

# EDITORIAL

## THE SEEDS OF OUR FUTURE ARE NOW BEING PLANTED



Mr. Richard Norment, director of AGMA, (left) and Michael Goldstein at Gear Expo '88.

A medieval philosopher once said that if he knew for certain the world was to end tomorrow, he would be sure to take time to plant an apple tree in his garden today. The recent events in the world financial capitals have seemed a bit like prior notice of something cataclysmic, but like the philosopher, we can still find some reasons for hope in the face of an uncertain future. The good news for our industry is that four important efforts on the part of various organizations promise to have long-term positive effects on both the gear and machine tool businesses.

First, the October AGMA Gear Expo '88 and Fall Technical Conference held in Cincinnati got very positive reviews from nearly everyone. "Not as good as we'd like it to be, but much better than we thought . . . I'll definitely be back in two years!" That seems to be the over-all consensus of the exhibitors and the 1200 attendees from 15 foreign countries.

The number and quality of the exhibitors was a pleasant surprise to many. We saw more suppliers with more machines than anticipated. Certainly the early commitment by Hagen Hoffman of BHS Hoffer to exhibit a large operating grinder and major machine tool exhibitions by National Broach and Mitsubishi, helped to anchor the more than 100 booths of smaller machine tools, test equipment, cutting tools, software, other products and services.

The atmosphere of the show and the setting of Cincinnati was especially conducive to a successful undertaking. As a first-time exhibitor, we were pleased to know that every one of the attendees either knew us personally or at least had heard of GEAR TECHNOLOGY. A big plus in the minds of many exhibitors was the knowledge that virtually everyone they talked to was a potential customer. There was a feeling that the people who attended had come to do business.

The facilities were excellent and convenient to the hotels. The city of Cincinnati was beautiful, especially at this time of the year, and the nice weather made it a pleasure. The informal quality of the city and the continuous programs somewhat precluded lavish entertaining by some exhibitors, "leveling the playing field" for everyone and fostering a spirit of pleasant camaraderie. Technology, productivity, products, services, personal relationships and commitments were the driving force in Cincinnati.

The technical conference was every bit as good as the show. The quality of the papers was the best I've seen in years. You will be seeing some of these articles in the coming issues.

All around, I think everyone has deemed Cincinnati a huge success for what was really a first-time effort. Those of you who missed Cincinnati, either as an attendee or an exhibitor, missed something special and should not make the same mistake in 1989. The next Expo in 1989 promises to be even more exciting than this one, and an even larger turn-out should be anticipated.

Shortly after Cincinnati, SME held its successful Gear Processing and Manufacturing Clinic in Detroit. Some 130 people heard 25 papers on gear related subjects. Two especially popular features of this year's conference were the panel discussions at the end of each day and the open forum on the last evening of the conference. These gatherings gave the audience an opportunity to share concerns and questions and talk one-on-one with the presenters, and they are a welcome addition to the SME program.

(continued on page 37)



## EDITORIAL . . .

(continued from page 6)

Separately, these two show/conferences are important to the industry, stimulating both sales and the exchange of ideas; however, I think a joint effort on the part of AGMA and SME has an even more powerful appeal. Rather than have to support and promote two separate events, they could combine their individual organizational perspectives, strengths and resources to produce an educational event and gear expo of major international importance. A combined effort could also relieve potential exhibitors and attendees with limited budgets of the difficult decision of choosing which event to support. Joint efforts could also, perhaps, produce small technical seminars, conferences and presentations several times a year in different locations to make educational opportunities more accessible to an even greater number of people in the industry.

A third important seed being planted now will directly affect the research and development side of the industry. ASME/Gear Research Institute held two meetings in December of last year to discuss "The Reshaping of U.S. Gear Research." These meetings addressed ways to improve the sharing of gear research among U.S. companies without destroying any competitive advantage to the company developing the research. Also on the agenda was a discussion of various ways to work more closely with university engineering departments to make the most of our applied engineering expertise.

Last, but every bit as exciting, is the Defense Logistics Agency's plans to set up a Gear Manufacturing Research Center whose purpose is to a) conduct and manage gear manufacturing research with the goal of producing aerospace quality (AGMA Class 12 and higher) gears; b) transfer this technology to gear manufacturers as well as producers of equipment for gear manufacturing; and c) integrate the center with an engineering curriculum of a university to train and educate students.

