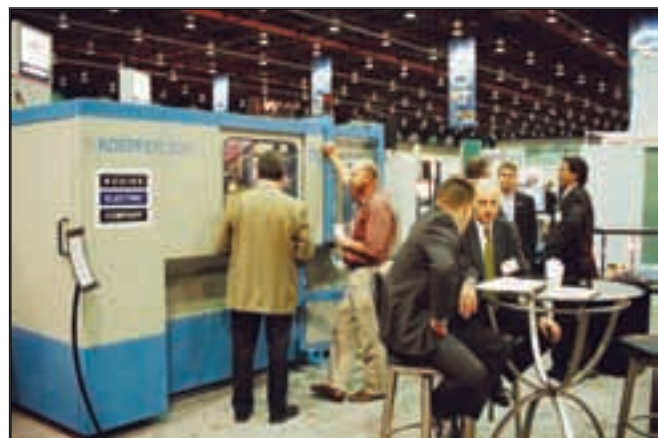


## Gear Expo: Still a Tool for Business



Gear Expo 2005 had lulls in attendance, times when fewer visitors were walking the aisles looking at products and services, and a number of exhibitors didn't have the business they'd expected or hoped for, but the AGMA show remained a tool for business in the gear industry.

Among the larger exhibitors, several companies said they did well during the expo, with a few citing the quantity and quality of sales leads from the show.

"The potential customer traffic was constant, and the quality of the traffic excellent," said Ian Shearing, vice president-sales for Mitsubishi Gear Technology Center. "We sold some machines directly off the show floor."

Uwe Schmitz, managing director of Kapp Group, agreed about the quality of attendees.

"People come here, they are doing serious research," he said, adding that they talked about lead times and asked the questions usually involved in making a buying decision. "They're not here to look at a couple of machines and go away."

At the Höfler GmbH exhibit, Hagen Hofmann, president and CEO, was most concerned with only a small number of expo attendees. Höfler manufactures gear grinding and hobbing machines for larger diameter gears, so its range of possible customers is narrower than other machine tool manufacturers'.

"Our potential customers can be counted on four hands," Hofmann said, "and they were almost all there."

In total, Gear Expo '05 had 1,396 attendees, according to *Gear Technology's* own review of the expo's registrant list.

The attendee count didn't include the 1,100+ people present as exhibitors. They can't be counted as regular attendees, but

Kurt Medert, AGMA vice president—business management division, considers them when measuring expo attendance. After all, there's little doubt that a number of exhibitors also walk the aisles as de facto attendees. For example, the president of a gear manufacturing company might leave his exhibit area to co-workers for an hour so he can talk with a gear cutting tool manufacturer about hobs.

"It's two shows in one," Medert said.

So he was encouraged by the measure for this show inside a show. At the '01 expo, the number of employees present for exhibiting companies was 1,145. In '03, it dropped to 738. At 1,100+, this year's number was a sign of recovery for Gear Expo.

Also, in its attendance, the expo showed itself similar to IMTS, the International Manufacturing Technology Show. Like the show, the expo served as a sign of some recovery in the gear industry.

In September '04, IMTS indicated there was recovery, and a number of Gear Pavilion exhibitors said business was improving and expressed optimism about '05. A year later, several Gear Expo exhibitors, including two who exhibited at IMTS, said their companies were doing well and forecasted a continuation.

"The order intake has been good," said Kapp's Schmitz, "and we expect that to be good until the end of '05." He added that he expected the trend to continue into the first quarter of '06. Schmitz's U.S. operation, Kapp Technologies, exhibited at IMTS '04.

Another exhibitor there was Gleason Corp., whose vice president—American sales, Mark Hiscock, had expected his company to finish the year "with a bang" and had predicted '05 would be a strong year.

Last month, John J. Perrotti, Gleason president and CEO, said company sales were record high for '05, and the business had considerable momentum. "Our prospects continue to look good," he added. "We continue to have high expectations for 2006."

Dennis Richmond, Reishauer Corp.'s vice president, had mixed expectations, though. "The weather in my crystal ball is partly cloudy," he said. "I'm hoping for continued sunshine."

Fässler Corp. and Höfler didn't exhibit at IMTS, but the two Gear Expo exhibitors were seeing sunnier skies.

"In general, our company has been doing better since IMTS '04, although it was not a direct result of that show," said Fässler's vice president, Alan Mirsberger. Hofmann added that Höfler business was excellent and he expected the trend to continue into next year.



