



**TECHNOLOGY DRIVEN  
GLOBALLY CONNECTED**



American  
Gear Manufacturers  
Association



**2009 PROGRESS REPORT**

# GET TO KNOW AGMA

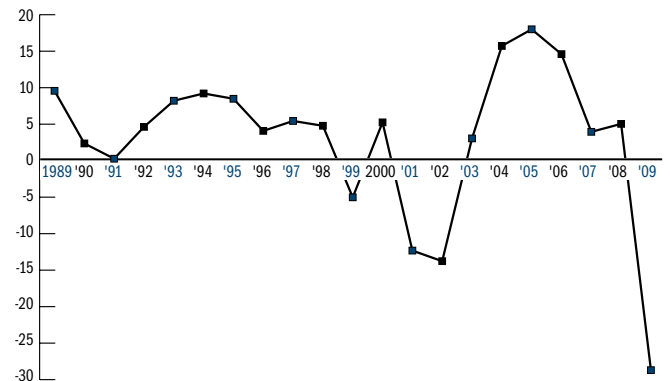
What looked like a mild business correction in the fall of 2007 turned into one of the longest and most severe recessions since the Great Depression. Unlike most downturns, this one was world-wide. The economies of most countries fell at the same time.

Gear manufacturers, their suppliers and related industries suffered significant declines in orders.

“For over 90 years, AGMA has provided the stimulus to move the gear industry forward.”

GARY LEHMAN  
Fairfield Manufacturing

Twenty Years of Gear Market Performance



As the industry association, AGMA took quick action to cut costs and continue to deliver the valuable programs members request.

In a fluctuating and demanding environment, far-reaching connections and the latest knowledge are pivotal to maintaining your business edge and your bottom line. **Your continuing membership in AGMA ensures your access to the latest gear manufacturing technology, as well as the industry's largest community of peer professionals. The international membership expands your network across the globe.**

# TECHNICAL STANDARDS

FINE TUNING YOUR OPERATIONS TOOLKIT

Despite the recession and travel restrictions in the industry, this past year was another busy one for the technical committees.



In response to economic conditions, the number of face-to-face meetings in 2009 was reduced by 50% and replaced by meetings held via web and teleconference to allow more members to contribute to industry standards programs. This shift also allowed more employees to learn while participating.

Attendance at the teleconferences has been excellent, with the number of companies represented equal to or greater than the levels at typical face-to-face meetings.

## AGMA/ANSI Standards

Maintained and continually updated by the AGMA technical division and volunteer technical committees, the complete collection of gear manufacturing standards is free to members.

**NEW FOR 2009** New documents published in 2009 include:

- **ANSI/AGMA 6033-C08, Materials for Marine Propulsion Gearing**
- **ANSI/AGMA 6133-C08, The Metric Edition of ANSI/AGMA 6033-C08**
- **ANSI/AGMA 9004-B08, Flexible Couplings Mass Elastic Properties and Other Characteristics**
- **Supplemental Tolerance Tables for ANSI/AGMA ISO 17485-A08**

AGMA is preparing additional standards for publication, including double helical epicyclic drives, shaper cutter tolerances and components for gear units.

## Fall Technical Meeting

This is a superior technical networking event where experts present new ideas and research over the course of the two-day meeting. Topics range widely, from inspection and metallurgy to vibration and failure analysis. Abstracts are solicited annually and subjected to a refereed review process.

## AGMA Gear Rating Suite 2.2

This software lets members calculate load capacity in accordance with AGMA 2001 and ISO 6336 standards. Use it to determine gear capacity, compare your designs and understand competitors' ratings. **NEW FOR 2009** The next version will capture changes in standards, provide graphical output and permit evaluation of ratings using AGMA application standards.

## AGMA Bevel Gear Rating Suite 1.0

Members use this software to calculate geometry and ratings for straight, spiral, skew and zero bevel gears according to ANSI/AGMA standards.

**NEW FOR 2009** To facilitate the newly adopted international standard for bevel gear accuracy, ANSI/AGMA ISO 17485-A08, the Technical Committee developed a calculation tool to determine tolerances for geometric features from basic design data.

