

2017 Gear Expo: Gears, Machinery — and a Whole Lot More

Jack McGuinn, Senior Editor

“For the past six years, Gear Expo has been growing and expanding with more suppliers and attendees meeting to build new partnerships and explore the latest technology on the market.”

AGMA Management”

Perhaps since its inception in 1987, there has always been a bit of back-and-forth over just what kind of show Gear Expo is.

Is it a gear show? A machinery show? Does it matter?

Given how trade shows, along with the industries they promote, evolve over the years—always with the critical goal of maintaining technological relevance—the “Does it matter” question makes the most sense. As technologies and applications advance, trade shows mirror those two areas and, more importantly, provide a hands-on look at the technologies of tomorrow. Gear Expo 2017 is no different in this regard.

With that said, however, the bi-annual show remains known as *Gear*

Expo—and not, say—Grinding Expo, CNC Expo or Work Holding Expo. At the end of the day, it’s about the gears. Make no mistake—the machinery on display at Gear Expo 2017 is a huge draw for the show. And machinery makers get a second—or third—bite of the apple with mega-shows like IMTS and Hannover Messe. But other *gear-intensive* shows? Not so very much—which is partly why Gear Expo enjoys ongoing success.

And yet, aside from the gear vs. machinery dynamic, there is so much more to Gear Expo than gears or the machinery that makes them. That’s because it takes much, much more to make a finished gear than even the most sophisticated machine. And it is exhibi-

tors who are part of the “much, much, more” that is addressed in this article.

The Big Machinery entities still command the largest booths and choicest real estate on the show floor. But if attendees are sufficiently inquisitive and so inclined, they will also explore beyond “the Midway” with its bells-and-whistles hardware and walk some aisles less traveled.

That’s where you’ll find exhibitors that some attendees may mistakenly consider superfluous to the show. Make no mistake—these exhibitors are in their own way as important to the overall gear manufacturing process as any gear or machinery maker.

Let’s consider, by way of examples, five companies—a mix of second- and first-



time Gear Expo exhibitors. These exhibitors help personify the gradual change in Gear Expo's mission over the years. With the advent of ultra-high-tech industrial automation, mechatronics, IIoT, 3-D printing, and robotics, AGMA continues to fulfill its mission by expanding Gear Expo's reach to best reflect today's real world of manufacturing. With the inexorable, production-driven advances in manufacturing and industrial automation, some believe we are in the midst of a second Industrial Revolution. To AGMA's credit, Gear Expo 2017's array of exhibitors is an excellent example of how the show—and the industry it serves—have changed since its debut in 1987.

Here are five Gear Expo 2017 exhibitors that reflect the show's diversity, followed by some Q & A with their representatives. Three exhibited at Gear Expo 2015 and two will exhibit for the first time. More to the point: these five companies all make and sell markedly different things. And yet every one of them is essential to gear making. There are many links in the gear manufacturing process

chain—all intended to help produce the best gears possible—from commodity gears to custom. You can visit them all at Gear Expo 2017.

Acme Wire Products Co., Inc. (Booth 1049) specializes in precision fabrication of components, parts, and products; e.g., metal components for OEM equipment or industrial processes, or custom wire-formed parts for medical or HVAC equipment.

Third Wave Systems (Booth 538). Third Wave Systems is a provider of validated material, physics-based modeling solutions and services. Software suites *AdvantEdge* and *Production Module* are designed and built to improve manufacturers' current machining processes, providing engineers access to better information than trial-and-error tests.

Turnkey Design Services (TDS) (Booth 636). The company manufactures micro metering pumps while providing various other engineering services.

Hardware produced includes motor- and gearbox-driven pumps; high-speed and power gearboxes; motor-driven actuators; brushless DC motor controllers; and DC motors. The company works to effectively shepherd customer products from concept to development.

Tekfor, Inc. (Booth 818) manufactures precision machine parts and weight-reduced, high-performance components. The company was incorporated in 1999 and is based in Wooster, Ohio. Tekfor, Inc. operates as a subsidiary of Neumayer Tekfor Holding GmbH.

