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exclusive feature

AIM AEROSPACE SPECIALIZES IN MANUFACTURED COMPOSITE PRODUCTS FOR THE COMMERICAL AEROSPACE INDUSTRY.

Competitive Edge

AIM AEROSPACE IS REVAMPING ITS PLANTS AND INCORPORATING AUTOMATION. BY JANICE HOPPE-SPIERS

AIM Aerospace President and CEO Daniele Cagnatel plans to modernize the company's facilities and introduce carbon fiber technology intelligent automation this year to strengthen its position as a leading aerospace manufacturer. "Big changes are coming because the market around us is changing," he says. "We will retain our core competencies but revamp. It's going to be significant. The business that doesn't change is the business that will go into extinction."

The Renton, Wash.-based company has been building airline components for more than 30 years. AIM Aerospace specialized in manufactured composite products including composite ducting, substructural and interior parts for the commercial aerospace industry.

In March 2017, AIM Aerospace acquired Quatro Composites to further expand the market share on the highest value platforms while adding new customer relationships and gaining access to the market leading composite structures and thermoplastic technologies. Quatro began as a partnership to research, design, develop and manufacture performance-inspired composite products. The founders set out to develop unique process technologies to produce high-quality parts at a reduced cost to serve the sporting goods and radiology and oncology imaging sector.

Over time, Quatro discovered its processes were able to produce parts that would meet the demanding specifications of the aerospace and medical markets. In 2004, the company began manufacturing medical-quality autoclave carbon composite products in Orange City, Iowa.

Today, the Iowa location supplies highly engineered advanced composite structures, components and assemblies to the aerospace and defense industry. It supplies parts for Boeing's 787 Dreamliner, Insitu UAV's and Gulfstream business class jets.

Two Becomes One

Since the acquisition, AIM Aerospace and Quatro have been on a journey to become one. "We had two companies and two management teams with no cross-pollination," Cagnatel says. "We have created one company – and a much stronger company – to move the industrial needle forward for our employees and customers. We rebranded the company to AIM Aerospace and spent a lot of time talking about what makes AIM Aerospace

AIM Aerospace / www.aim-aerospace.com / Headquarters: Renton, Wash. **/ Employees:** 1,050 **/ Specialty:** Primary/secondary aerospace structures, unmanned aerial vehicles, interiors, systems and engines **/**

what it is. What are the values that really join us as one company? What are the traits of how we lead?"

AIM Aerospace prides itself on ethically leading its people and the industry through integrity, business intelligence and engagement. "If you can get 1,200 people engaged to build the future of the company, that's a fundamental advantage," Cagnatel notes. "We are breaking down management to create a company where everyone feels part of AIM Aerospace. We are creating that buzz and momentum all the way down to the shop floor."

It has been a journey to create a new culture, but Cagnatel says he has done so by leading from the front and showing them the way. "We are creating a strategy of how we are changing the company," he adds. "From the investors down to the shop floor employee, we are building a new AIM Aerospace which includes everyone in the company."

Developing a Strategy

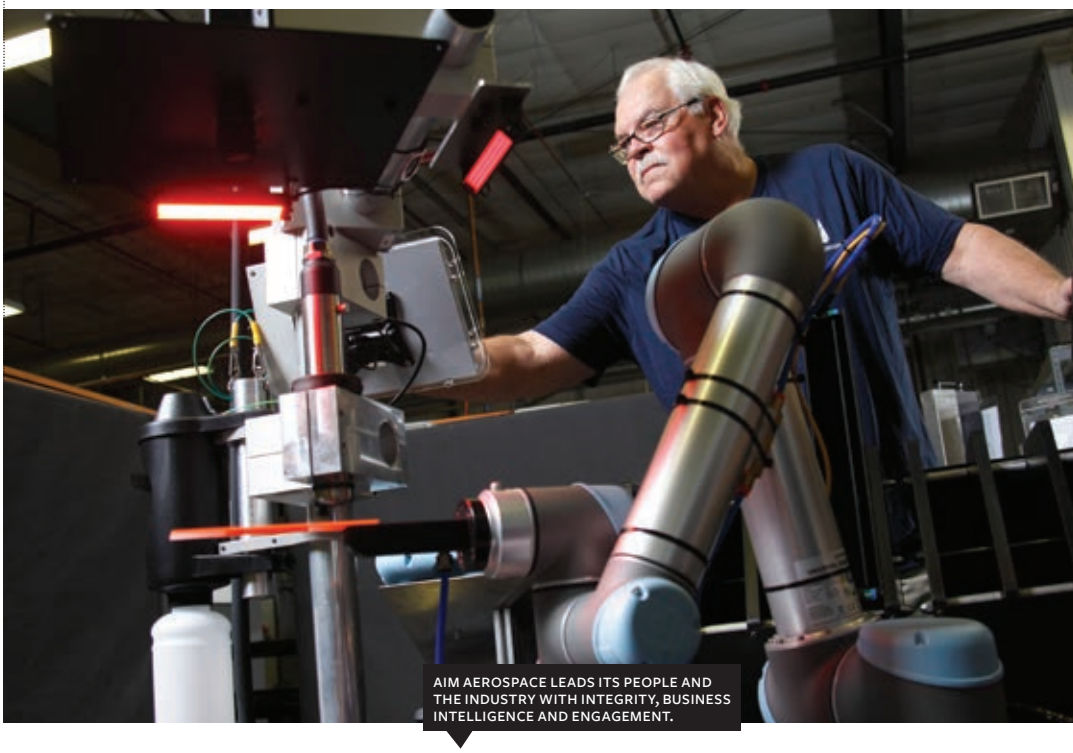
AIM Aerospace decided to leverage what Quatro brings to the company and increase it. "Carbon fiber manufacturing is a commodity and over time it will be under attack by competitors, and common known hand laid up parts will be replaced by automation and intelligent engineering," Cagnatel says. "AIM Aerospace in Orange City, Iowa, is a gem of the Midwest. It's a clean, crisp Midwest town with a high-tech facility that is manufacturing aerospace and defense parts for Tier 1 suppliers. We also have a Research and Technology Center that is based in Poway, CA."