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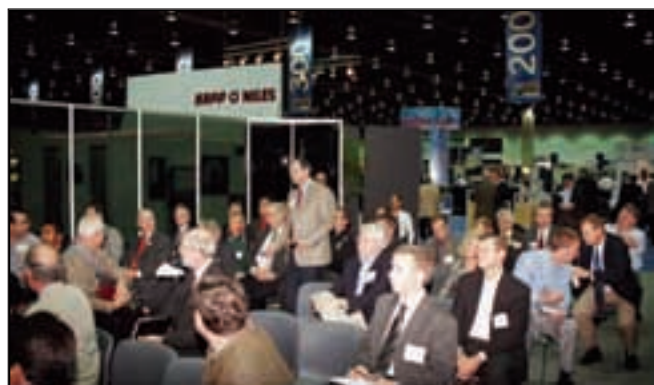
## Gear Expo 2005: Somewhat Recovered

After the economic recession in 2001, Gear Expo lost attendees, exhibitors and occupied less space at its '03 show, but the '05 expo showed it had stabilized, and had even somewhat recovered.

The stabilization was in the amount of exhibit space. Gear Expo dropped from 57,400 square feet in '01 to 39,000 in '03, but it occupied 40,000 in October. That slight increase was despite a considerable increase in exhibiting companies: 150 in '03 versus 180 in '05. On average, companies have been occupying less booth space since the '01 show, but this year's higher number of exhibitors was one part of the expo's recovery.

The other part was attendance. In '01, Gear Expo attracted 1,700 attendees. Two years later, attendance was down 29 percent, to 1,200 people. That number appears to have been bottom, though. With the U.S. economy somewhat recovered, Gear Expo '05 attracted 1,400 attendees.

Gear Expo by the Numbers			
Gear Expo	2001	2003	2005
Exhibitors	194	150	180
Booth Space Occupied	57,400 sq. ft.	39,000 sq. ft.	40,000 sq. ft.
Attendees	1,712	1,212	1,396
Exhibitor Personnel	1,145	738	1,116



## A New High for the Fall Technical Meeting

The AGMA 2005 Fall Technical Meeting enjoyed a high in its number of papers when it convened Oct. 16–18 in Detroit, MI.

The annual event for gear design and manufacturing engineers has averaged about 14 papers since the 1990 meeting. This year, it had 20 papers, a new high. The old high since the '90 meeting was 19 papers at the '99 gathering.

The other major aspect of the meeting was its return to Gear Expo. After '93, the two events were held apart, at different times and locations. In 2001, they were reunited. Both were held in Detroit that year, with the expo ending two days before the meeting started. The next expo year, they were split up again.

In a sense, no Fall Technical Meeting occurred in 2003. That year, the AGMA combined its meeting with the much larger International Power Transmission and Gearing Conference, held by the mechanical engineering society ASME International. Whatever papers the AGMA had were added to the ASME event, which featured a total of 129 papers on power transmission and gearing. Consequently, AGMA has no papers carrying an '03 FTM designation.

The interruption, however, seemed to have no ill effect. The Fall Technical Meeting returned in 2004, with 14 papers and 120 registered attendees. This year's meeting had 90 registered attendees. After looking at attendee surveys, Bill Bradley, AGMA vice president—technical division, said this year's papers received good ratings, which he took as a sign about the meeting: "I think it went well."

'05 papers are available for immediate download via the AGMA Online Store for \$35 a paper. A 50% discount is available for AGMA members. The papers can also be ordered by phone from Amy Lane, AGMA technical editor.

### For more information:

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AGMA

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Phone: (703) 838-0059

E-mail: [lane@agma.org](mailto:lane@agma.org)

Internet: [www.agma.org](http://www.agma.org)

## Papers Presented at the AGMA 2005 Fall Technical Meeting

### Session I—Manufacturing and Testing Gears

- "Molded Plastic Face Gears: Design and Manufacture" by I. Laskin and E. Reiter,
- "The Effects of Pre-Rough Machine Processing on Dimensional Distortion During Carburizing" by G. Blake,
- "Modeling Gear Distortion" by P.C. Clarke, and
- "Tooth Meshing Stiffness Optimization based on Gear Tooth

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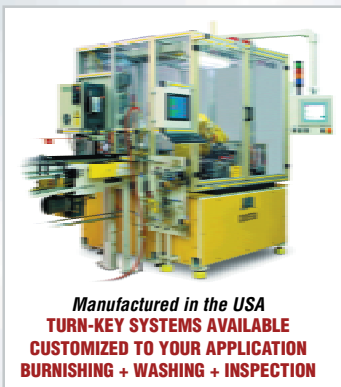


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Form Determination for a Production Process Using Different Tools” by U. Kissling.

