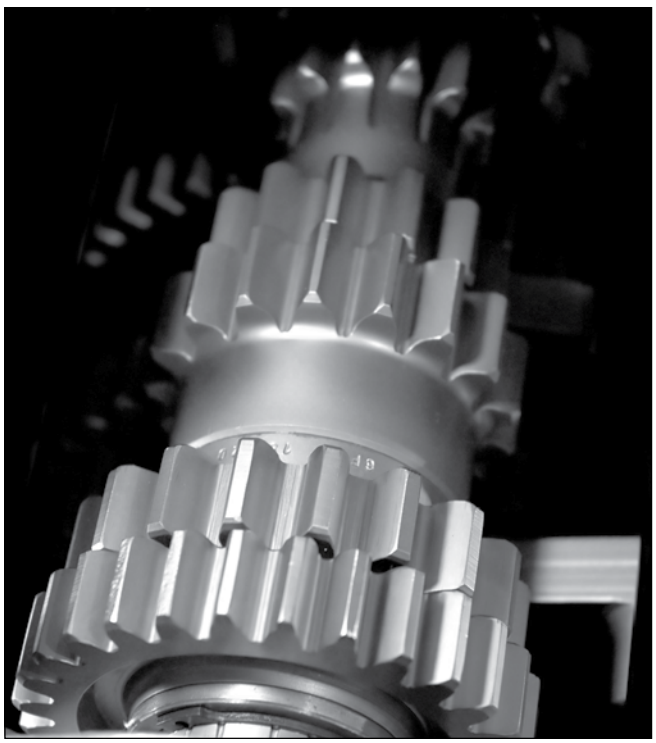
Technically Speaking, A Huge Success

2010 FALL TECHNICAL CONFERENCE



Yes, important and well-deserved awards were presented at AGMA's recent 2010 FTM Annual Awards Luncheon in Milwaukee. Vital committees—Aerospace and Cutting Tools—convened; there were continental breakfasts, networking-friendly receptions and excellent German cuisine. But here's the lead: for almost four days, some of the greatest minds in the gear and gear-related industry met beneath one roof to present and exchange their findings, theories and interpretations regarding the fine art of gearing. From dozens of submitted abstracts, 17 papers were ultimately chosen to represent to peers around the world the depth of knowledge and experience that AGMA members exemplify.

"I was impressed by the quality of presentations," says Dave Ballard, AGMA board chairman and corporate manager for SEW-Eurodrive, Inc. He adds, "Our industry has been known to change with the times; we are seeing some true innovations in design solutions."

Adds AGMA Technical Committee chair Phil Terry, "I was extremely pleased with the attendance; numbers we have not seen since the 1980s, plus the atmosphere of enthusiasm and the large number of new attendees."

Four sessions on topics of particular expertise and relevance were presented: (I) Manufacturing and Heat Treatment; (II) Load Capacity Analysis; (III) Gear Design Considerations; and (IV) Gear Applications.

Presentations addressed a wide variety of in-the-now gear applications—i.e., wind turbine gearbox components, high-contact-ratio gears, tooth engagement and load sharing, reverse engineering and self-locking gears. Of particular significance, the event drew a near-SRO crowd—seats were at a premium for the presentations and awards lunch. "The economy had an effect on our industry, but our registration numbers show us that companies are still very interested in advancing gear science. I was pleased to see almost half the attendees were first-time attendees and the audience was (representative) of a new generation of gear engineers," says Joe Franklin, AGMA president.

Also worth noting is that AGMA went "green" for the meeting, providing an electronic version of all paper presentations to attendees prior to their arrival via hand-held drives. Well-deserved kudos are due the AGMA Technical Committee—especially Phil Terry (Lufkin Industries), Charlie Fischer, Amir Aboutaleb and Abby Lane—for their efforts in working with the authors in guiding them through the process and in coordinating the event.

The 2011 FTM will be held in conjunction with Gear Expo, October 30–November 1, Cincinnati, Ohio. A call for papers for the event was issued in late October. Submission deadline is January 18, 2011.

