70 YEARS

SEPTUAGENARIAN SUCCESS

Jonathan Rowland explores the story behind Martin Engineering's 70 years of service to the bulk materials handling industry.

Martin Engineering has come a long way in its 70 years of business. From its origins in rural Illinois, the company now offers its bulk material handling solutions around the world. But despite this long history, the company remains clear about where it came from – and that story still drives its vision today. So where did it all begin? According to Edwin H. Peterson, current chairman and son of the founder, Edwin F. Peterson, it began with a good idea.

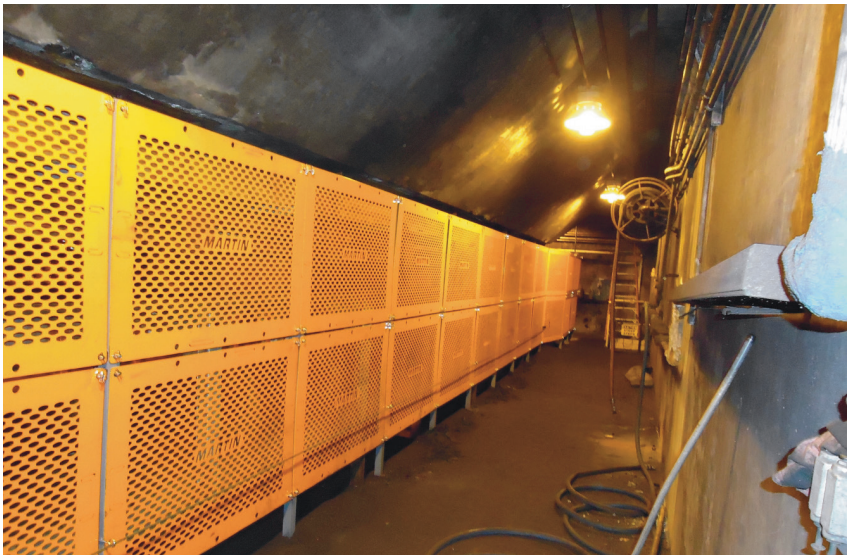
It all starts with a good idea

The company founder was a pattern maker at a local foundry where he watched co-workers struggle to overcome sand blockages on the foundry's mould-making machines by pounding on hoppers with hammers. "My father was troubled by the risks, equipment damage and loss of productivity that resulted," explained Edwin H. Peterson. It was those concerns that prompted the design of a solution: the Vibrolator® industrial vibrator, which uses compressed air to propel a single steel ball around in a hardened steel raceway, causing vibration that releases the blockages. Patented in 1949, the Vibrolator remains one of the world's most accepted vibrators to facilitate the movement of solids.

Vibrators remained the company's speciality into the 1960s – but that decade also saw the company venture into new areas. Scott Hutter, Martin's president and CEO, takes up the story: "After the development of a number of successful industrial vibrator designs during its first two decades, one milestone was the company's decision in the 1960s to begin developing high-performance products for conveyor applications." The company has not looked back: its conveyor business has now grown into a rich product line of belt cleaners, dust containment products, transfer solutions and safety components, including many innovations to improve bulk material handling.

"Another milestone was the decision to grow the company into a truly global enterprise with a goal of establishing business units that could deliver manufacturing, sales and service to virtually any location in the world," continued Hutter. "This has led to an expanding network of facilities,

Martin Engineering began life as the manufacturer of the Vibrolator® industrial vibrator and industrial vibrators remain a part of the company's product line-up today.



Safety is one of Martin's cornerstone values. Today its line of safety equipment includes conveyor guards (pictured), roller guards and inspection doors.

currently numbering 27 offices in 16 different countries."

A final defining moment for the company was its decision to invest heavily in conveyor education and training. This commitment, which resulted from a "sense of responsibility for raising levels of performance and safety across all bulk handling industries," according to Hutter, has turned into one of the cornerstones of the company's mission.

Throughout the company's development, it has remained in the Peterson family and family ownership is an important part of Martin's culture today. The advantages of this are clear to the current chairman: "It allows us to maintain a streamlined company structure, which involves and empowers employees at every level," Peterson explained. "This has led us to develop a very responsive organisation, one that can bring new designs and decisions to market quickly. It also allows us to embrace changes, rather than resist them as many large companies tend to do."

