

Surviving the Tests of Time

A PROFILE OF ASSOCIATED SPRING

By Gary McCoy

Associated Spring, a business of Barnes Group Inc., is an organization that drips with the history of the spring industry. It is one of only a few companies in the U.S. that have been in the business of making springs for more than 150 years.



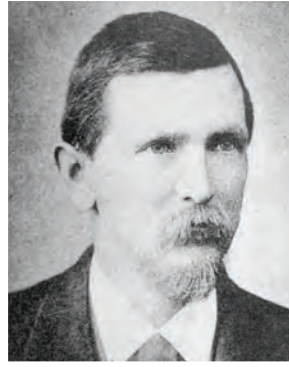
Tim Haller, who currently leads Associated Spring as president, appreciates the history of the company that stretches back to 1857 when the company was founded by Wallace Barnes. He says that he is proud to lead the company with such a rich and long history that has “survived the tests of time.”

Haller said this had a big impact on customers when the Great Recession occurred a few years back. He says the history of the company “went a long way in assuring our customers that we were going to be here for the long haul.”

The history of Associated Spring and Barnes Group is closely intertwined with the development of the spring industry and what is now the Spring Manufacturers Institute (SMI).

The company was founded as the Wallace Barnes Company in Bristol, Conn., and when Wallace left the company in 1893, his son Carlyle Barnes took over. The company was initially known for making hoop-skirt springs.

But as Tom Barnes, chairman of the board, Barnes Group Inc., explained, the clock industry was very big in the Bristol area at the time, along with gun and bicycle manufacturing. He said the company quickly moved into bending wire to make springs for these industries “because the women’s hoop skirt fashion trend didn’t last very long, and we knew we needed to move past that.”



Barnes said pictures from that era showed men sitting down, but women were standing, because sitting down with a hoop skirt was virtually impossible. “If the market (for hoop skirts) comes back,” said Barnes with a laugh, “we’re ready. We could possibly do it with plastics now too.”

In 1913, Carlyle’s son, Fuller, took over as general manager of the company, which continued to grow through acquisitions.

After establishing a presence in Canada in 1921, Barnes-Gibson-Raymond, Inc. was founded in Detroit in 1922. A year later, it was renamed Associated Spring Corporation.

During this time, Fuller Barnes was instrumental in starting the Spring Manufacturers Association (later changed to SMI) in 1933 and became the organization’s first president. You can read more about the history of SMI on page 29 and more about Fuller Barnes in the sidebar below.

Another significant milestone for the company occurred in 1946 when Associated Spring Corporation

Fuller Barnes



To his contemporaries, Fuller Forbes Barnes was a man of wide-ranging visions — and the drive necessary to attain them. After joining the company on his graduation from Yale in 1910, he quickly rose to treasurer, and in 1913, added the title general manager, continuing in those roles until the death of his father Carlyle in 1926, when he was elected president. Three years earlier, he had been the main force in putting Barnes together with two other family-owned companies to form Associated Spring.

Over the next three decades, he steered Associated Spring through major expansions, the Great Depression and World War II, handing over the reins in 1953 to his son Carlyle F. (“Hap”) Barnes.

Fuller Barnes, who had become a recognized leader in industry, was the primary founder and first president of the Spring Manufacturers Association. He also served as an officer or director of many other organizations, including the Bristol Bank and Trust, Bristol Brass, Connecticut Light and Power and Southern New England Telephone.

For a while, he tried his hand at politics and was twice elected state senator from his

district, in 1929 and 1931. Perhaps closest to his heart, however, was the Bristol Hospital, for which he served as president and principal fund raiser for 30 years, helping it to erect a modern, well-equipped building in 1925.

An avid fisherman and golfer in his later years, Fuller became absorbed in a new challenge, the making of needlepoint tapestries, creating large pieces on classical and Biblical themes and crafting the frames in his home woodworking shop.

He also helped to develop Bristol’s American Clock and Watch Museum, a unique collection of period timepieces started by his friend Edward Ingraham to celebrate the region’s clock-making history. One of its main galleries, displaying a series of priceless grandfather clocks, is housed in a wing donated by Fuller Barnes. Named after his ancestor Ebenezer Barnes, it incorporates the original paneling and ceiling from Ebenezer’s house, which was built in 1728 as Bristol’s first permanent home.

