant to a great many people for a long, long time. The creation of a company magazine in 1917 provided a medium for two historical accounts of the early years by Lynde Bradley, plus a rich potpourri of informal historical tidbits. The magazine was a key resource for researcher and writer Jan Gottfredsen of the public relations staff. She reviewed every issue, nearly 70 years' worth and well over 10,000 pages, plus Lynde Bradley's daily journal and expense records, two other histories (one published, one not), newspaper clippings and an assortment of other material in her effort to create a lively, interesting and accurate history. She interviewed scores of old-timers, both employees and retirees, to help verify facts. Needless to say, people's memories were not always in agreement. We wish to thank the many current and retired employees who have helped with the history and also wish to express special appreciation to Irene Braeger, retired secretary to Harry Bradley, and to Arnold Ericson, retired patent attorney, for their valuable counsel and assistance.

March, 1987
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Novel Motor Control Starts Company

At the same time two brothers named Wright were landing headlines with an engine powered “flying machine” at the sand dunes of Kitty Hawk, North Carolina, a Bradley brother was getting his unorthodox ideas on industrial motor control off the ground in Milwaukee, Wisconsin.

It was December of 1903. The United States was settling into peacetime and prosperity following the end of the Spanish-American War. In middle America, Milwaukee was a growing manufacturing city nestled in a beautiful bay along Lake Michigan’s western shores. Its population was 307,000.

**Nickel Beer Common**

This was an era when Milwaukee was known as the “German Athens.” Breweries were as common as the head on a frothy glass of beer. A nickel bought a stein of the amber liquid and quite often a sandwich, too. Popular sports of the day were canoeing along the upper Milwaukee River and “hitting a silly little ball into a cup” on a lawn green. Bicycles were a

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*Figures:* A replica of the wooden vice Lynde Bradley used to test his carbon-pile theory, top right. His first commercial electric current controller built in 1901, far right. At bottom right, a copy of Lynde Bradley’s first U.S. Patent, granted March 31, 1903.
Lynde Bradley, left, was 23 years old in 1901 when Dr. Stanton Allen loaned him $1,000. Dr. Allen was one of Milwaukee's leading orthopedic surgeons at the time.

Lynde Bradley, right, and Dr. Allen were both pioneering in the field of industrial control systems. Their inventions laid the foundation for the modern world of technology.

Industrial Controls Pioneer

Now the 20th century is nearly over. And the world has gone from horse-drawn carriages to the Space Age, from gaslights to laser beams, from handwritten ledgers to computerized records.

Allen-Bradley has been a part of these remarkable changes, supplying firms with quality electrical control products and components for more than three-quarters of a century. From one man's idea and another man's faith in a dream, Allen-Bradley has grown to a worldwide operation. It employs more than 14,000 persons in plants and offices in the United States, Canada, Mexico, England, West Germany, France, Spain, Italy, Sweden, The Netherlands, Belgium, New Zealand, Australia, Hong Kong and Singapore.

A Rockwell International Corporation subsidiary, Allen-Bradley is a leading worldwide supplier of industrial automation controls, data acquisition, data communications, electronic and magnetic products.

Plants Worldwide

Its manufacturing plants worldwide produce electromechanical controls, drives and drive systems, sensing devices, programmable controllers, intelligent motion controls, industrial computers, communication networks, data acquisition products and related hardware and software.

In addition, there are five sales subsidiaries, 192 sales offices in 60 countries, and joint ventures in Venezuela, Brazil, Japan, India and Italy.

Since its beginning, A-B has pioneered in the field of industrial motor control. The first salable product was a crane controller that bore no resemblance to other controls of the day. It provided speed control by using a stack of compressed carbon disks in place of the conventional resistors made of wire or cast iron grids.

It was this control, after several years of experimental work by Lynde Bradley and financial support from Dr. Allen, that trumpeted the start of a successful business venture.

Pendant for Electricity

How A-B's history developed is the rest of this story. Yet, the seed from which Allen-Bradley's roots sprouted was planted 10 years earlier with a 15-year-old's penchant for playing with electricity. A precocious youth, Lynde Bradley was tinkering with an idea gleaned from a borrowed textbook, "Electricity for Engineers" by Charles Desmond, when he made an interesting discovery.

It was 1893 and, using Desmond's theory, Lynde built his first motor controller using a stack of carbon disks. The compression-
Lynde Bradley made his first carbon-pile compression rheostat in 1893 after reading Charles Desmond's college textbook “Electricity for Engineers.”

Lynde built in a cellar workshop was attached to a toy lathe. It consisted of 11 three-eighth inch thick carbon disks sawed from an arc-light electrode. The disks were placed in a wooden tub, the compression being put upon the pile of disks by the jaw of a pattern maker’s clamp. The important thing about the device is that it worked, proving the theory was correct. In an account he wrote in a company publication in 1935, Lynde noted that to his excitement the carbon-piled rheostat “gave almost infinite control of the motor speed and even got hot. The latter fact, I think, impressed me even more than its resistance characteristics.”

First A-B Rheostat
An elementary device, it was really the first Allen-Bradley rheostat. While the device finally made its way to the ash heap, the principles that were applied were never forgotten by Lynde.

The Bradley family during the Gay Nineties was a well-to-do family that fell on hard times. They had been living in the Quality Hill area of Kansas City, Missouri, where the father owned a paper wholesale dealership. In 1891, however, the family returned to Milwaukee after the wholesale business was sold.

Lynde, who was born in Milwaukee in 1878, was 13 years old when the family returned and Harry, born in 1885 in Kansas City, was 6 years old. The father, Henry C., had a lingering illness and their mother, Clara Lynde Bradley raised the family once they returned to Milwaukee. Their father died in Wauwatosa, Wisconsin, on November 21, 1902. He was 77.