## Session II—Hypoid and Bevel Application Design

- “Simulation of Face-hobbing Process for Hypoid Gears: Surface Generation, Contact Analysis and Fillet Stress Calculation” by A. Piazza and M. Vimercati,
- “A Model to Predict Friction Losses of Face-hobbed Hypoid Gears” by H. Xu, A. Kahraman, and D. R. Houser,
- “Spiral Bevel and Hypoid Gear Cutting Update” by T.J. “Buzz” Maiuri,
- “New Developments in Tooth Contact Analysis for Bevel Gear Drives: A Universal Surface Generation Algorithm and Finite Element Model” by Qi Fan and Lowell Wilcox, and
- “Hypoid Gear Lapping Wear Coefficient and Simulation” by C. Gosselin and Q. Jiang.

The meeting included a special presentation of the new AGMA Bevel Gear Rating Suite by the AGMA Computer Software Committee at the end of the second session.

## Session III—Innovative Application Solutions

- “Finite Element Study of the Ikona Gear Tooth Profile” by J.R. Colbourne and S. Liu,
- “Low Loss Gears” by B.-R. Höhn, K. Michaelis, and A. Wimmer,
- “Modal Failure Analysis of a Gear and Drive Ring Assembly” by D.D. Behlke,
- “Evaluation of the Scuffing Resistance of Isotropic Superfinished Precision Gears” by P.W. Niskanen, B. Hansen and L. Winkelmann, and
- “Determining the Shaper Cut Helical Gear Fillet Profile” by George Lian.

## Session IV—Making Gears Work for Life

- “Repair of Helicopter Gears” by S. Rao, D. McPherson and G. Sroka,
- “H47D Engine Transmission Input Pinion Seeded Fault Testing” by J. Petrella, J. Kachelries, and S. Holder,
- “Influences of Bearing Life Considerations on Gear Drive Design” by F.C. Uherek,
- “Planet Pac: Increasing Epicyclic Power Density and Performance Through Integration” by D. Lucas,
- “The Application of Very Large, Weld Fabricated, Carburized, Hardened & Hard Finished Advanced Technology Gears in Steel Mill Gear Drives” by R. Drago, and
- “Analysis of a Dual Drive Conveyor Failure” by J. Lisiecki.

## EVENTS

**December 5-8—Gear School 2005.** Gleason Cutting Tools facility, Loves Park, IL. This three-and-a-half day program covers fundamentals, high speed steels, coating, gear cutting and inspection. Participants tour the Gleason Cutting Tools plant and have the option of an off-site tour of a complete manufacturing facility. Training also includes individual instruction and troubleshooting for specific problems. \$895 fee includes hand-book, a group dinner and all lunches. For more information, contact Gleason Cutting Tools by telephone at (815) 877-8900 or on the Internet at [www.gleason.com](http://www.gleason.com).

**December 6-8—POWER-GEN International.** Sands Expo Center, Las Vegas, NV. Power generation conference with technical tours of the APEX Generating Station, Silverhawk Power Plant and the Hoover Dam. Keynote sessions include speeches by the president and CEO of GE Energy's Nuclear Division, the Iraqi Minister of Electricity as well as the presidents of Energy Management Inc. and Semptra Generation. Conference costs range from \$95-\$600. For more information, visit the show's website at [www.power-gen.com](http://www.power-gen.com).

**December 12-14—Plastic Injection Mold Design Basics.** Holiday Inn on the Bay, San Diego, CA. The seminar covers every major component of an injection mold and is designed for tooling engineers, buyers (especially of overseas tooling), tool makers, mold designers, product designers, managers and molders. \$990 fee includes materials, a certificate of participation, continental breakfasts and lunches. For more information, contact the University of Wisconsin at Milwaukee School of Continuing Education by telephone at (414) 227-3100 or by e-mail at [oneil@uwm.edu](mailto:oneil@uwm.edu).

**December 15-16—Plastics Injection Mold Design Advanced.** Holiday Inn on the Bay, San Diego, CA. This course offers a more detailed look at the specific inner workings of an injection mold, stressing cost savings. \$790 includes materials, a certificate of participation, continental breakfasts and lunches. For more information, contact the University of Wisconsin at Milwaukee School of Continuing Education by telephone at (414) 227-3100 or by e-mail at [oneil@uwm.edu](mailto:oneil@uwm.edu).

**January 10-11—KISSsoft Software Training Class.** MicroTek Oak Brook Training facility, Oak Brook IL. Content for this seminar is broken into two categories: Theories of Geometry and Strength Calculations for Gears, and Gear Design and Optimization. The first day covers geometry of cylindrical gears with involute profiles, manufacturing tolerances, non-involute tooth forms, strength calculations for gears and for non-involute tooth forms and material selection. The second day focuses on cylindrical calculation, commonly used strategies for gear optimization, cylindrical gear configurations and specialist themes. Class size is limited to 20 and the cost is \$1,250. For more information, contact KISSsoft USA by telephone at (815) 363-8823 or via the Internet at [www.KISSsoft.com](http://www.KISSsoft.com).



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