(Originally written in the book, “Barnes: An American Enterprise,” and is reprinted with permission.)



Above: The original building for Associated Spring in Bristol, Conn.
Opposite page: Wallace Barnes, around 1863.

stock was offered over the counter to the public for the first time. In 1976, the company changed its name from Associated Spring Corporation to Barnes Group Inc.

The entire history of Barnes Group was captured in the book, “Barnes: An American Enterprise,” which was published in 2007 to commemorate the company’s 150 year anniversary.

Associated Spring Today

Barnes Group Inc. is now divided into two segments, Industrial and Aerospace, with Associated Spring grouped within the Industrial side of the business. Barnes Group still calls Bristol home and Associated Spring, though its headquarters are in the Detroit area, still maintains a spring plant in Bristol.

Patrick Dempsey is the CEO of Barnes Group and the 11th person to serve in that role for the company. Tom Barnes’ father, Wally, who came out of law practice and politics to run the company, was the last family member to lead the day-to-day operations of the company. In 1991, he transitioned from CEO to chairman of the board.

As Associated Spring now describes itself, “Today, more than 90 percent of our business is precision-engineered, custom solutions. Utilizing our mechanical springs, wire forms, washers, reed and flapper valves, precision forming and assemblies, we design and produce products and services to meet your (customers’) specific requirements. Applications range from automotive, telecommunications and consumer home products to medical devices, aerospace/defense-related products and compressor components.”

Haller joined Barnes Group in October 2001 as division manager for Barnes Aerospace and was later named vice president of operations for Aerospace OEM (original equipment manufacturer). He switched to the industrial side of the company in October 2007 when he was named

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vice president and general manager for Associated Spring. He has been president of Associated Spring since June 2008.

Prior to joining Barnes Group, Haller spent 15 years at a global jet engine manufacturer.

Haller says going from OEM (original equipment manufacturer) to supplier gave him a different perspective. “I decided to make the switch from customer to supplier with the view that, by belonging to a smaller company, I might be able to do more in terms of my total contribution affecting the company.”

Being on the supplier side has taught Haller much. Haller said he’s learned to compete for a customer’s business, maintain the business and grow it and that relationships and pricing become a factor when everything else is equal.

“As you move from the customer side to the supplier side, at least in my personal experience,” related Haller, “I gained a stronger appreciation for what it took to maintain that relationship where I didn’t have that same appreciation from the customer’s point of view.”

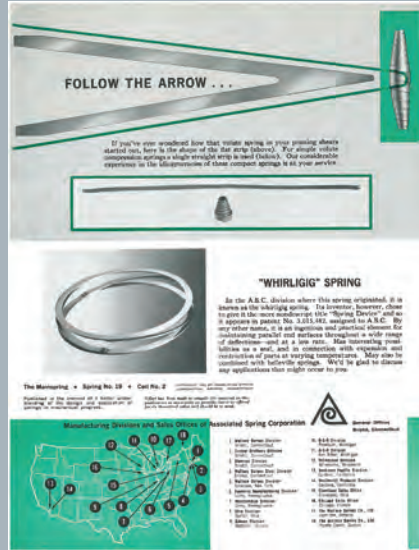
Reorganized Timing

When Haller was tapped to take over Associated Spring in June of 2008, he was tasked with reorganizing the operations into focused factories or what Barnes Group calls “Centers of Excellence.”

Haller said it was very clear on the aerospace side of the business which of the company’s six facilities made specific parts, but after joining Associated Spring, he quickly realized it was not so clear on the industrial side. “Many of our locations were able to produce identical types of springs. The tasking was to consolidate similar operations for differentiation from plant to plant, especially in the U.S. where Associated Spring has five divisions.”

He related that, in Associated Spring’s international operations, it is more of a “job shop” concept where they try to service the needs of many. They have three international locations in Mexico City, Brazil and Singapore.

“So what you find in our U.S. operations is that in each of five divisions, although they all know how to make springs, we try to specialize in unique product lines or market segments in each division.”



The *Mainspring* was a popular publication that Associated Spring published over many decades.

Haller says that allows Associated Spring to become more of an expert in the engineering, design and support of the customer.