AIM Aerospace will leverage the Research and Technology Center in California to feed new technologies and intelligent automation throughout their other facilities. "We already partner with our customers on joint development and innovation projects. We want to expand our work with our customers on an individual basis to develop innovative and cost-effective solutions that are based on cutting edge technologies and industry leading engineering expertise," explained Cagnatel. "Our R&T Center is the diamond tip of our company and will lead our way to exciting new manufacturing technologies and intelligent automation in our 4 Centers of Excellence."

AIM Aerospace's state-of-the-art automated facility in Orange City, IA, is doing it all right, but located in a town of a little more than 6,100 people makes it challenging to grow because there is a limited skilled workforce to tap into. "In the state of Washington, however, we have more than 500,000 square feet of manufacturing space and thousands of aerospace professionals. Our strategy became straightforward; revamp our facilities in Washington and create the path to further grow our technology and automation plays. We are going to invest in these facilities and expand into carbon fiber advanced manufacturing technologies."

AIM Aerospace will seek new business in the composite jet engine, primary structure and space component markets. "A few years ago, only six percent of a jet engine involved composites – that's since surged to an unprecedented 43 percent," Cagnatel says. "We just started and spent the last few months laying out this plan. We spoke with our customers and executed a large-scale market analysis and performed our own due diligence."

Because AIM Aerospace has duplicate assets in Washington, the company plans to consolidate its Auburn site into Sumner, and revamp Renton and Sumner into a world-class aerospace manufacturing company. The physical transformation of the site will be completed by the end of this year. "Now, on one side we will be »



AIM AEROSPACE LEADS ITS PEOPLE AND THE INDUSTRY WITH INTEGRITY, BUSINESS INTELLIGENCE AND ENGAGEMENT.

» expanding our automation in the Washington facilities and have more air to breathe. On the other side we are taking what we do today, making it more cost-effective, automating it and adding skills for our employees in intelligent composite manufacturing technologies."

Automation Technology

AIM Aerospace will implement collaborative robots in its revamped manufacturing facilities. "We are applying the use of collaborative robots which are much smaller and more flexible than the large robotic machines that are enclosed in a cage and you can't approach because they are too dangerous and heavy duty," Cagnatel says. "The collaborative robots work alongside humans. It's much more flexible and cost-competitive."

Collaborative robots will not replace jobs at AIM Aerospace, Cagnatel says. In fact, the company expects business to grow 10 percent year over year for the next four years and the workforce to increase by 30 percent across all sites. "Collaborative robots will allow our workers a safer environment," he adds. "Repetitive tasks that cause humans wear and tear can be done by the robots themselves. Robotics will launch us into a new era of manufacturing which will allow our employees a safer, more robust working environment. This allows them to put their thought processes into play and not their hands."

Automation will be key to AIM Aerospace's growth. "We could take our factories and move them into a low-cost country; that's simple," Cagnatel says. "But we feel we can grow our business by thinking differently, through proper leadership and by providing a higher-quality product to our customers. We will reduce health and safety risks to our employees, grow our business and reduce our costs. It might be a more difficult journey, but as industry leaders we are responsible for moving the industry needle forward."