Lynde Goes to Work
Lynde, Harry, and their mother Clara lived in a large house with many rooms, a number of which Mrs. Bradley rented out for income. Also living with them was Mrs. Bradley’s mother, Mrs. Mary E.B. Lynde, widow of a well-known Milwaukee pioneer statesman, William Pitt Lynde. As a result of the family’s financial situation, Lynde left high school during the middle of his second year to go to work. His first job was with the Julia Andrea & Sons bicycle repair shop. The company repaired bicycles, fixed locks and did a good business installing electric doorbells.

Lynde stayed with the firm until 1898, when he quit to go into business for himself. He opened an X-ray laboratory in downtown Milwaukee. It had only been three

The corner of S. Second Street and W. Greenfield Avenue in Milwaukee, where A-B's headquarters plant is located today, is seen at the turn of the century.
years since Wilhelm Konrad Roentgen had discovered the amazing photography process, yet Lynde had been interested in X-ray photography since its development.

Lynde Meets Dr. Allen

Shortly after he opened the lab, the Spanish-American War was declared in April 1898. Lynde wanted to serve his country as either an electrician or X-ray technician. He wrote letters to the U.S. Secretary of War, the Surgeon General and a state senator asking for assistance in joining the war effort in either capacity. He was not successful. Yet other letters he had written to lawyers and physicians in Milwaukee prompted a visit to his laboratory by Dr. Allen. A strong friendship developed that lasted until Dr. Allen's death in Hood River, Oregon, October 16, 1916.

Lynde closed the X-ray laboratory in 1900 when he took a job as a trouble-shooter and erector with the Milwaukee Electric Co., a manufacturer of motors, generators and crane motors. Lynde saw the company face many problems with broken wires and crane motors burning out contacts. Unsuccessfully, he attempted to convince his employer to use his compression-type rheostat. Believing his idea was sound, Lynde refused to give up.

Doctor Saves Idea

His job with the electrical manufacturing firm soon became troublesome. There was friction between the directors and a general demoralization among the workers. Lynde tendered his resignation August 15, 1901.

In the course of a conversation with his friend, Dr. Allen, Lynde chanced to mention his idea for an electrical controller for cranes. Considering Lynde's position of unemployment, Dr. Allen offered to invest $1,000 to finance the construction of a crane controller prototype. Accepting the proposition, Lynde had his first model completed by his 23rd birthday, August 18, 1901.

"It was a simple device," Lynde later explained, "consisting of a single tube of gas pipe, 24 inches long, insulated with asbestos on the inside. It was supported vertically between two uprights, and the pressure was exerted through the medium of a screw operated by a crank. There were 76 disks in this rheostat, sawed from three-quarter-inch electric light carbon."

By September of that year, his ideas on the subject of carbon-pile rheostats had jelled. He started to assemble his plans and by October 6, 1901, Lynde had a device completed. That same day, he took the controller to the Milwaukee Electric Co. for a test. The controller was attached to the hoist motor of the assembly floor crane and for three months it worked satisfactorily. It was removed in December "for no other reason than investigation." Lynde wrote.

In the next two years, Lynde and
Dr. Allen worked to build several crane controllers that were tested by the Milwaukee Commmutator Bar Co., Allis-Chalmers, Falk, Chain Belt, Cutler-Hammer and the Milwaukee streetcar company.

**Corporation Papers Filed**

During this testing period, Lynde had rented space in the Milwaukee Commmutator Bar Co., Morris & Obenberger Co. and the Pfeiffer & Smith Machine Co., respectively. The latter proved the most beneficial spot because Charley Pfeiffer, an owner, had considerable interest in Lynde’s design. But business was not booming; orders were only trickling in. So, in an attempt to remain solvent, Lynde went to Chicago on a hunch.

It was November of 1903. Lynde’s mission was to visit with a distant relative, Kempster B. Miller, one of the best known telephone engineers in the country. Miller arranged a meeting in Chicago with Lynde, Dr. Allen and a Frank Jones, a Chicago entrepreneur, on November 12, 1903.

Jones was a young, clean-cut shrewd appearing man whose title was president of the American Electric Fuse Co. of Chicago, Illinois, and Adrian, Michigan; and later Muskegon, Michigan. Lynde and Dr. Allen proposed that Jones’ company manufacture the carbon-pile rheostat without them relinquishing their controlling interest.

**Royalty Agreement Made**

Jones studied the proposal and on November 24, 1903, he came to Milwaukee to announce the American Electric Fuse Co. would manufacture the devices on a royalty contract.

Jones did not like to work with partners, however, so he suggested that Dr. Allen and Lynde form a corporation. On December 12, 1903, corporation papers forming the Compression Rheostat Co. were filed with the Wisconsin Secretary of State. By January 6, 1904, a royalty agreement was signed between this new Wisconsin firm and the American Electric Fuse Co.

According to the contract, the fuse company agreed to pay Compression Rheostat 10 percent of the gross amount of sales of finished products and separate parts. The percentage was to be paid on or before the 15th day of each month.

At long last, after nearly three years of intensive experiments, Lynde and Dr. Allen had been successful in finding a manufacturer who would produce Allen-Bradley equipment under a royalty arrangement. In addition, Lynde was employed by Jones at $100 a month.

Little did Lynde and Dr. Allen realize then how the contract would sour.

**Contract Terms Set**

For example, another term of the contract required that the devices produced by the American Electric Fuse Co. for Compression Rheostat be advertised as “Allen-Bradley” apparatus. Dr. Allen had reasoned if business relations with the fuse company would ever erode, the A-B devices would have the benefit of past advertising. In theory the idea was good. In the long run, however, that stipulation became a hurdle because some of the A-B equipment made by the fuse company was of “wretched designs that we... had to live down,” Lynde explained later.

Although the firm had become connected with American Electric Fuse, Lynde continued to build the “Allen-Bradley” controller at the machine shop of Pfeiffer & Smith in Milwaukee. That firm was closely allied with the George H. Smith Steel Casting Co., which today is the Grede Foundry in Milwaukee. In fact, the machine shop occupied a portion of one of the foundry buildings. Pfeiffer & Smith’s office was on the first floor and its machine shop on the second floor. Compression Rheostat rented a small space on the third floor, where carbon was prepared, disks cut, resistance units assembled and the finished controllers tested.