The challenge for Haller was that his entrance as president of Associated Spring occurred at the same time as the Great Recession when he and his team were in the middle of developing and beginning to implement a reorganization plan.

Haller cited this as one of the greatest challenges for him and his team since he took over the helm at Associated Spring.

“To reorganize and do it in the middle of a recession was the most challenging aspect of what our team has been through in the past five years,” he said. “We came out of it very strong and ready for the next level of growth which we believe to be in automatic transmissions.”

Balanced Approach

Associated Spring is one of the largest spring manufacturers that service both automotive and industrial customers. Haller said having its business divided between the two sectors is like having a balanced stock portfolio.

He said when Associated Spring’s automotive business was slow, the industrial side was excelling. “Now that the industrial end markets are sluggish, our automotive segment is excelling,” he explained. “The balance between the two is comforting, in terms of our diversification.”

Haller says a lot of products produced by Associated Spring revolve around products that service transmissions. He said they provide transmission products to the automotive, heavy and medium duty truck, construction and agricultural markets - which represents about two thirds of the company’s volume.

“The majority of our products are for automatic and manual transmissions,” said Haller. “We do Bellville washers, wave washers, retaining and snap rings, valve body springs, accordion springs, and torque converter clutch springs.”

He said Associated Spring also does compression seat and spring assemblies (sometimes known as spring packs) for medium to heavy duty trucks.

Associated Spring has had a long history in the automotive business and racing. For many years the company produced a widely read newsletter called “The Mainspring.” In the spring 1965 issue, the publication reviewed the completion of the 1965 Indianapolis 500 race.

“Now that this year’s famous Indianapolis auto race is history, the post mortems will turn up the brickbats and bouquets for those organizations that helped to make possible the results. The valve springs in the engines are one of those unobtrusive but vital parts that are being praised.

“Associated Spring Corporation is sharing in this praise because, to the best of our knowledge, all of the valve springs used by all 33 cars that started in the race were made by our B-G-R Division at its Ann Arbor, Mich., plant. More significant, though, is the fact that there were no valve spring failures in any of the engines.”

The company continues to produce racing valve springs, a technology that Associated Spring says has evolved tremendously over the last 10 years.

“Associated has a strong partnership with leading suppliers of racing engine components,” said Haller, “Comp Cams and Manley Performance, among others.” This has led to a better understanding of various segments of the market and key customer requirements: lighter springs and higher engine RPMs, without compromising

fatigue life. The lighter spring requirement means a higher static stress spring which lead to improvements in materials and processes.”

Associated Spring says the key elements in the improvement of processes were a patented heat treating process to reduce material grain structure and a proprietary surface finish.

“This proprietary surface finish is key, as higher stressed race springs, unlike OEM springs, tend to be adversely affected at the surface,” explained Haller. “A basic law of physics is that a crack, no matter how tiny, has to be present to start the ‘failure’ process. Associated Spring processes help eliminate the possibility of any cracks.”

The company says it is already working on the next set of improvements in materials, designs and processes, with the goal of bringing these improvements to market in the next few years.

Engineer by Day, Dancer by Night

When asked about any funny or weird experiences during his career, Haller immediately mentioned the time when he dressed up as a sumo wrestler to raise money for the United Way.

“It was hot, sweaty and I got knocked on my back several times,” explained Haller. “But it was well worth it to raise a couple of thousand dollars for the local United Way chapter.”

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For most people in middle age, it is not customary to already have two replacement hips, but when you know Haller’s background it is not so unusual. As Haller confesses, his hips got worn out competing in ballroom dancing.

Haller and his wife, Barbara, are four-time United States Professional Theatrical Arts Ballroom Champions. By winning this competition for the fourth time in 1999, the Hallers made ballroom competition history by becoming only the second theatrical arts dance team to win the title four times since the inception of the United States Ballroom Championships in 1971.

If you do a quick Google search for “Tim and Barbara Haller,” you’ll find videos of the pair in various competitions and shows. Though now retired from competition, the couple still remain connected to ballroom dancing. They own Arthur Murray Dance Studios in Cincinnati and Dayton, Ohio.

Tom Barnes: Continuing a Family Legacy

Tom Barnes is the chairman of the board of Barnes Group Inc. and carries on the legacy of the Barnes family in the spring industry. Though a family member no longer runs the day-to-day operations of Barnes Group, Tom Barnes represents the fifth generation of the family to be involved in the business.