RUF Briquetting Systems (Booth 700) is a North American provider of industrial briquetting systems. RUF's system allows companies to create valuable products for the generation of heat and secondary raw materials by making briquettes from production residues—thus leveraging smart technology to improve business operations and protect the natural environment.

They are: Mary Fitzgerald, president—**Acme Wire Products**; Jennifer

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Holt, marketing and events manager — **Third Wave Systems**; Robert Kennedy, owner — **Turnkey Design Services (TDS)**; Kevin Weldi, managing director-Americas, assisted by Robin Martin and Steve Ruvalcaba, key account managers — **Tekfor**; and Joe Michalewicz, sales and marketing — **RUF-Briquetting Systems**.

Mary Fitzgerald, Acme Wire Products

Would you say there is a greater emphasis on automation (gear drives, etc.) at this year's Gear Expo?

We won't know the extent of the automation emphasis until we are at the show. [But] it is reasonable to say that improvements in gear processing through automation yield more consistent product and reduce overall costs of mass-producing gears. The automation companies work in tandem with the gear producers to improve the processes.

Have you exhibited at Gear Expo before? Why do you exhibit at Gear Expo?



Acme Wire Products provides precision wire baskets and other components for OEM manufacturers.

Yes. We exhibit at Gear Expo to support the automation companies we work with and to increase the awareness of automation companies about the myriad ways steel baskets and

trays can be used in gear processing.

Are you rolling out anything new or updated?

Our investments in equipment enable Acme Wire Products to provide custom baskets with shorter lead times without sacrificing quality or dimensional accuracy. Acme Wire Products is the premier domestic source for precision wire baskets and trays.

We have developed unique insert and tray configurations for existing customers and develop parts that best meet each customer's specific needs. We don't have a "one-size-fits-all" mentality, but we do recognize that our experience in this marketplace can definitely benefit our existing and future customers.

Has the show been successful for you in the past?

Yes, and we anticipate another successful show in 2017.

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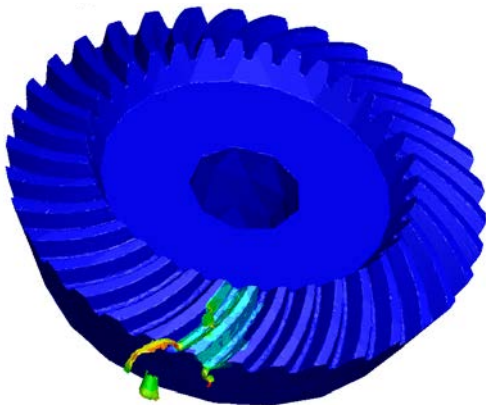
Jennifer Holt, Third Wave Systems

Why is Third Wave Systems exhibiting at Gear Expo?

"We exhibit at Gear Expo to gain exposure within the gear marketplace. For the most part we are new to this arena and we know it's a close-knit community. The more we can showcase our unique, one-of-a-kind software capability, the more the players in the gear industry can get to know us and become familiar with the software, evaluate the software and eventually implement the software into their gear machining processes."

(Holt explained that although this is the company's second Gear Expo, it represents a continuation of their efforts begun at the 2015 show.)

"[The 2015 show] was around the time when we started to transition our gear machining technology from the government project work we were doing to building a commercially available software package."



Is Third Wave Systems rolling out anything new or updated?

Yes. Earlier this year we released *AdvantEdge Gear Machining v1.0* that featured capabilities for cylindrical hobbing. Then in June we released *AdvantEdge Gear Machining v1.1* that included capabilities for spiral bevel gear machining. In September we are planning another update that will speak to both features.

Has Gear Expo been successful for Third Wave in the past?

The 2015 show was successful for us in the sense that we met a lot of good people and were able to generate interest. We didn't necessarily come away with a lot of leads that turned

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into immediate sales, but we knew that was a possibility going into the show. We wanted to lay the groundwork in 2015 (since the show is every-other-year); so when we are back in 2017 we will have more robust gear machining capabilities to share with attendees—which we are very excited about!