**Move to Michigan**

That arrangement continued until September 16, 1906, when the Milwaukee production was moved to Muskegon, Michigan, where the local Chamber of Commerce had helped American Electric Fuse Co. 

*Continued on page 10*
Mrs. Clara Lynde Bradley, the Bradleys' mother, paints china in her Milwaukee boarding house.

A Family of Doers

In 1891 Milwaukee was already Wisconsin’s largest city; population 250,000. Manufacturing firms, breweries, merchants, small businesses and light industry were well established.

There was a fashionable downtown, stately courthouse square, large train depot, horse-drawn street cars, a grand opera house and an art gallery. The Lake Michigan shore presented a beautiful vista and a marvelous playground for city residents.

During the Gay Nineties, Milwaukee’s near South Side, where Allen-Bradley would eventually be established, was the pulse of the city’s manufacturing district.

It was to this Milwaukee that the Henry C. Bradley family returned after having lived for about six years in Kansas City, Missouri. Henry Clayton Bradley, a hapless entrepreneur who at various times operated a wholesale paper dealership and a novelty and notions business, was 66 years old and sickly. The burden of raising their two sons, Lynde and Harry, fell upon his wife, Clara Blanchard Lynde Bradley, 46, a Milwaukee native.

A very sociably responsible, independent and resourceful woman, Clara had the heritage of a family of doers.

Her father was the Hon. William Pitt Lynde, a leader of Milwaukee’s bar in the city’s early days. The 1838 valedictorian of Yale College and a graduate of the Harvard Law School, Mr. Lynde came to Milwaukee with his bride, Mary E. Blanchard, from Tuxton, New York, in 1841. Following their wedding in Tuxton, the Lyndes journeyed to Milwaukee via the Erie Canal; arriving here aboard the famous Great Lakes steamer “Wisconsin.” The newlyweds werejoining Mr. Lynde’s brothers, Charles and Watts, who had moved to Milwaukee earlier. The two brothers later died in a fire aboard a steamer they had taken back East for their belongings.

Upon his arrival, Mr. Lynde opened a law office with Asahele Finch Jr. The partnership was the forerunner of Wisconsin’s oldest and largest law firm, Foley & Lardner of Milwaukee.

Grandfather Noted Statesman

Mr. Lynde, a specialist in commercial and admiralty law, was a noted statesman and abolitionist. In 1842, he and his partner guided Milwaukee’s first “Underground Railroad” passenger, runaway slave Caroline Quarles, 16, from St. Louis, Missouri. Mr. Lynde’s list of civic duties included serving as attorney general of the Wisconsin territory, 1846-1848; one of the state’s first U.S. congressmen, 1848-1849; mayor of Milwaukee, 1860; state assemblyman, 1866; and state senator, 1869-1870. From 1875 through 1879, Mr. Lynde returned to the District of Columbia as a congressman, and he was a manager of the infamous and unsuccessful impeachment trial of William Belknap, Secretary of War, in 1876. He died in Milwaukee December 18, 1885, at age 66.

Mrs. Mary Blanchard Lynde was very active in Milwaukee, too. She was known as a woman of great ability and was a founder of the Wisconsin Women’s Club in 1878. A very charitable lady, Mrs. Lynde was...
A childhood portrait of Lynde, left, and Harry Bradley taken in Kansas City, Missouri, about 1890.

Harry Bradley and Marion Becher courting in Milwaukee’s Juneau Park. They were married in 1907.

In 1917 Harry Bradley, ferries raft passengers Marion Becher Bradley, left, and Caroline Dool Bradley at Harry’s and Marion’s summer home “Clay Pool” in River Hills, Wisconsin.
considered Milwaukee's first social worker. She was one of the leaders of a group of Milwaukee socialites who successfully demanded that more humane jail conditions be established, which eventually led to the building of a new county jail. She was instrumental in starting the Milwaukee Industrial School for Girls and the city's first orphan asylum. She was 78 when she died in June 1897.

William and Mary Lynde's first home was a modest dwelling with two huge bay windows at the corner of E. Mason and N. Jackson Streets, which is now part of Milwaukee's downtown business district.

The family lived there for 20 years before moving into one of Milwaukee's first and most fashionable mansions in 1861. Called "Lynden," the gothic styled, gabled house was located on 35 acres of wooded land on what was then the outskirts of Milwaukee. Lynde was built at the corner of N. 22nd Street and W. Juneau Avenue, which today is part of Milwaukee's West Side. The stately home eventually became part of the former Misericordia Hospital and was used as a manor for the Sisters of Misericordia before it was razed in 1969.

Royalty Comes to Dinner
Built by master carpenter Charles Foote, the home was a classic example of the gothic revival architecture. It was a beautiful rambling house in a park-like setting that included a pond big enough to have an island in it. It was in this elegant home that the Lyndes received and entertained King Kalakana, 38, of Hawaii in the winter of 1875. The king had come to dinner to ask Mr. Lynde for his daughter Clara's hand in marriage. He had met Clara some years earlier while she was touring the Hawaiian islands. The king went home alone, however, and shortly after that Clara married Henry Clayton Bradley.

Bradley, who originally came from New York state, owned a novelty and notions store in Milwaukee at the time. A few years later, the Lynden mansion was the birthplace for the couple's first child, Lynde, who was born August 19, 1878. Clara was 33 years old and Henry was 53 when their son was born.

By 1891, however, the mansion had been sold. Mr. Lynde had been dead for about five years and no family member had resided in the huge house since 1886. Although there were several children in the Lynde family, little is known of Clara's brothers and sisters.

According to early Milwaukee city directories, a Henry C. Bradley Co. was in business from the late 1850s to the mid 1870s in Milwaukee. It was a wholesale business where notions, linens, stationery, laces and hose were sold. Another gap in the family history occurs between the birth of Lynde in 1878 and the birth of the Bradleys' second child, Harry. According to birth records on file in Missouri, Harry L. Bradley was born in Kansas City, Missouri, January 5, 1885. In addition, the Henry C. Bradley family begins appearing for the first time in the Kansas City directory that year.