Barnes says his family is quite proud of its heritage in the spring industry and its part in the founding of SMI.

“We played a role in bringing the organization together in those early years when we were still a private company. It was a great relationship that friendly competitors had to start the organization,” said Barnes.

“Great uncle Fuller and those who helped him, all gathered and realized there would be a lot of benefit from having an association that could share problems and work together to train new springmakers,” explained Barnes. “That challenge continues today—to maintain the workforce and the skills of the people



schools to get people to go into the spring industry and become springmakers.”

Even though it is now a public company, Barnes said the Barnes family is proud that it continues to have family ownership of around 17 percent.

“The family feels good that we played a part in helping spawn this industry,” explained Barnes of its legacy. “So many of our colleagues out there have made a good living and I think we can be proud of this industry and what it contributed to the Industrial Revolution in the United States.”

you need to bend metal and make springs.

“I think SMI has done a great job in providing the vision and the impetus to work across the country with tech

The number of family members in Barnes’ generation is around 22, with his children’s generation closer to 80.

The Barnes Group Foundation started in 1945 and is supported by Barnes Group Inc. and is committed to the support of education, the arts, civic and youth activities and health-related charities in the communities in which the company operates.

“We have prided ourselves all through our history regarding the importance of taking care of our employees and encouraging our employees to give back to the communities where they are located,” Barnes said.

Barnes explained that the company has a number of programs in place, including a matching gifts program, to encourage employees to contribute to charities in their communities.

“Giving back to our communities is a very important part of our culture.”

Associated Spring president Tim Haller (center) with Joaquin Davis, NPD engineer and Kim Richards, materials and process engineer.



Tim says Barbara once asked him, now that he's on the other side of two titanium hips: "Do you wish we had not been competitive dancers?" With little hesitation, Haller told her, "Not at all. I wouldn't trade it for anything. It was a great run. We competed for 11 years and won the national title four times."

With a laugh he says, "I was engineer by day and dancer by night. So it was an unusual combination."

Future Plans

While continuing to see growth for Associated Spring in the automatic transmission market, where they are making significant investments into the 8- to 10-speed technologies, Haller also sees growth in the industrial side of the business in alternative energy technology.

"We currently make nuclear fuel rod springs and flexors for solar engines," he said.

He's especially proud of their work in outer space. Associated Springs' power springs were used by NASA to help lower the Mars rover, Curiosity, late last year.

Because of the company's aerospace certification, they also do work for Lockheed Martin and other defense contractors.

In addition to the continued focus on product diversification, Haller says that their future will focus on new technology with emphasis on "design, manufacturing, and applications engineering" to provide customer solutions for "engineered products and systems, using state of the art processes and technologies."

As Haller looks forward to the future of Associated Spring and all the new technology that will come forth, I asked what lessons he had learned during his career.

Haller said during his 25-plus years in manufacturing he's learned that "change is unpredictable" and "when change happens, you've got to be ready for it, whether it's good or bad."



HALLER IS ESPECIALLY PROUD OF THEIR WORK IN OUTER SPACE. ASSOCIATED SPRINGS' POWER SPRINGS WERE USED BY NASA TO HELP LOWER THE MARS ROVER, CURIOSITY, LATE LAST YEAR.

One memory sticks out for Haller regarding change. "It was not that long ago in aerospace, we were planning for record volume sales of jet engines. And then, unfortunately, 9/11 came along, the twin towers were hit and the company I worked for at the time lost 40 percent of our volume overnight."

He looks hopefully to the future and is optimistic that further change will be more positive than negative.

To be successful in the spring industry or in aerospace, Haller believes it revolves around being intimate with your customers and "predicting what the customer needs before he or she knows they need it."

It fits well with a statement on the company's website: "At Associated Spring, we're committed to finding new and better solutions to the problems our customers face; to responding quickly to customer demands with products that meet their needs and exceed their expectations; and to providing the worldwide capabilities of a global leader, assuring reliable delivery of quality components when and where our customers need them."

With a strong history of customer loyalty and 157 years behind them, it does not appear that Associated Spring will be going anywhere soon. ■