Following is a complete list of papers presented at the 2010 FTM, all of which are available electronically from AGMA:

Session I—Manufacturing and Heat Treatment

10FTM01—Complete Machining of Gear Blank and Gear Teeth

Author: Dr. Ing. Claus Kobialka (Gleason-Pfauter)

continued

10FTM02—Improving Heat Treating Flexibility for Wind Turbine Gear Systems through Carburizing, Quenching and Material Handling Alternatives
Author: Wallace (Jack) Titus (AFC-Holcroft)

10FTM03—A Novel Approach to the Refurbishment of Wind Turbine Gears
Authors: Mark Michaud and Gary J. Sroka (REM Surface Engineering) and Ronald E. Benson (REM Research Group)

10FTM04—Low-Distortion Heat Treatment of Transmission Components
Authors: Dr. Volker Heuer and Dr. Klaus Loeser (ALD); Donald R. Faron (General Motors); and David Bolton (ALD TT)

Session II – Load Capacity Analysis

10FTM05—Comparison of the AGMA and FEA Calculations of Gears and Gearbox Components Applied in the Environment of a Small Gear Company
Author: Vanyo Kirov (Bucyrus International, Inc.)

10FTM06—Finite Element Analysis of High-Contact-Ratio Gears
Authors: M. Rameshkumar, G. Venkatesan and P. Sivakumar (Combat Vehicles Research and Development Establishment, DRDO)

10FTM07—A New Statistical Model for Predicting Tooth Engagement and Load Sharing in Involute Splines
Authors: Janene Silvers, Carl D. Sorensen and Kenneth W. Chase (Brigham Young University)

10FTM08—Calculation of Load Distribution in Planetary Gears for an Effective Gear Design Process
Authors: Dr. Ing. Tobias Schulze, Dipl. Ing. and Christian Hartmann Gerlach (Drive Concepts GmBH); and Dr. Ing. Berthold Schlecht (Technical University of Dresden)

Session III – Gear Design Considerations

10FTM09—Recommendations for Reverse Engineering
Author: Charles D. Schultz (Beyta Engineering Service and Gear Technology Technical Editor)

10FTM10—Evaluation of Methods for Calculating Effects of Tip Relief on Transmission Error, Noise and Stress in Loaded Spur Gears
Authors: Dr. Mike Fish and D. Palmer (Dontyne Systems, Ltd.)

10FTM11—Point-Surface-Origin (PSO) Macropitting Caused by Geometric Stress Concentration (GSC)
Authors: R. Errichello (GEARTECH and Gear Technology Technical Editor); C. Hewette (Afton Chemical Corporation); and R. Eckert, (Northwest Laboratories, Inc.)

10FTM12—Flank Load-Carrying-Capacity and Power-Loss-Reduction by Minimized Lubrication
Authors: Dr. Bernd-Robert Höhn, Dr. Klaus Michaelis and Dr. Hans-Philipp Otto

10FTM13—Gear Design for Wind Turbine Gearboxes to Avoid Tonal Noise According to ISO/IEC 61400-11
Author: Dipl-Ing. Jörg Litzba (Hansen Transmissions International N.V.)

Session IV – Gear Applications

10FTM14—Analysis and Testing of Gears with Asymmetric Involute Tooth Form and Optimized Fillet Form for Potential Application In Helicopter Main Drives
Authors: Frederick W. Brown, Scott R. Davidson, David B. Hanes and Dale J. Weires (The Boeing Company); and Alex Kapelevich (AK Gears, LLC)

10FTM15—Driveline Analysis for Tooth-Contact-Optimization of High-Power Spiral Bevel Gears
Authors: Jesse Rontu, Gabor Szanti and Eero Mäsä (ATA Gears Ltd., Finland)

10FTM16—Analysis of Load Distribution in Planet-Gear Bearings
Authors: Louis Mignot, Loïc Bonnard and Vincent Abousleiman (Hispano-Suiza)

10FTM17—Self-Locking Gears: Design and Potential Applications
Authors: Alex Kapelevich (AKGears LLC) and Elias Taye (ET Analytical Engineering, LLC)

And the 2010 FTM Awards Go To....

2010 AGMA FTM awards were presented to the following for their contributions to AGMA and the worldwide gearing industry:

Chairman's Awards (for chairmen of technical committees who have released standards in the past year) were presented to:

Robert Wasilewski (Arrow Gear Company)

Todd Praneis (Cotta Transmission Company, LLC)

TDEC (Technical Division Executive Committee) Award:

Richard (Dick) Calvert (Chalmers & Kubeck)