AIM AEROSPACE WILL IMPLEMENT COLLABORATIVE ROBOTS IN ITS REVAMPED MANUFACTURING FACILITIES.

The majority of AIM Aerospace's work is build-to-print where it takes an existing design from their customers, for example, and industrializes it. The company is also in a unique position to take on development projects, in their Research and Technology Center, where it designs proprietary parts and processes in thermoplastic carbon fiber.

"That's how we are going to grow, through thermoplastic manufacturing," Cagnatel says. "We will use chopped as well as continuous fiber material, that will allow us to make components that are currently made of metals such as titanium, aluminum or have complex geometries. We will make them more cost-effective, lighter and stronger with thermoplastic technologies, drastically improving the buy-to-fly ratios."

Instead of being made by hand, most carbon fiber components will be produced by fully automated robotics systems. "This system is environmentally friendly because most carbon fiber components need a large autoclave that takes an enormous amount of energy, where thermoplastics do not," Cagnatel adds. "It's less cost, the same strength, increased toughness, and environmentally friendly. The thermoplastics strategy and automation will allow us to grow in the engine components and structures market."

AIM Aerospace operates under tight quality control to supply components for the aerospace industry. "The level of quality control and cost is very high," Cagnatel admits. "Every one of our products is fully traceable down to the individual that is producing it on the manufacturing floor. Composites, the type we make, are hand laid up, so as soon as you introduce the human factor you are prone to make mistakes, which eventually causes you to scrap components and increase cost."

With automation, AIM Aerospace says process control is built into the machines and the robots can tell when the process is drifting. Collaborative robots will stop the process to ensure the part is built to the

required standards instead of the part being made and then scrapped because of quality issues. "We have limited automation in the state of Washington and are just starting our journey," Cagnatel says. "In our gem of the Midwest we already have automation in place and we have applied Industry 4.0 technologies."

Smart Factory

Industry 4.0 is the new revolution of manufacturing systems that involves digitalization of the process. "It leverages the internet of things and big data analytics and allows us to have much tighter control," Cagnatel explains. "Ten years ago, for example, we just went for a jog. Today, we monitor our fitness with apps to see how many calories we burned and we can upload and share that data with the world. Industry 4.0 does that for the manufacturing process."

In AIM Aerospace's Iowa facility, the robots not only make the parts, but decide when to make which part based on customers' orders. "Everything is automated and the robots are linked to the ordering system so if the order changes we can input changes in the system and the robot will prioritize itself immediately," Cagnatel explains. "While the robots are at work, we can monitor and update them from anywhere in the world."

The aerospace industry is going through a transformation, Cagnatel says, and AIM Aerospace continues to evolve to keep pace. "We will become a stronger technology-driven composite manufacturer and retain a strong position in our legacy components while becoming a major player in engine components and primary/secondary structure market," he adds. "We are going to increase our position in aircraft carbon fiber composites, which is a fundamental transformation in the market."

Seamless Transition

AIM Aerospace is in the middle of a journey to transform itself and maintain its position as a leading manufacturer to the aerospace industry. "First of all, open communication with our customers has been vital," Cagnatel says. "Secondly, we have taken a risk management approach in protecting our customer in this transition. We will revitalize our current facilities, consolidate and invest in these sites to make them fundamentally better.

AIM AEROSPACE OPERATES UNDER TIGHT QUALITY CONTROL TO SUPPLY COMPONENTS FOR THE AEROSPACE INDUSTRY.

PRESIDENT AND CEO DANIELE CAGNATEL SAYS AIM AEROSPACE SHOULD BE MOVING THE INDUSTRY NEEDLE FORWARD.

We are not moving people away from what we do today and will continue with the same workforce as we move into the future."

The transformation will allow AIM Aerospace's customers to reduce cost and increase value. In this new era, Cagnatel says he is most proud of the people at AIM Aerospace. "I think we have the right team at the leadership level down to the manufacturing floor," he notes.

AIM Aerospace will continue to evolve as the aerospace market drives new technology and begins the revolution of composite materials into the aircraft and jet engine market. "We want to change because we want to follow the growth," Cagnatel says. "We are aligned with the change and will be in a position to add a lot of value, advance our workforce and move the industrial needle forward. That means we aren't just growing the company, rather we are creating a better company that is more technologically advanced, working with customers we trust and respect and adding value for them. Our employees will thrive and be part of a bigger story because we are advancing our company by doing things differently and more competitively, adding more value to our customers, our employees and our shareholders." **mt**

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