GUEST EDITORIAL

NO SURPRISE

For the last few years, the market has been tough for the U.S. gear industry. That statement will cause no one any surprise. The debate is about what to do. One sure sign of this is the enormous attention Congress and the federal government are now placing on "competitiveness."

As illustrated by the debates in Congress, there seem to be plenty of ideas. Reform of trade legislation constitutes one part of the answer, and changes in the tax or product liability laws would also help. AGMA is working for these reforms, but most often what I hear from gear executives is "success lies on my own shop floor, not in what Washington is going to do for me." Even if the federal government does remove some of the hurdles, the only winners in the "competitiveness race" are going to be those who decide on their own to put on track shoes.

It's easy to blame others for our problems—or to expect someone else to solve them. Even when there is a lot of justification for the feeling that someone else may be at fault, we're the only ones that really control our own fate.

This same idea was revealed in a recent survey of AGMA members on the impact of international trade. Again, the results come as no surprise. How severely a company is feeling the pressures of competition, both domestically and internationally, has a direct correlation with the age of a gear company's equipment. One example was found among the manufacturers of fine pitch gearing—over two-thirds reported that they were experiencing severe competition. These same companies indicated that the average age of their machinery was 21.3 years. This is a big contrast to the other one-third of the fine pitch gear makers, whose average age of equipment was only 14.2 years, or 7.1 years less.

This seems to be an important statistic, especially since similar figures appear in almost every other segment of the industry studied. You can quickly draw the conclusion that to be truly competitive, you need to utilize the latest technology.

So how did that lead us to organize the AGMA trade show, GEAR EXPO '87? Again, no surprise, for there is a direct connection. For years, AGMA has been a good source of the latest technical information. Our standards development process and our meetings involve people drawn from every corner of the world,

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GEAR EXPO GROWS UP

AGMA's Gear Expo '87 opens on October 4 and runs through October 6 at the Cincinnati Convention Center, Cincinnati, Ohio. Building on the foundation of the mini-show held last October in Chicago, AGMA this year offers over 30,000 sq. ft. of display space and more than 100 booths for those marketing directly to the gear manufacturing industry. This is the only U.S. show devoted exclusively to gears and gearing products.

In addition to expanded display space, Gear Expo also will have expanded exhibitor hours, with booths being open for a total of 22 hours over the three days of the show. Hours will be 10:00 to 6:00 on Sunday and Monday and noon to 6:00 on Tuesday.

The Fall Technical Meeting will be held in conjunction with Gear Expo '87. Papers and presentations on a variety of subjects will be offered, including gear geometry, bevel gearing, rating and loads, new inspection techniques, wear and materials and new manufacturing processes. The Technical Meeting will be held at the Cincinnati Hyatt Regency.

Gear Expo '87 and the Fall Technical Meeting are being held in Cincinnati, Ohio. Cincinnati is at the center of the U.S. gear industry. Almost half of the industry is located within 300 miles of the expo and meeting site.

For more information about Gear Expo '87 and the Fall Technical Meeting, call Wendy Peyton at AGMA Headquarters, (703) 684-0211.

VIEWPOINT

Gear Couplings

In the May/June issue of your excellent magazine, Mr. Stan Jakuba discusses a serious problem, not only for the gear industry, but any machinery where fluctuating torque is encountered. I would like to make the following comments to his article:

1. The statement "the transmission was properly selected and sized" is very wrong! If it were properly selected, it would not have failed! The engineer that selects a transmission cannot disregard the equipment the gears are connected to. It boggles my mind that someone would select a transmission based only on horsepower, speed and ratio, and would not ask what is the prime mover and the driven machine. If not the engineer that selected the transmission, who has the responsibility of selecting the couplingS? Note the upper case S; Mr. Jakuba should have discussed the output coupling also. I would like to recommend to you an ASME paper written by Mr. John Wright and entitled "Flexible Couplings and the Cinderella Syndrome."

2. Mr. Jakuba's conclusion that one should select a coupling with "the lowest torsional spring rate" disregards the economics of coupling selection. Lower the spring rate — larger the coupling — higher the expense.

3. Mr. Jakuba makes the correct statement that the torque peaks "will be higher with higher equipment inertia"; which equipment? In the case he describes, it is apparent that the transmission was a speed increaser, hence, the engine was driving the gear (large inertia), and the pinion was driving the generator (very large inertia). Where should the "soft" coupling be installed? At the input or at the output shaft?

4. The conclusion I would have liked to have seen in Mr. Jakuba's article is: leave the coupling selection to the specialists! Select either a coupling manufacturer that makes more than one type of coupling or hire a specialized consultant to perform a design audit on the couplings which are proposed by various manufacturers.

Finally, Mr. Jakuba makes a basically wrong statement: "The culprit in the case was a coupling." The correct statement should have read: The culprit in the case was the inexperienced engineer who selected the wrong coupling.

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Mr. Jakuba's Reply:

It is always a pleasure to read comments written by someone who is as knowledgeable about the subject as Mr. Calistrat obviously is.

Regarding his first comment, the objective of the paragraph was to present an attention catching example of the consequences of poor engineering judgment. The point was that the same transmission could have performed satisfactorily were it connected to the engine through the right coupling for the job. As for the output coupling, the article's aim was to bring forth the problems associated with the transmittal of pulsating torque in drivelines of substantial polar inertias. The principles described are applicable to output couplings too. Mr. Calistrat rightly pointed out the need to apply these considerations to the other end of the transmission.

I have to disagree with Mr. Calistrat's statement that the selection of the coupling with "the lowest torsional spring rate" contradicts economics. In my experience, there is little, if any, price difference among couplings of basically the same size and configuration, but different spring rate. Sometimes, it is just a matter of specifying a different grade of the resilient material in the coupling, and the maker may be offering a wide range of these with no price difference.

In response to the third paragraph, the word equipment was used to refer to any kind of driven machinery. In the case described in the article where the coupling flexibility was to protect the transmission, the coupling would be most effective if installed on the output from the engine (input to the transmission).

Finally, as a consultant myself, I wholeheartedly agree with Mr. Calistrat's recommendation in the fourth paragraph.

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Guest Editorial

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enabling us to keep in touch with innovations in the design and manufacture of gears and gearing products. The world has become an international market place of ideas as well as goods, and AGMA provides one way to stay in touch with these developments. For example, the AGMA Fall Technical Meeting has grown to an internationally recognized session, both in attendance and sources of quality technical papers. This year, over a third of the abstracts received for presentation at this year's meeting came from sources outside of the U.S. and Canada.

As good as this past approach has been, there still is a strong need for people in the gear industry to have a place to SEE the latest innovations for both design and manufacturing. Existing trade shows do not offer an answer—exhibitors in larger shows have to market to the broadest group of attendees, and that just doesn't focus on gear people. The only answer seemed to be for AGMA to organize GEAR EXPO.

October 4-7 in Cincinnati provides a new option for the industry. With both the traditional AGMA Fall Technical Meeting and the new GEAR EXPO being held at that time, the industry will have a genuine opportunity to see what it can do to make itself more competitive. And here, there may be a surprise.