## ISO Technical Committee (TC60)



AGMA serves as the Secretariat to this international committee responsible for developing international gearing standards. AGMA was first elected to the Secretariat in 1993 and has been re-elected every three years since.

**NEW FOR 2009** Additionally, through the ISO Technical Advisory Group (TAG), AGMA represented the U.S. industry's interest at nine international meetings to address micropitting, wormgear design, gear accuracy, gear rating and metallurgy.

“We found immediate member benefit in having up-to-date gearing standards in an electronic format. We are now sure that all our engineers have the best tools to work with.”

**STEVE MCCORMICK**  
Director of Quality and Technical Services,  
Morris Material Handling

# AGMA ACADEMY

UPDATING YOUR KNOWLEDGE AND NETWORK

From large events covering the entire gear manufacturing industry to focused seminars and workshops, AGMA offers members a broad curriculum to boost careers and profits. Members from all facets of gearing know that AGMA is the only association to offer gear education that is affordable, respected and technically advanced.

## THE MAIN EVENTS

### GEAR EXPO

Held only every other year, the GEAR EXPO brings together companies from around the globe in the gear industry's largest exhibition of trends and technologies. **NEW FOR 2009** In 2009, the EXPO was co-located with ASM's Heat Treating Society, allowing attendees to explore even more business opportunities in a cost-effective way. Also new this year, the Department of Commerce chose this event to participate in the International Buyers Program, reinforcing AGMA's global role in the gearing market. GEAR EXPO returns to Indianapolis September 13–15, 2011.

### AGMA Annual Meeting



This past March, about 200 members gathered in Orlando to collaborate on industry challenges, to interact with speakers and network with their peers. The 2010 Annual Meeting, typically attended by senior managers in member companies, will be March 4–6, in Tucson, Arizona.

## ANNUAL TRAINING

### Detailed Gear Design

The popular course is an intensive and all-inclusive program on advanced and critical aspects of gear design. This is not an introduction to gear design. **NEW FOR 2009** In 2009, AGMA added a fourth day, hands-on workshop session, during which participants used PowerGear software to practice the principles of gear tooth optimization.

### Gearbox CSI

Participants will compare the types of gears and bearings — and their limitations and capabilities. Spend three days learning how to use forensics to examine and diagnose gearbox failures.

### Gear Materials Selection, Metallurgy & Heat Treatment

This three-day seminar helps the design engineer and the metallurgist to grasp their inter-related, critical roles in gear processing, heat treatment and inspection.

### Gearbox System Design

**NEW FOR 2009** Gearbox System Design covers components in a gearbox except the gears and bearings (see Detailed Gear Design). The seminar looks at basics, including some history of design, the environment in which the gearbox must "live" and the loading to which the system will be subjected in service, including starting/stopping, continuous, reversing, cyclic and possible errant loads conditions. The concept of a detailed design layout "bible" is introduced and explained as the basis for the overall design and analysis. Gearbox Design is a three day course.

### Gear Manufacturing & Inspection

Engineers will spend three days learning how to use manufacturing knowledge and inspection skills as design tools, including specifying the data required to control both the manufacturing and inspection processes on an engineering drawing or specification.

## REGIONAL MEETINGS

To facilitate networking and education, AGMA offers regional meetings consisting of networking events, educational presentations and plant tours. Check the Event Calendar at [www.agma.org](http://www.agma.org) for the most current listings, planned by the Strategic Resource Network.

## ONGOING INSTRUCTION

### Gear Failure Analysis

Offered in June and September, attendees examine the various types of gear failure — such as macro/micropitting, scuffing, tooth wear and breakage — as well as ways to avoid such failure. **NEW FOR 2009** The 2009 seminar included a half-day, hands-on workshop to permit additional one-on-one education.

### Basic Training for Gear Manufacturing

Offered in the spring and fall, this five-day course offers classroom and hands-on training in the basics of gearing — from nomenclature and inspection to hobbing and shaping.

### Online Workforce Education

**NEW FOR 2009** In 2009, AGMA updated the course presentation for its online workforce training program. Three courses — Fundamentals of Gearing, Gear Hobbing and Gear Inspection — allow employees to learn the basics at their own pace. Courses include study guides, exams and certificates of accomplishment.

