editor's note

EARLY EACH YEAR, AISC VICE PRESIDENT AND CHIEF STRUCTURAL ENGINEER CHARLIE CARTER GETS TOGETHER WITH MY BOYS TO HELP THEM WITH THEIR PINEWOOD DERBY CARS. Charlie's not only an Eagle Scout but my wife is a lot more confident that my kids will keep all of their fingers when Charlie helps them with power tools than when I do.

My middle child, Joshua, was mostly interested in style points and designed a licorice-colored futuristic car with plenty of angles and curves. On the other hand, my ultra-competitive youngest son, Jason, was only interested in speed and designed his car as a wedge under the theory that the shape would reduce air friction. However, one engineer at AISC suggested that for a non-powered vehicle, it was just as important to reduce drag created by downward pressure on the wheels and instead suggested more of a wing design—both reducing air friction and downward pressure. Jason loved the theory and his car was appropriately redesigned.

In practice, it turned out that neither model much mattered. One car averaged 2.310 seconds over four time trials; the other 2.315 (yes, at our Cub Scout den we use a laser-based system hooked up to a computer to clock the time trials).

The problem was that we understood the theory behind the wing but couldn't really execute it. It definitely wouldn't have been in the spirit of the competition (where most of the work is done by the kids) to have used a computer and a wind-tunnel testing program to develop an optimal shape and then to successfully translate that shape to wood (not to mention the practical issue of having an eight-year-old do the cutting and sanding of something that precise).

And, as one competitor showed us, it turns out there is a much simpler way to accomplish the same thing. Rather than accomplish the drag reduction by aerodynamics, turn to basic physics. The trick is to reduce the number of wheels in contact with the ground. The solution is to literally raise the axle on one rear wheel slightly (you want to do the rear wheel rather than a front wheel or the car won't track correctly) and at the same time shift the car's weight to the other side (all of the cars use non-lead weights to meet the 5 oz. maximum so it's relatively easy to side-load the car).

All of us face problems each day—sometimes they're design issues, sometimes construction. And we all benefit from learning new ways to look at and to solve these problems. AISC offers a wide range of solutions to help. There's an incredible array of information available on our website, and if you don't quickly find what you're looking for, the answer is almost always one call (866.ask.aisc) or email (**solutions@aisc.org**) away—though the AISC Steel Solutions Center tends to be much more proficient with questions about the steel *Specification* than questions about wood cars.

Continuing education is a great opportunity to expand your knowledge. Again, AISC has plenty of opportunities available, ranging from online presentations to webinars to live seminars. For example, for no charge you can watch a program on "Ethics and Accountability" or take a course on "Specifying Camber: Rules of Thumb for Designers." (If you want PDHs, there is a $25 fee for AISC members/$50 fee for non-members). More than 30 programs are offered as "boxed lunch" continuing education on the AISC website—for a complete list of these programs, as well as our webinars, seminars, and podcasts, visit **www.aisc.org/elearning**.

And, of course, no mention of AISC educational programs would be complete without a mention of NASCC: The Steel Conference. Scheduled for May 11–14 in Pittsburgh (**www.aisc.org/nascc**), it's an opportunity for designers, fabricators, detailers, erectors, and others involved in the design and construction of steel buildings to attend more than 90 seminars, see the latest product offerings from more than 200 exhibitors, and discuss issues with your peers. (For a free sampling of sessions from the past two years, visit **www.aisc.org/2009nascconline** and **www.aisc.org/2010nascconline**.)

I'll be waiting for you in AISC's booth (#1243) to hear your ideas about pinewood derby cars.

Scott Melnick

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