Gears Around the World (Wide Web)

Gear Technology's bimonthly aberration — gear trivia, humor, weirdness and oddments for the edification and amusement of our readers. Contributions are welcome.

More Gears in Cyberspace

Dial in to the web site of Chicago's Museum of Science and Industry for an online version of the museum's *Gears from the Century of Progress* exhibit.

At *www.msichicago.org/exhibit/gear* you can see pictures of geared devices with brief descriptions of their functions—such as changing rotary motion to straight-line motion. They even have animated movies of the gears in action.

The gears were originally part of the Borg Warner exhibit at the Century of Progress Exposition held in Chicago in 1933. **BONUS:** Those of you going to IMTS can visit the real-world exhibit in Chicago, where you can turn cranks to see the mechanisms in action.

Momma, Don't Let Your Babies Grow Up to Be Gear Engineers

How do you teach gear ratios to a four-year-old? Let him play with his Legos®. Believe it or not, Lego makes worm gears, racks, spur gears, crown gears, bevel gears and two kinds of differential housings.

The spur gears come in easy-to-work-with configurations of 8, 16, 24

and 40 teeth. And very important to junior transmission designers, Lego parts are manufactured to a tolerance of +/- .005 mm.

Addendum discovered Lego gears through Richard Wright, an instructor at the PCS Centers for Enriched Learning in Boise, Idaho. PCS emphasizes hands-on discovery and real-world application of knowledge for the 450 students aged 4–18 enrolled in its four schools in Idaho, Washington and California.

Legos are one of the fundamental teaching tools (building blocks, if you will) used at PCS. "The reason we use Legos is that they're very intuitive, and they're very non-threatening," Wright says. "I can literally take a four-year-old and have him build a gear train."

Wright has an internet site devoted exclusively to Lego gears *(www.pcsedu.com/pcs/centers/boise/lego/gears.htm)*. The site has descriptions of gear types, pictures of Lego gears and even a gear ratio quiz.

Really Big Gears . . . We Have A Winner

Last issue we asked you to help us find the world's biggest gears. And the biggest of the big gear stories comes from...(drum roll, please)...**Russell G. Shomperlen**, technical supervisor for draglines at Bucyrus-Erie, the company that manufactured a **75-foot gear** in 1966.

The 168,000-lb. gear is part of the Bucyrus-Erie Dragline 4250W, the largest machine of its kind ever built. The dragline is installed at Central Ohio Coal's Muskingum Mine in Cumberland, OH.

The gear is part of the third and final reduction, also known as the "swing rack," in the dragline. It has 336 teeth, a diametral pitch of 0.375 and an outside diameter of 75 feet. It meshes with 10 pinions that together deliver a torque of 1.4 billion inch-pounds. The gear was manufactured and shipped in 24 segments, each weighing about 7,000 lbs.

Can anyone top that?

See Addendum online at *www.geartechnology.com*

The Addendometer: If you've read this far on the page and enjoyed it, please **circle 225.**