Joe Michalewicz, RUF Briquetting Systems

As a former exhibitor, has the show been successful for you in the past?

Yes, we had several orders for both grinding sludge briquetters and for our metal briquetters from the last show.

Why exhibit at Gear Expo?

"There is a lot of grinding done during the process of manufacturing gears. RUF grinding sludge briquettes can eliminate the need to landfill the sludge and return valuable grinding fluid to be reused."

Are you rolling out anything new or updated?

Yes—the RUF 4/2300/60 grinding sludge briquetter.

Kevin Weldi, Tekfor

Would you say there is a greater emphasis on automation (gear drives, etc.) at this year's Gear Expo? And if so, do you see that trend continuing?

"Yes, there is a greater emphasis on automation which is one of the reasons that Tekfor has chosen to exhibit at this year's Gear Expo. "It is our

belief that automation and integrated systems are a must to remain competitive in an automotive environment. Given the atmosphere in the automotive industry, we do see that emphasis continuing. Tekfor has embraced this trend and has been actively involved in improving automation and utilizing advanced technologies since 2012. And we only see the importance of this continuing to rise."

Has Tekfor exhibited at Gear Expo before?

No. While we've had attendees at the last several events, this will be The Tekfor Group's first time as an exhibitor at Gear Expo.

Why are you exhibiting at Gear Expo?

The Tekfor Group is a global partner for the automotive industry and a market leader in the creation, development and production of differentiated solutions for transmissions, engines, driveline, chassis, special applications and fasteners. With forging and machining in the U.S. and machining in Mexico, Tekfor has chosen to exhibit at Gear Expo 2017 because we feel this is a great opportunity to re-introduce our company to the North American market.

Are you rolling out anything new or updated?

Surprisingly, Tekfor's operations in the U.S. have been recognized as forge only. However Tekfor does offer a vast array of machining capabilities in North America and would like to share this with potential customers. Tekfor's

RUF-Briquetting systems will introduce the RUF-2300 sludge machine at 2017 Gear Expo.



facilities in North America offer semi-finished and finished components ready for assembly. We also want to share knowledge of the global capabilities for cold, warm and hot forging and machining, with the option to localize in Mexico.

Having attended past Expos, what did Tekfor gain from that perspective?

It has been successful for us to better understand marketing and technology trends. But our goal now is to use Gear Expo for marketing and promoting The Tekfor Group's global brand as an innovative solution provider.

Robert Kennedy, Turnkey Design Services (TDS)



The technology for this constant-speed motor is demonstrated in a YouTube video at <https://youtu.be/QSVXYyHccs0>. The motor drives the VSD technology, whose output speed is electrically varied by a turning wheel.

Has TDS exhibited at Gear Expo before?

This will be the first time we will be exhibiting at the Gear Expo.

Why are you exhibiting at Gear Expo? Are you rolling out anything new or updated?

Turnkey Design Services is a full-service product development firm. We generate revenue by providing engineering services to companies, which includes gear design/gearboxes, and developing new technology for the military. The miniature pumps that we manufacture can be used for drones; the technology was developed for the Air Force. We will be displaying technology that we developed for the F-35 while under contract for the Navy. It is an electronically controlled gearbox that can change speed ratios across it on demand. This self-powering device consists of a planetary gear set coupled with a small generator. This



Mainshafts are a big part of automotive supplier Tekfor's product line.

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technology allows a high-horsepower, gearbox-driven device to perform like a motor-driven device—without the weight penalty and associated reduction in reliability as with a high-power electric motor. The technology not only can change speed ratios on demand; it can also produce electrical power created by its self-contained generator.

For the F-35 application we are working with NAVAIR to control the main engine lubrication pump. By transforming the current gearbox-driven,

fixed-displacement pump into a flow-on-demand pump, the aircraft's engine lubrication system temperature rise is reduced while reducing system weight and costs. This can generate a fuel savings of 4 to 5 gallons per day, per truck. Other applications include vehicle alternators, compressors and wind turbines. ⚙️

For more information:

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