Family ownership has also helped to foster a "sense of inclusion", said Hutter, in which every employee is encouraged to contribute to and enjoy the benefits of the company's success: "There's a tangible spirit here of being a global family, which we celebrate each quarter with events as part of our We are Martin initiative. These attitudes also bring us closer to our customers, as we aim to develop good communication and reciprocal loyalty over time. Employees and customers come to regard one another as teammates, driven to achieve shared goals."

"We recognise we're undergoing continuous evolution as a company," noted Peterson – evolution that will soon include a fourth generation of family ownership. "There's a great deal of satisfaction in that," the current chairman concluded.

Coal: a key market

"Coal mining and coal-fired power have traditionally been among our primary target markets," said Hutter. And despite the changes in these industries in North America, this remains the case. Martin continues to develop new products and designs for its coal industry customers – both in its home markets and globally in markets as diverse as China, India, South Africa, Latin America, Turkey and Russia.

In fact, it is these developing markets that offer most opportunity. As Hutter explained, in contrast to the North American markets, where most coal operations already incorporate a number of engineered products into their bulk material handling systems, in developing regions there is far lower integration of such components. "This provides significant opportunity for us to help improve the performance and safety of those systems," he said.

Although its global reach is now impressive, the company did not find itself a global player overnight: "The evolution was a gradual process, involving a great deal of international travel and close involvement with local customers, distributors, technical experts and others to make sure we became intimately familiar with the markets and challenges," recalled Peterson.

"Several elements have helped us establish ourselves as a globally respected brand," explained Hutter. Part of this is the expertise Martin brings to a region: not only does the company have a tradition of hiring and training employees from each region, but it has also introduced extensive programmes of training for its customers that help improve their levels of safety and productivity. The most critical factor, however, is the company's equipment: it is "the company's proven reputation for supplying heavy-duty products that withstand the rigours of the coal handling environment – and the fact that they carry an absolutely-no-excuses guarantee," said Hutter.

Safety, excellence and innovation

The company founder committed the company to safety, excellence and innovation and that carries on in the business today, explained Peterson and Hutter.

Safety

"Safety has always been one of the driving forces behind our business," said the current chairman. "It was one of the motivations for the company's very first commercial products and remains a key element of every design." This is most obvious in the products that are specifically designed to meet a safety need – e.g. conveyor guards, safety shields, roller guards and inspection doors – but it overflows into everything the company does: "Whenever a new product design is being considered, safety and ease of service are among the foremost considerations," explained Peterson.

Excellence

Martin's commitment to excellence manifests in a range of different areas. "Obviously performance is paramount," said Hutter. "We strive to improve components and system performance with every design we develop." This includes a programme that introduced a new standard for belt conveyor design and construction: "We are literally reinventing conveyor technology from the ground up, revisiting every facet of component and system design with fugitive material control, safety and ease of service a primary criteria."

Another facet of excellence, already mentioned above, is product quality: "From the company's earliest days, we have insisted on building rugged, heavy-duty components and systems that exceed customer expectations for reliability and service life," said Peterson. This is evident in the company's line of industrial vibrators, which are built to endure constant use, even at maximum force settings.

Innovation

"Martin Engineering was initially founded on a single patented design, and has grown to international status through a continuous focus on innovation," explained Peterson: "As the company matured from that one simple premise, patented technologies have become the backbone of its intellectual property."

The results of this are clear: the firm has applied for more than 700 patents over its 70 year history – with more than 350 currently active, covering such diverse products as vibrators, belt cleaners, air cannons, pneumatic valves, conveyor components, dust suppression devices, acoustic cleaners and measurement tools.

Martin Engineering's Centre for Bulk Handling Innovation allows components to be tested on production-scale equipment without the need to visit customer sites.

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Innovation is also present in the company's commitment to R&D and its Centre for Bulk Handling Innovation (CFI). The vision behind establishing the CFI was essentially collaborative, explained Hutter: working with customers and others in a technical setting where components can be tested on production-scale equipment without the need to visit customer sites. An example of this is the development of larger, heavier products at the CFI in response to the coal industry's demand for faster, wider conveyors, or the CFI's recent research on fly ash and SCR cleaning aimed at assisting coal-fired power plants in their ongoing efforts to reduce NOx emissions.