# PUBLICATIONS

KEEPING YOU CONNECTED AND INFORMED

Whether members need the latest industry news or want to find a company that offers a specific product, AGMA communicates regularly — and you can get as much or as little information as you want.

## Member Directory



A valuable networking tool, the directory lists all AGMA members according to type (corporate, consultant, academic), geographical location and also alphabetically. Only members receive detailed individual contact information for each member company.

## Gear Industry Update

A bi-weekly e-mail informs subscribers of industry activities — from events and meetings to new programs and other related news. The *Update* presents an overview of important developments from AGMA and its members. Links to the Internet provide more detail for interested readers.

## AGMA Newsbrief

This service tracks the latest news in the gear manufacturing industry — from more than 14,500 hand-picked, editorially ranked information sources — and delivers a weekly e-mail summary to subscribers.

## Industry Product Locator

A comprehensive, searchable list of members' product and service offerings, the guide also lists all companies and contacts for each product or service offering.

## Website [www.agma.org](http://www.agma.org)

**NEW FOR 2009** The AGMA website is more useful to members than ever. Members can register for events, download publications, explore online training, locate peers and partners and more.

# BUSINESS MANAGEMENT TOOLS

## Monthly Market Trend Report



Produced by a third-party vendor and completely confidential, this monthly report details the Industry Bookings and Shipments for eight major product groups: coarse pitch gearing, fine pitch gearing, worm/speed reducers and gearmotors, concentric gearmotor/motoreducer products, shaft mounted speed reducers, high-speed units, offset parallel shaft and right angle speed reducers and mechanical adjustable speed drives and flexible couplings.

## Operating Ratio Report



Financial and operating data allow participating members to benchmark their company's performance against the "typical" gear manufacturer, the best in class and those most similar to their company by product, size and profitability. The ORR is produced by an independent consultant so all data is confidential and isolated from AGMA staff and other members.

## Strategic Resource Network (SRN)



The SRN was created to serve as a mentoring network for younger employees and managers in the gear industry. It plans regional meetings with a focus on networking and education. SRN members are the next generation of leaders for AGMA and the industry.

## Wage and Benefit Survey



This annual survey provides a wealth of information about wages and benefits in the gear industry in a clear, easy-to-read format so members can evaluate their competitiveness in the labor market. The report also provides information for labor contract negotiations, employee benefit plans and employee retention tactics. The Wage and Benefit Survey is completely confidential.

## Sales, Technical, Management & Administrative Salary Survey



This report includes benchmarks for a variety of job classifications from the sales, technical, management and administrative staff salaries. The Salary Survey is completely confidential.

# INTERNATIONAL TRADE MISSIONS



AGMA hosts delegations for visits to international gear manufacturing companies. The purpose of these missions is to promote communication and cooperation with AGMA's international colleagues. Recent missions included trips to China, Germany and Italy. In May 2010, a delegation will visit several gear companies in India.

# AGMA FOUNDATION

ADVANCING THE GEAR INDUSTRY

Founded by members in 1994, the AGMA Foundation supports global gear standards, research to strengthen those standards and the training and education to ensure their effective use. For more information, visit [www.agmafoundation.org](http://www.agmafoundation.org).

“ Leaders within the gear industry recognize and appreciate the **impact AGMA** has had in strengthening and building that industry over the years. ”

**BOB PHILLIPS**  
Gleason Cutting Tools Corp.

# GEARING SYSTEMS ENERGY EFFICIENCY INITIATIVE



**NEW FOR 2009** AGMA and other like-minded organizations, including American National Standards Institute, National Electronic Manufacturers Association, the Hydraulic Institute and others, are pursuing collaboration with the U.S. Department of Energy, industry, standards-making bodies, national laboratories, universities and government agencies for a voluntary program that would make energy management an integral part of industrial operating practices. **AGMA members will be developing tools to assess the energy efficiency of installed gearing systems and information on increasing the efficiency.** This initiative is modeled on similar programs through the Department of Energy's Industrial Technologies Program.



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