The Pabst Building (with tower in background) is where Lynde Bradley had his X-ray business in 1898. This photo looking west along Milwaukee's downtown Wisconsin Avenue, was taken about 1910.
The Bradley family was well-to-do when they lived in Kansas City as they resided in a prestigious area of town known as “Quality Hill.” In 1891, however, the family moved from Kansas City back to Milwaukee. It was from this time on that Clara Bradley was the family’s presiding parent and little is known about her husband, except that he was ill. According to a Milwaukee newspaper account, Henry C. Bradley died November 21, 1902, in Wauwatosa, Wisconsin, at age 77.

After returning to Milwaukee, Clara ran a boarding house on Milwaukee’s near East Side, just north of downtown near the lake. Her mother, Mrs. Mary Lynde, and brother, Tilley Lynde, also moved into the house.

It was in this house that Mrs. Bradley’s older son, Lynde, tinkered with electricity in a basement workshop. At age 15, he developed a carbon-pile rheostat that 10 years later led to the beginning of the Compression Rheostat Co., Allen-Bradley’s forerunner.

But Lynde wasn’t the family’s only inventor. Mrs. Bradley also was busy inventing. She created a “union suit” for women and obtained two patents on her invention, which was actually “longjohns” for women. Even brother Harry was an inventor. A circular wash fountain that allows several people to wash their hands simultaneously is one of his better-known patented inventions.

The brothers eventually married. Harry was the first to take a bride when he married his childhood sweetheart, Marion Becher, on December 19, 1907, in Milwaukee. The couple divorced in 1925, but their two children are beneficiaries of a shared Allen-Bradley Trust. The daughter, Marion Bradley Glass Via, resides in Roanoke, Virginia, and a son, Harry “Jerry.” L. Bradley Jr., lives in Framingham, Massachusetts. Their mother, Marion Becher Bradley, died July 18, 1974, at age 88, in Pasadena, California.

Lynde married an Allen-Bradley secretary, Caroline Doll, in Milwaukee on June 28, 1912. They had no children. Sometime between Lynde’s death in 1942 and Caroline Bradley’s death in 1954, Caroline adopted her niece Sara Doll. Caroline’s will made Sara and a nephew, Kirk Lynde Doll, equal beneficiaries of a trust created from Caroline’s one-third shares of A-B stock.

During the first quarter of 1926 Harry married again. His second wife was Margaret “Peg” Blakney Sullivan, and according to a report published in March 1926 in an employee magazine “Harry and Peg sneaked off to Waukegan, Illinois, and tied the knot ... .” It was the second marriage for both. Peg became well known in Milwaukee not only for her devotion to and support of the arts, but also for her contributions to a variety of charities. She also owned women’s apparel shops in Milwaukee and Naples, Florida. When the Allen-Bradley trusts were created in 1945, Peg was named a beneficiary. She died February 1, 1978, in Naples at age 83.

Harry and Peg Bradley’s daughter, Mrs. Jane Uihlein Pettit, also resides in Milwaukee and Florida. Following the sale of Allen-Bradley to Rockwell International February 20, 1985, Mrs. Pettit and her husband, Lloyd, pledged to donate $30 to $40 million to build a sports complex for Milwaukee County. The facility, to be named The Bradley Center, will honor the memory of Harry L. Bradley.

Jane Pettit, and her two children from a marriage to David Uihlein Sr., also were named beneficiaries of one of the five original Allen-Bradley Trusts created in 1945. Another trust, which originally named Margaret Loock as a beneficiary, became the Allen-Bradley Foundation Trust after Mrs. Loock, the wife of company executive Fred F. Loock, died. The Loocks had no children.
build a new manufacturing plant. In the years prior to the 1906 move, Lynde continued to research and develop his product, and occasionally he reaped the benefit of an order.

Shortly after Compression Rheostat had begun working with American Electric Fuse in January 1904, a skinny, bespectacled, 19-year-old youth was hired at $60 a month to help Lynde with the drafting and a variety of other duties. The young man was Harry Bradley, Lynde's younger and only brother.

Harry started on a Sunday and Lynde remembered it was "unusual, but we were hard pressed for drawings and he (Harry) would work on these." Besides drafting jobs, Harry also supervised the machine shop, prepared insulated tubes for the carbon disks, assembled and tested controllers and then boxed and shipped them. On the side he also did some bookkeeping and typing. According to Lynde, Harry was "quite a wonder for a boy of 19."

Soon the yearling firm found it needed some office space and rented a tiny room above a delicatessen store. The Bradleys occupied the front room office above the A. Lewis Highway 15 Grocery for only six months before the "smell of the place and the rodents" drove them out, Lynde once said. As an alternative, George Smith let Lynde and Harry have "a large, comfortable room" in back of what was then the office of the steel casting foundry.

Meanwhile, both Lynde and Harry had been hard at work producing demonstrators. The first apparatus built under the new contract was a demonstrator model, finished on February 17, 1904. A second model was soon completed by April 22, 1904, and it was shipped to the Louisiana Purchase Exposition at St. Louis, Missouri. The exposition was more generally known as the World's Fair.

**Blaze Brings Business**

While Lynde was staffing the booth at the World's Fair, the Smith foundry and Pfeiffer-Smith machine shop were destroyed by fire. The Bradleys only lost a few patterns in the blaze, however. While rebuilding his plant, George Smith ordered 13 controllers at a total cost of $1,000. It was the first order received by American Electric Fuse for "Allen-Bradley" equipment. It also became the first really successful installation. Those controllers remained in service for more than 12 years.

Other orders were only trickling in and Lynde was having problems with Jones, particularly with collecting the royalties. Although there was a deep rapport between the Bradleys and Charley Pfeiffer
and George Smith, the lack of rent payments and other bills forced Pfeiffer and Smith to cut off Jones’ credit in July 1905. After that, work by that machine shop was done only when the bills were paid up.