"Part of what makes the CFI unique is the variety of projects that are conducted there," noted Robert Nogaj, vice president of operations at Martin. It has also changed from a wholly US-based facility to one that benefits from the expertise of engineers around the world. Technology has helped to drive this trend, helping to combine the knowledge of engineers in different disciplines and from a variety of backgrounds. "Now there are virtually no limits to the scope or geography of a team. We have access to a global thinktank of experts that combines practical experience with creative problem solving," said Nogaj.

With this ability to share information easily across geographies, the future of the CFI lies well beyond its current four walls as a hub for collecting and disseminating information, creating new designs and developing new ideas. But the physical facility will remain important with even larger conveyor designs that better represent the systems many of Martin's customers use: "with the ability to test and service new designs and existing products on full-scale equipment at our site, we expect to continue driving innovation, even while demonstrating shorter response times when addressing specific customer issues and delivering faster time to market," concluded Nogaj.

A market problem solver

With this company ethos of excellence and innovation, there are a long list of customer success stories to pick from – "there are so many that it's hard to select just a few!" said Peterson, before describing a recent project at the Port of Seward in Alaska.[1] Here, Martin has recently completed a conveyor system upgrade for the port's coal handling operations that has raised throughput by an estimated 20%, allowing Alaska's largest coal producer to better compete for international customers. This was achieved with the installation of a new EVO conveyor load zone, which has allowed the terminal to increase the average load rate for the entire ship loading process from 700 tph to more than 850 tph, as well as improving control of dust and fugitive particle emissions.

"Another example would be the carryback testing programme we recently completed for a Powder River Basin coal mine," added Hutter.[2] "The mine wanted to improve the effectiveness and cost-efficiency of its existing conveyor belt cleaning system, so we agreed to conduct extensive testing of the primary and secondary cleaners currently in place to establish a performance baseline for the existing components, then to replace those units with our own designs and compare the purchase/replacement costs and performance using the same criteria and test procedures."

A Martin technician installs a new belt cleaning system as part of a carryback testing programme that was undertaken for a Powder River Basin coal mine. The Martin system used just two cleaners per belt, instead of four.

The future lies in providing solutions, not just equipment, particularly in the growing area of outsourced maintenance contracts, such as silo cleaning.

The test regimen was designed to provide a quantitative means of measuring carryback and tracking improvements from adding or adjusting components, upgrading existing equipment and/or implementing a routine maintenance programme. Protocols were intended to ensure consistent handling of the material, from collection, labelling and drying to weighing and reporting. The test results demonstrated that the performance of the belt cleaning systems at this plant could be significantly improved, even while employing half as many cleaning blades. "The subsequent savings would amount to a sizable sum over time, allowing the facility to reduce long-term operating costs, lost material and wasted manpower, while raising the level of its environmental stewardship," concluded Hutter.

Passing on the baton

Education and training are a final part of Martin's approach to business. Key components of this are the CFI, which serves as an "outstanding training facility," according to Nogaj, and the company's *Foundations* series of reference books. The first of these was published in 1991 as a practical resource for helping bulk material handlers operate more safely and efficiently. Now in its fourth edition, the book has become a "vital component of the international training programmes developed by Martin," explained Hutter.

These programmes are in increasing demand, Hutter continued, as the trend towards downsized operations in coal and power-related industries continues. Many of Martin's customers are now outsourcing their continuing education programmes to the company's experts.

"Martin will also continue with its practice of encouraging students in the study of engineering," said Nogaj, collaborating with universities and offering internships that help to stengthen the company's global team.

The future

So what does the future hold for this septuagenarian company? A solutions provider, not just an equipment manufacturer, according to Hutter, particularly in the growing area of outsourced maintenance contracts from coal handlers looking to offset shrinking staffs and budgets: "Even as customer operations reduce staff sizes, their bulk handling needs continue to expand. We are committed to providing a dependable expert resource for companies that are finding the value in outsourcing bulk material handling products and services, allowing them to concentrate their manpower on core business activities."

Growth will also be global, as Martin positions itself to take advantage of the knowledge and expertise it has gained from applications around the world. Global – but also based on the same family values that has driven the company so far: "We will continue to rely on the inclusive, team-oriented approach that has made us successful for 70 years – but with a fourth generation of family members leading the way," concluded Peterson. *WC*

References

1. See: BUCHSBAUM, L. and MARTI, A., "Clearing the clouds", *World Coal*, (May 2010), pp. 24 – 30.
2. See: SHIELDS, R., and MARSHALL, D., "Investigating carryback" *World Coal*, (January 2014), pp. 21 – 26.