

Fraunhofer CMI Center for Manufacturing Innovation

FOCUSES ON NEW U.S. GEAR AND TRANSMISSION TECHNOLOGIES GROUP

MATTHEW JASTER, SENIOR EDITOR

Collaboration between the United States and Germany's gear industries has provided a wealth of knowledge, technology and gear research. For years there have been U.S. members in the WZL's Gear Research Circle or partnerships between Fraunhofer IPT with Fraunhofer Center for Manufacturing Innovation (CMI) in Boston. But geographic obstacles prevented WZL from providing the same quality of service to the U.S. market compared to its many partners in Europe.

"This led us to the decision to create a new gear and transmission technologies group in the U.S. at Fraunhofer CMI," said Marco Kampka, program manager at the Gear and Transmission Technology Group, Fraunhofer CMI. "This brings us closer to our U.S. customers, and also enables us to learn more about the challenges and needs of the U.S. gear industry. We strongly believe that this can be a mutually beneficial undertaking."

This group brings together Fraunhofer CMI with German partners from Aachen, Fraunhofer IPT and WZL. Kampka sees all the organizations as one unit in this venture with Fraunhofer CMI being the key interface and gateway to the U.S. gear industry.

"This enables us to operate in the U.S. market without dealing with the spatial distance, the time difference or currency fluctuations. We will be offering all of our well-known services relating to gear design, analysis, simulation, consulting and education directly in the U.S. and execute all the projects with the support of our experienced partners WZL and IPT in Germany," Kampka said.

This new venture began with the first training course "Fundamentals of Gear and Transmission Technology" in December 2017—a course that will also be offered in 2018. This compact training course gives an overview that examines gear manufacturing, gear design and running behavior. Kampka says that the group is currently developing an extended version of this course going further into detail and being more beneficial for experienced engineers.

"If a company is looking for a custom training solution, we are open to discuss options as well. Additionally, we already started cooperating with U.S. companies on different topics in gear technology to improve their gear designs and manufacturing processes. We have a lot more in the making and it will be an exciting year in 2018," Kampka said.

During the first months of this venture, the Gear and Transmission Technology Group entered into dialog with as many companies as possible to assess the needs of the U.S. gear industry on the one hand and to get feedback regarding the group's U.S. expansion on the other hand.

"The feedback we received so far was without exception extremely positive," Kampka said. "I would like to invite all U.S. gear manufacturers to contact us when facing new challenges,



and we will do our very best to assist them and provide the quality of service that we've been providing our European customers for many years."

Kampka's journey to the United States began with one of the most common career paths at WZL in Germany. "As an undergraduate studying mechanical engineering at RWTH University Aachen, I came in contact with WZL in 2008 and started working as a student worker at the WZL gear department. From that point on gears became my passion. After receiving my engineering diploma in 2012, I became a research assistant at WZL focusing on hard machining and surface integrity of gears. In July of 2017, I defended my Ph.D. dissertation 'Locally Resolved Cutting Forces in Gear Honing' and two days later I got on a plane to the United States. The timeline of this project matched perfectly and was in part a lucky coincidence for me personally," Kampka said.

Coming from WZL and Fraunhofer IPT, both world-leading institutes in academic research in their fields, Kampka feels the group has a responsibility and duty to perform up to the high standards they are known for. The group's mission is to become the number one provider of the latest and most innovative gear

related content available both in bilateral research services as well as in education.

For 2018 and beyond, the Gear and Transmission Technology Group will examine many of the new technologies that the gear industry has been discussing in recent years.

One of the topics already being addressed is E-Mobility. Due to the elimination of the masking sound emitted by the combustion engine, noise behavior of high speed transmissions is one major research topic. This is challenging for both, design and production.

Another topic on the agenda is Industry 4.0 or Industrial Internet of Things (IoT). "The concept behind that is still a little bit too obscure for a lot of people, but in the long run it will be an enabler for productivity increase in any high wage country and industry. This is one of the reasons why we are constantly improving the capabilities of our virtual process chain, which is one of the keystones of Industry 4.0," Kampka added.

3D-printing and other near net shape processes like powder metallurgy are also of interest for the Gear and Transmission Technology Group. Both will bring new materials and the gear industry will not be constrained to the same geometries as in conventional process chains. This will open a much wider playground for gear research, according to Kampka.