So what difference do all these programs make to you? They're not going to prevent a severe recession, and running your business in a tough economic environment takes all your time and resources. Why should you even care about, much less support, enterprises like these?

Fair questions, but ones that reflect short term thinking. Improving the quality of shows and conferences and of our research efforts pays long-term dividends. It won't, of course, solve current economic problems, and we won't see results on next quarter's bottom line—or even next year's. But these kinds of projects are like planting trees. Carefully nurtured and cared for, they will grow, prosper and provide us with the materials and substance we need to fuel our growth and development in the future.

**Michael Goldstein, Editor/Publisher**

### THE USE OF BOUNDARY. . . (continued from page 36)

- Thin Rim." *Bulletin of the JSME*. Vol. 27, No. 226. April, 1984, 815-822.
22. N. M. SHOLOMOV. "State of Stress of Central Internal Gear with a Thin Rim." *Russian Engineering Journal*. Vol. 60, No. 4, 1980, 9-12.
23. TERUAKI HIDAKA, TAKESHI ISHIDA, FUMIAKI UCHIDA. "Effects of Rim Thickness and Number of Teeth on Bending Strength of Internal Gear." *Bulletin of the JSME*. Vol. 27, No. 223. January, 1984, 110-116.
24. TERUAKI HIDAKA, TAKESHI ISHIDA, FUMIAKI UCHIDA. "Effects of Addendum Modification Coefficient on Bending Strength of Internal Gear." *Bulletin of the JSME*. Vol. 28, No. 236. February, 1985, 329-336.
25. C. A. BREBBIA. *The Boundary Element Method for Engineers*. Pentech Press, London 1978.
26. P. K. BANNERJEE, R. BUTTERFIELD. *Boundary Element Methods in Engineering Sciences*. McGraw Hill, London. 1981.
27. A. GAKWAYA, A. CARDOU, G. DHATT. "Evaluation of Stresses and Deflection of Spur and Helical Gears by the Boundary Element Method." ASME Paper No. 84-DET-169, 1984.
28. V. RUBENCHIK. "Boundary Integral Equation Method Applied to Gear Strength Rating." ASME Paper No. 82-DET-78, 1982.
29. GORDON H. HOLZE. "Boundary Integral Equation Method Simplifies Elastic Stress Analysis." SAE Paper No. 800431, 1980.
30. J. A. COLLINS. *Failure of Materials in Mechanical Design*. John Wiley and Sons, 1981.
31. SATOSHI ODA, KOUITSU MIYACHIKA, TAKO KOIDE, MASAHIITO MIZUNE. "Stress Analysis of Thin Rimmed Spur Gears by Boundary Element Method." *Bulletin of JSME*. Vol. 29, No. 248. Feb., 1986, 593-599.

### CALL FOR PAPERS—DEADLINE EXTENSION INTERNATIONAL CONFERENCE ON GEARING Zhengzhou, China

Next year, Nov. 5-10, 1988 there will be a three-day conference which will include discussions on theory of tooth form, gear strength and durability, gear materials and heat treatment, dynamics of gear systems, vibration and noise analysis, lubrication, non-cylindrical and non-involute gears, power transmissions and standards. The deadline for abstracts (no more than 400 words) of papers has been extended to **May 1, 1988**.

For further information, contact: Inter-Gear '88 Secretariat, Zhengzhou Research Institute of Mechanical Engineering, Zhongyuan Rd., Zhengzhou Henan, China. Tel: 47102, Cable: 3000, Telex 46033 HSTEC CN

**Acknowledgement:** Reprinted with permission of the American Gear Manufacturers Association. The opinions, statements and conclusions presented in this article are those of the Authors and in no way represent the position or opinion of the AMERICAN GEAR MANUFACTURERS ASSOCIATION.

The authors would like to thank the sponsors of the Gear Dynamics and Gear Noise Research Laboratory for their encouragement and financial support which made this study possible.

The editors wish to thank Dennis Gimpert of American Pfauter for his assistance in the technical editing of this article.