Lynde became so disheartened with the progress of the operation that he advised Harry to find another job. On August 26, 1906, Harry accepted a position with the Battery Power Co., a firm trying to develop a new type of storage battery. Among other duties, Harry had to drive around Milwaukee in a battered car trying to break down the batteries he constructed.

Lynde Goes to Michigan

By September 1906, Lynde finally received instructions from Jones to move Compression Rheostat’s operations to Muskegon, Michigan, where the fuse company had just opened its new plant. Hoping things would get better, Lynde left Milwaukee on a Lake Michigan car ferry on September 16.

Once settled at the Muskegon factory, a few of the vexing problems seemed to clear up. The change was partly due to some research work being done by Harry in Milwaukee. It was beginning to pay dividends. Lynde persuaded Jones to hire Harry and have him continue his research in Muskegon. Harry arrived there around Thanksgiving in 1906.

A Deal Goes Sour

From his closer viewpoint in Muskegon, Lynde began to realize Jones was not an ethical businessman. He ran into some very questionable situations which seemed to go from bad to worse, particularly when it came to empty promises from Jones to pay the Bradleys’ salaries and royalties. The machinations and double crossings of Jones, plus a rift with Jones’ devious brother, Henry, finally reached a head. In a row with Jones, Lynde resigned on July 17, 1909. He took the night ferry back to Milwaukee.

Describing that parting, Harry later reminisced:

“I went to the boat dock … not only to be with him but to tell him of my own plans. After Lynde had gathered together a few personal belongings and left the factory, Jones sent for me and told me he wanted me to stay, that I would be promoted and would get more money. I said I didn’t know how I could stay. He told me to think it over.

“After Lynde’s boat had pulled away from the dock, I hired a dray and with the help of Carl Calkins (an American Electric Fuse Co. employee at that time) I went to the plant and loaded all our belongings on the wagon and left. I arrived in Milwaukee on July 23, 1909.”

In the meantime, Lynde had been in contact with Dr. Allen and the Pfeiffer & Smith Co. upon his return to Milwaukee. Although they expected a legal battle, Lynde and Dr. Allen still had decided to go into business for themselves. On July 21, Lynde wrote a letter notifying Jones that he and Dr. Allen were terminating the royalty agreement between Compression Rheostat and American Electric Fuse.

Harry Bradley relaxes at Padley’s, a boarding house in Muskegon where he and his wife, Marion, resided in 1907. Note the foot and hand X-rays on their mantelpiece, which are remnants of Lynde’s earlier X-ray business.
Jones Threatens Litigation

As Dr. Allen and Lynde had anticipated, Jones’ reply, dated July 23, 1909, threatened litigation. He said that the Compression Rheostat Company “may feel confident about a victory,” but once in court, if the Bradleys lost, the American Electric Co. would not only take control of the sought-after patents, but also would demand a “heavy claim of damages.”

So began years of litigation. Nearly 50 years later, Harry recalled:

“It was litigation out of which came the tragedy of a prison term for one man, a suicide’s grave for another man and, yet, there also came events having a very great bearing on the far future of a company upon whose continued well-being depends the well-being of a great many people.”

Because of the threatening legal ramifications, a lawyer was retained for the Compression Rheostat Co. It was Louis Quarles, a boyhood friend of the Bradley brothers. Quarles had been admitted to the bar in 1908. His connection with the company in 1909 fused a personal and business relationship with the company and its officials that lasted 63 years. When Quarles died on February 8, 1972, at age 89, he was an Allen-Bradley Co. Trustee. He also had served on the company’s board for several years and was its secretary from 1917 to 1971.

But in 1909, as the lawyers for both parties began their activities and correspondence, the American Electric Co. lawyer continuously attempted to reach an out-of-court
settlement and obtain the rights to the patents. Although the Compression Rheostat Co. accepted a royalty check for $1,238, it refused any other payment offers, compromises or settlements.

Lynde Calls Jones' Bluff

By refusing to hand over patents, Lynde and Dr. Allen were attempting to call Jones' bluff. Neither the doctor nor Lynde believed Jones' dealings in Muskegon had been clean enough to have his "books opened for inspection," Lynde later said.

"We had no proof, but in Muskegon, there were many factory stories of crooked deals and from personal experience, Lynde and I knew that Jones had surrounded himself with slippery assistants. Consequently, we were sure Jones would never start legal action against us, or against any customers, because if he did, we would be in a position to force him to open the company's books," said Harry.

Banking on the hunch Jones was too involved in shady deals to open his books to court scrutiny, Dr. Allen and the Bradleys proceeded in late July 1909 to rent the second floor of the rebuilt Pfeiffer & Smith building.

Within the year, the company's name would be changed to the Allen-Bradley Company. The building where the company's headquarters was located remained part of the growing company's complex until the structure was razed in an expansion project during the 1940s.

During the last half of July 1909, an agreement was reached with Pfeiffer & Smith for the production of Allen-Bradley devices. On August 6, the company began drawings and started producing electrical control apparatus in Milwaukee.

The first devices built in 1909 under the new agreement were the former L- and K-type starters. Next the S-type crane controller and the R-type controller were constructed and ready for the market around the first part of 1910.

Customers Badgered

Meanwhile, the American Electric Fuse Co. embarked on a sort of guerrilla warfare that consisted of sending harsh literature informing customers and prospective customers that American Electric Fuse Co. had the sole right to manufacture A-B devices and any other firm doing such was in violation of those rights. The fuse company's notices and its salesmen also emphasized that persons buying from A-B could become entangled in a future court fight. A-B countered these attacks with advertising stating the company was not com-
Harry Bradley, wearing a shop duster here in 1912, technically became the company’s first employee when his brother, Lynde, hired Harry shortly before his 19th birthday in January 1904.