"There are enough interesting challenges to overcome for both the U.S. gear industry and the rest of the gear world in the future," Kampka added. (www.cmi.fraunhofer.org)

Diablo Furnace

APPOINTS COO

Sue Harrod was recently appointed to C.O.O. of Diablo Furnaces LLC, a company manufacturing, refurbishing, upgrading, servicing and supplying parts for atmospheric heat treating equipment. Harrod has worked within the thermal processing industry for 25 years in supporting and leading roles at BeaverMatic, Ipsen International, and Diablo Furnaces. With her passion and exemplary leadership capabilities, Ken Flowers and Ron Peiffer, owners of Diablo Furnaces LLC and Machine Tool Builders (MTB) have appointed Harrod to this position. Please congratulate and support Harrod in this expanded role in the heat treating industry. (www.diablofurnaces.com)



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Forest City Gear has successfully met the Women's Business Enterprise National Council's standards for certification as a Women's Business Enterprise.

WBENC National WBE Certification validates that the business is owned, controlled, operated, and managed by a woman or women. To achieve WBE Certification, women owned businesses complete a rigorous documentation and site visit process. WBE Certification is an important accreditation recognized by hundreds of WBENC Corporate Members and government agencies, including most major US corporations and federal, state and local government entities.

"Supplier diversity is an increasingly important aspect of the procurement process that Forest City Gear is involved with in the industries we serve, and the WBE Certification gives us critical recognition," says Forest City Gear President and CEO **Wendy Young**. (www.forestcitygear.com)



Gear Motions

ANNOUNCES RETIREMENT OF SAM HAINES

Samuel R. Haines has retired from his position as CFO of Gear Motions, Inc. effective at the end of 2017, following 44 years of service.

In 1973 Haines was in graduate school and in search of a thesis topic to complete his MBA at Babson College in Wellesley, MA. As fate would have it, his father was in need of business plan for a bank loan for a small gear manufacturing company that he had acquired a few years earlier. Thus, as they say, was the trap set.

Following graduation and in the midst of the '73 "oil recession" Haines signed on (temporarily) to help work through the newly formed Gear Motions' first acquisition of Oliver Gear in Buffalo, NY.

Still on "temporary assignment" in 1980, Haines and his family moved to Syracuse, and he assumed the management of the recently acquired Nixon Gear as VP/GM. Shortly thereafter he was named president of Gear Motions in 1985 when his father was diagnosed with pancreatic cancer.

In 2005, in anticipation of his eventual retirement, he began the sale of the company through the establishment of an Employee Stock Ownership Plan (ESOP) and became chairman and CFO. This created a 10 year financial plan for transferring 100% ownership of the company to its employees, assured that the company would remain at its current location and viable for



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many years to come, and created a phased financial transition for the owners.

Under Haines leadership, the company won numerous awards including the 1999 Donlon Award for Employee Centered Practices and many customer awards for outstanding performance, among them the UTC Supplier Gold Award, Carrier Q+ Certified Supplier Award and Eaton Certificate of Excellence.

He has always been active in the community and industry. He served on the American Gear Manufacturers Association (AGMA) board of directors from 1988-2000, and was chairman of the board from 1998-1999. He was a member of the AGMA Foundation Board from 1999-2006. In 1993 he received the AGMA's highest honor, the E.P. Connell Award, and in 1997 The Board of Directors Award.

Locally, Haines has served on the board of directors of the Manufacturers Association of Central New York (MACNY) since 1989, Chaired the Factory Managers Council from 1985-1988 and was Chairman of the Board from 1995-1997. In 2006, he was recognized for his distinguished service to manufacturing in Central NY and named to the MACNY Wall of Fame. He plans to continue in his role as chairman of the board of directors for Gear Motions, until at least the end of 2018. (www.gearmotions.com)

Kapp ANNOUNCES SERVICE MANAGER PROMOTION

Kapp Technologies recently announced the promotion of **Johannes Hoehn** to service manager. In his new role, Hoehn will lead service and parts efforts to ensure and maintain customer satisfaction.



He joined the Kapp Niles group in 2000 as an industrial technician in Coburg, Germany. In 2012, he relocated to Kapp Technologies in Boulder, Colorado together with his family. Since relocation, Hoehn has been supporting the Kapp Technologies team as a service technician. This position allowed Hoehn to strengthen his subject-specific knowledge while deepening the relationships to customers.

"Close contact with our customers paired with high-quality technical support was my philosophy as a service technician. I'm excited to bring in these aspects among others in my new role as service manager," said Hoehn.

The service manager role has been handed over to Johannes by Michael Kapp, who pursues new challenges together with his brother, Matthias Kapp, both filling the position as management assistant with Kapp Niles in Coburg, Germany.

Kapp Technologies would like to thank Michael Kapp for his support as service manager and wish him all the best in his new position. (www.kapp-niles.com/usa)

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