THE KISH HUNTING METHOD

I read with surprise the letter from Mr. Mosier concerning the ancient Greek Euclidean origin of the "Kish method." I would like to assure your readers that I never met Mr. Euclid. The only thing I know about him is that he had something to do with geometry. The situation sort of reminds me of a patent application I once submitted that was rejected because an identical device was patented for an elevator in 1870. There really is nothing new in the world of gearing, is there?

Jules Kish, Sikorsky Aircraft

MORE ON GEAR SHAVING BASICS

I read with interest John Dugas' article (Nov/Dec, 1997) about gear shaving basics in your last issue. I would have expected a more convincing presentation in favor of the shaving process, even though it has been in vogue for over 60 years. **Shaving is still the most effective and economical way to finish a rough-cut gear.**

Consider the following: A few years ago, Ford's German operations tried to resolve the gear noise problem with a high tech solution—finish grinding or honing all gears in the manual gear box. It's interesting to note that Ford's newly built Brazilian transmission plant does not use the honing/finish grind operation to the large extent they did in Germany. Perhaps Ford realized that the reduction in gear noise obtained by hard finishing the gears was not significant enough to justify the additional cost incurred by this very expensive operation. (As the Italian proverb has it, the play was not worth the candle.)

Lately, some leading Japanese and German companies, lured by lower production costs, have set up manufacturing facilities in the U.S. Very often gear prints provided by German companies do specify the production gear process. Nevertheless, with the new generation of CNC shaving cutter resharpening machines and CNC shaving machines, the quality of shaved gears has definitely increased one or two class points, enlarging the shaving operation field. Perhaps an adequate hobbing/shaping operation, followed by a good shaving operation with proper workholding fixtures would be enough to produce those gears that, if made in Germany, probably would have been ground.

In the last analysis, the grinding/honing process should not be regarded as a panacea for all gear problems. Correcting heat treat distortions by finish grinding is very costly.

To conclude, I would urge gear manufacturers to fully evaluate the process they will use when producing gears in a global market economy. The bottom line is being able to evaluate the manufacturing cost for the quality required. This is the determining factor in which manufacturer ultimately gets the order.

It will be interesting to see in ten years whether the majority of gears will be finished by shaving or by hard finishing.

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