Harry Bradley, 1917

An American Electric Fuse Co. exhibition booth featuring “Allen-Bradley apparatus” between 1906 and 1909

Harry Bradley, wearing a shop duster here in 1912, technically became the company’s first employee when his brother, Lynde, hired Harry shortly before his 19th birthday in January 1904.

posed of disgruntled employees as charged by the fuse company.

The adverse advertising campaigns did not make it easy for the fledgling motor control company, but the Bradleys continued to design devices and manufacture their equipment with the aid of Pfeiffer and Smith. During this shaky reorganization, the friendship and interest bestowed by the Pfeiffer & Smith owners were paramount to A-B’s future success, Lynde later noted.

While the patent war was being waged, Dr. Allen and the Bradleys received offers of purchase from two large Milwaukee-area manufacturers. One offer, from Culler-Hammer, was quickly rejected by the brothers. But the other offer, made by the Allis-Chalmers Corporation in January 1910, came as a surprise. Lynde considered it slightly and then decided to ask for the unheard of selling price of $250,000. (At today’s inflated prices that amount is approximately $1.65 million for the rights to a few patents and some minor equipment.) Harry said they would never accept it, to which Lynde replied as he grinned “I don’t think they will, either.

“I have talked over this whole matter with Louis Quarles and I have told him, as I have told you many times, that I am sure we can build a good business if we make good products, and if we get and train good people,” said Lynde. “None of us were surprised when Allis-Chalmers turned down, with great emphasis, firmness and promptness, the price Lynde put on the property,” Harry later said.

Brothers Split Duties

Shortly after that, Lynde and Harry Bradley decided to split the responsibilities of running the company. Lynde returned to the drawing board, commanding the design and research areas, and

Harry shouldered the sales, personnel and financial affairs of the business.

Neither side was getting anywhere with the patent disagreement by 1911, and it appeared that the fight was hurting both companies. Then the dark cloud’s silver lining started to show. On June 9, 1911, news arrived from a credit rating agency in Grand Rapids, Michigan, that the American Electric Fuse Co. was in financial difficulties and had made an assignment of its assets. It appeared the firm would soon file for bankruptcy.

Jones, meanwhile, had been arrested for fraud and forgery and jailed. Newspaper headlines ranked him with “the world’s greatest swindlers.” The news stories noted his deeds were done with “cleverness, fertility of invention, coolness, audacity and resource, the admiration and wonder of leading financiers of the west.” Jones was convicted of his fraudulent dealings, which amounted to $720,000, on July 6, 1911. He was sentenced to four to 14 years at the Michigan State Prison at Ionia. Later he was pardoned after serving about five years of his sentence.

Although Jones was convicted, it still left the matter of his former business in the hopper for bankruptcy court. Fearing A-B patents would be sold in a bankruptcy sale, the Bradleys moved quickly to obtain the sole rights to these

“With the Times”

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Changing With the Times
patents. After much haggling and various court appearances, an agreement was finally reached on February 10, 1912, between the court and A-B. “We got back the rheostat business, including jigs, fixtures, patterns and drawings for $4,000, which we had to borrow,” Lynde explained. “We also received all the patents and the capital stock of the American Electric Fuse Co. of Illinois.”

Second Suit Filed

Just when the Bradleys thought they were free of any more patent hassles and fuse company shenanigans (and they could set out to build their Milwaukee-based plant), they were sued by Henry T. Jones, an older brother of the incarcerated fuse company president. The suit alleged infringement of patent.

Lynde sent the letter detailing the suit to Kempster Miller, the relative whom he originally had contacted in 1903 in Chicago and who had therefore seen his carbon-pile rheostat prior to Lynde being introduced to Frank Jones.

Miller wrote a letter outlining such encounters to the elder Jones’ attorney assuring the barrister that any legal action would be proven against his client, who claimed the patent material in 1911. There was some correspondence between lawyers in the matter, and then suddenly it ended as fast as it began. The elder Jones killed himself, eliminating the last connection between Allen-Bradley and the American Electric Fuse Co.
When Charlie “Cholly” Gross applied for a job at Allen-Bradley in late 1909 there was no employment form to fill out or waiting for an interview. Acting on a tip from his wife, Caroline, that the owners, Harry and Lynde Bradley, were looking for help, Gross came to see them about a job.

After talking with Lynde, the 26-year-old “jack-of-all-trades” was hired. When he reported to work on November 1, 1909, he became the first employee of the “new” Allen-Bradley Company in Milwaukee. From the day Gross came to work, the foundation of the company was being laid by the careful selection of people.

Describing their hiring philosophy, Harry once explained: “What we wanted, and what we made up our minds to get, were men whose skills were for sale but whose principles could not be bought. Not clever men, but productive men; not brilliant men, but steady men. Employees, who in a crisis, would stand firm because their principles would not allow them to surrender to a moment of expediency. We wanted men who, however small the business, or however small the transaction, would give top service to both because, being born to business, it...
In 1916, the shop force consisted of 33 employees, 30 of whom are pictured here. The first and last name of an employee is indicated if known. The workers from left to right were: First row — Charles Engel, Heltmach, Kosinski, John Pauisen, Pyzik, Leo Polatski, Jack G. Freitag. Second row (seated) — Wyeth Allen, Nick Wontowski, Frank J. Jarecki, Joe Szymanske, Chester Hammond, Lisicki, George Lukaszewski. Third row (standing) — Komasa, Joe Hoppa, Schmidling, Oscar Star Sr., Lemke, Drezdon, August S. Bizewski, Bernard A. Nowicki, Wegnes. Unknown, Konline. Fourth row — John Wagner, Groke, Guy Wright, Anton "Tony" Brandel, Laben.

This young man always displayed a penchant for bow ties. He Started at A-B as a draftsman in 1910 but when Fred F. Loock retired 57 years later he was A-B's president. Loock also was an original trustee.

In the mid-1920s, several Allen-Bradley East Coast sales managers strolled the Boardwalk in Atlantic City, New Jersey. From left: Arthur Rocke, a New York City export agent for A-B; Marcus Hoyt Hallenbeck, Boston district manager; Carl N. Calkins, New York district manager; and George F. Pain, Philadelphia district manager.
Above: The first floor manufacturing area of the purchased Pfeiffer & Smith building about 1920. The left side of the room included the lathe, hand screw, shaper, automatic, tool crib and drill press departments. The right side was home for the punch press, hardening, cabinet, tool making and bench departments as well as milling machines. Shipping was located in the back right corner.

The second floor assembly area about 1911 with a number of R-type controllers foreground ready for shipment.
was as natural for them to make and distribute goods as it was for a born sailor to go to sea.

**Philosophies Formed Early**

"I don't suppose a day went by that Lynde and I did not talk about the sort of company we wanted to build, and the kind of people we needed if it was to be built. Lynde wanted, and so did I, people who thought of their jobs not in terms of paychecks, but as the end result of their own work. We were small, but we were building for more than a day, and more than a year," Harry said.

It didn't take long for the small motor control company to get into gear. At first Gross was the only employee and his tasks varied. Whatever had to be done was his job. But as the shop grew, Gross eventually was put in charge of Allen-Bradley's first manufacturing area. When he retired in 1952, he was manager of the Repair Sales Department and his son, Roger, also worked for the company. Roger retired as manager of the Shipping Department in 1974.

Often referred to as a pillar of the company, the senior Gross helped shape the destiny of A-B in several ways. Not only was he a dedicated worker, but upon his recommendation other valued employees were hired. One of them was a youth fresh out of high school, his neighbor, Fred Loock. He became one of the company's first draftsmen on July 1, 1910, and went on to become president of the firm, which he dynamically led for many years.
A few fellows who had worked with the Bradleys at the American Electric Fuse Co. in Muskegon, Michigan, also would settle in Milwaukee and build their careers at A-B.

Carl L. Calkins, who had accompanied Harry and belongings back to Milwaukee the summer of 1909, started work for Allen-Bradley as a salesman in 1917 following a stint with Allis-Chalmers in Milwaukee. Calkins retired in 1952 after heading the New York district sales office for 33 of his 35 years with A-B.

Freitag Joins Firm
On July 22, 1912, John G. Freitag was hired. He also was a former fuse company employee in Michigan. When “Jack,” as he was called by friends, started at A-B, he kicked off the longest continuous employment of a family in the history of the company. There were 12 employees at Allen-Bradley at that time. When he retired in 1953 as head of the Plant Protection Department (Plant Security today), there were more than 4,000 employees. His son John C. (“Jack Junior”) came to work at A-B in 1936. He retired as assistant hourly employment manager in 1977.

His son, Roger, currently is manager of Corporate Employee Benefits.

While Lynde and Harry were in Michigan, the Compression Rheostat Co. built some direct current starters rated up to 20 horsepower. Other starters with ratings of 75 and 150 horsepower also were made there. These models were continued once the Bradleys were in Milwaukee.

With the rapid growth of the electrical industry, A-B’s line changed from a few simple direct current controllers to a “complex and varied line of both direct and alternating current devices,” Harry later noted. “In the years 1912 through 1915, with full time to spend on development, Lynde brought out a number of new devices and obtained seven different patents covering current controllers, resistance devices, telephone transmitters and a process of lining containers,” he added.

It was a period which marked the rapid expansion of A-B’s research and development personnel, as well as a mushrooming factory staff that began to crowd its once almost vacant rented space.
WWI: Era of Growth

As Allen-Bradley grew, the globe began to shrink. World peace was shattered on June 28, 1914, when World War I erupted in Europe. As the United States prepared for possible entry into the war, orders were streaming into Allen-Bradley. Most were from private firms, but government connected. The United States entered the worldwide conflict on April 6, 1917.

Earlier that year on January 2, the Bradley brothers purchased the Pfeiffer & Smith machine shop from Charles Pfeiffer. His partner, George Smith, had died in 1912. With the sale, Pfeiffer became an adviser to the Bradleys.

Although they lacked formal business or technical training, the Bradleys realized the importance of adding professional and skilled employees to the payroll if A-B were to be competitive. During those formative years, a number of skilled employees joined the organization as it began to expand to meet mushrooming orders.

150 Employees in 1917

In 1917, when a census was taken to determine the number of men eligible for the draft, there were 150 employees. Noting the company's rapid growth during those years, Lynde registered this comment in a later historical account:

"The fact of the matter is, that after the year 1912 (or thereabouts?) the situation became increasingly more complicated and more difficult to describe, for the company was being carried along by an organization of steadily increasing size and ability rather than just by Harry and myself."

Among the original office staff were Wyeth Allen, Henry "Hank" D. Lindsay, Fitch A. Clark, Herbert Banks, Harry Mortimer, Chester Baird, George Snodgrass, John
Wyeth Allen was the son of the Bradleys’ financial partner, Dr. Stanton Allen, who died in 1916. A mechanical engineer from the University of Michigan, young Allen was the first plant manufacturing manager, joining the company in 1915. He left A-B in 1919.

Meanwhile, the shop force also swelled as skilled tradesmen were hired. Among the fellows who started punching A-B timecards were Tony Brandt, H. George Zalusky, Nick (Wisniewski) Wisner, Al Budde, Leo Reitz, John “Opie” Paulson, Cesare Vincenzi, Charlie Engel, W. Milford Meddaugh, Jacob Mahlberg, Jimmy Creakbaum, August Bizewski, Frank Hawley and Bob Whitmore.

Hawley Recalls WWI Era

A 1978 interview with Frank Hawley, who started at A-B in 1916, recalled the era:

“We were on the second floor of the Ffeiffer & Smith building. A bookkeeper, the engineering and purchasing departments and drafting room were up there. I was in a section where the telephone operator and the stock records were located. Taking care of stock records and inventory was my first job. Allen-Bradley’s manufacturing was done behind the office on the second floor. Our machining was done downstairs by Pfeifer & Smith and the (carbon) disks for the resistors were cut in the basement. Some of our lathe and tooling jobs were farmed outside to other machine shops.” Hawley retired as manager of Production Control in 1968. He died in 1984.

“There were two engineers in the office when I came. One was Hank Lindsay. He was the big boss. He joined the Navy in World War I and didn’t come back (to the Milwaukee office). Hawley recalled Lindsay as a “tall fella” whose “folks owned a farm equipment business in Milwaukee. Lindsay entered the Navy as a lieutenant in 1917. He also was a cousin of the Bradleys. The other fellow was Chet Baird, our first sales manager.”

Wilms Redesigns Controller

When Lindsay left, Gus Wilms, a German-born engineer who two years earlier had come to A-B from Cutler-Hammer, was named chief engineer. It was a position he held until he retired on December 17, 1946. When it came to Wilms’ engineering prowess, Harry Bradley always enjoyed telling this story:

“An engineer of high order, Gus came to us in 1915. In almost no time he gained Lynde’s confidence, and mine, too. After a brief examination of a controller, he remarked ‘The guy who designed this should design one more and quit.’ ‘Think you can do better?’ I said, a little nettled because it was Lynde’s design. ‘If I can’t, I’d quit,’ he flatly said. ‘Go ahead, let’s see what you can do,’ I challenged. Well, Gus made good on his claim and Lynde promptly adopted him,” said Harry.

George Zalusky, inventory clerk, about 1912.

Laurence E. Power, first chief chemist.

Sales Manager Chet Baird, center, checks on an order.

Office clerical worker, about 1911.
Allen-Bradley Company – Organization Chart

September 1917
“Al Dawe was our chief tester and Bill Steenweg the chief draftsman,” noted Hawley. “I knew Walt Shakston very well. He eventually managed the Milwaukee Sales Office.”

Hawley also recalled “Fitch Clark was in charge of the Order and Patent Departments; Herb Banks was the company’s auditor and married an office gal, Frieda Schau, before he left to work for Kearney & Trecker in 1919; George Zalusky started out as an inventory clerk and then became a draftsman; and Milferd daugh was the first ‘truck’ driver and he used a wagon and horse before a truck.”

Of the shop workers, Hawley remembers that when he started at Allen-Bradley Charlie Gross was working in the Tube Department cutting the carbon disks. “It was a dirty job. Stuff flew all over the place. Charlie would wear a duster to try to keep clean,” said Hawley. He also recalled “Augie Bizewski was in the punch press area and later became that department’s foreman; Jack Freitag was the Assembly Department’s foreman; Leo Retza, an assembly area supervisor, would hit a gong to start the work day and signal the end of lunch; “Opie” Paulsen was the first drill press operator; and Joe Hoffa and Charlie Engel were former Pfeiffer & Smith workers who transferred to A-B when the company was sold. They were milling machine operators.”

Whitmore Joins Firm

There wasn’t a former employee who didn’t speak of Bob Whitmore, former plant superintendent, when reminiscing about the “old days.” Whitmore was instrumental in organizing the manufacturing aspect of the company during the 1920s.

An inspector and tester at the Milwaukee Electric Railway and Light Co. in 1917, Whitmore turned down a job as technical writer for A-B because he “didn’t think he would he any good at that.” However, he was interested in joining A-B and asked that he be given “any other job” and would be ready to start the next morning. He was hired to wind blowout coils, a rough job that was very hard on the worker’s hands.

Whitmore proved he could withstand the rigors of the job and within a short time was moved about the company where needed. “In 1919, when we named him plant superintendent, he had worked nearly every job in the shop,” Harry once said. Whitmore eventually became a vice president of the company and retired in 1965. He died in 1970.

Lynde Marries Caroline Doll

It isn’t known when the first woman was hired at Allen-Bradley or who she was, but a photo taken in 1911 shows a woman at a typewriter in the office. Lynde’s secretary during that period was Caroline Doll, whom he married on June 28, 1912. Harry had been married for nearly six years by then, as he tied the knot with his childhood sweetheart, Marion Adeline Becher, on Dec. 19, 1907 in Milwaukee.

By early 1918, the paperwork (due to the war orders) was towering. Several women office clerks were hired to help get the backlog reduced. Bertha Loock, Fred Loock’s sister, was one of these women. Hired in 1918 as a file clerk, “Bert” became the first woman to receive an Allen-Bradley 25 Year Service Award Pin.

On August 9, 1918, Julia Bizewski, sister of punch press foreman Augie Bizewski, became the first woman hired for the factory. She became the first forelady in 1922, and soon was named to supervise the “new” Bradleystat Department. Like many women who would come to work at A-B, Julia married a co-worker, Leo Polczynski, in 1929. The Polczynskis’ son, Leon, became manager of the Industrial Control Group’s Development Engineering Services.

War Bonds Backed

As World War I continued, A-B was very supportive of War Bond programs and projects for the “boys fighting overseas.” Workers were paid half their salaries during “Fuelless Mondays,” a voluntary program where plants closed Mondays to help conserve fuel for government use. On Armistice Day, November 11, 1918, the factory closed and several employees under
the direction of Harry’s first wife, Marion, helped organize a float for the parade downtown. His wife came from one of Milwaukee’s prominent families and she was very involved in the war bond fundraising campaign during the war.

The war era resulted in phenomenal growth for Allen-Bradley. The company had $86,000 in sales in 1915. That figure jumped to $404,683 in 1917 and $593,278 in 1918. Plans to enlarge the manufacturing space 75 percent with an addition were started in 1918 with the purchase of land on W. Greenfield Avenue adjacent to the existing plant on S. First Street, which was purchased from Pfeiffer & Smith.

At that time many of the company’s employee programs also were initiated. Some of the “firsts” included the organization of a social committee, safety committee, Sales Department and Photo Department.

The first issue of a company newsletter appeared in January 1917. Sixteen employees that year attended the first A-B “school,” where the principles of physics and electricity were taught by a (Milwaukee) School of Engineering professor for six weeks on Wednesday nights and Saturday afternoons.

Things were looking prosperous, but the war had ended. By late 1918, the nation’s peacetime economy was still a question.