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Student engineers in real-world tests



By WILLIE VOGT

STUDENT competitions that allow participants to take what they've learned and apply it to real-world challenges offer great experience. That's the aim of the 1/4 Scale Tractor Design Competition. I had the privilege of taking part in the 2008 event, and I thought many of our readers would find what I learned of interest.

Whenever you're part of an event with a lot of young people, you can get a nice, optimistic feeling about the future. These college students worked hard on their projects, creating new products from (at some times) scrap steel and a lot of sweat. Given that energy and their knowledge, you don't feel as worried about them taking the reins in the future.

My role at the event was threefold:

First, I did some announcing during the tractor-pulling event, talking about teams and calling the distance. (I was not alone in the booth and did have help announcing.)

Second, I was on a team that reviewed oral presentations for about half of the par-

Key Points

- Design competition challenges students in new ways.
- Applying book learning to real-world tasks is educational.
- Schools bring innovations to tractor designs.

ticipants. The goal there was to hear mock marketing presentations from teams about their product, its target buyer, and cost and design. My role was to act as the marketing person on the panel (I am not an engineer) and give that kind of feedback.

And finally, I got to act as master of ceremonies at the awards banquet, where I read a script prepared by the American Society of Agricultural and Biological Engineers (with a few well-placed asides, I might

ON THE PULL: The University of Saskatchewan tractor "put the hammer down" on its pull and immediately raised the front end. These student-built machines are put to hard work.

add) announcing the winners of many categories.

I have attended this event in the past and even emceed the dinner twice. The competition has grown over its 11 years. It offers students a tough engineering challenge. You see, not only do they have to design a tractor, but they also have to build it and bring it to pull.

Growing over the years

A few years ago, ASABE turned up the heat by allowing multiple engine use. All engines have to be Briggs & Stratton Vanguard V-twin 16-horsepower



units; however, teams can run as many engines as they have room to carry (within weight guidelines). This adds a unique challenge to driveline development, especially when you put that experimental driveline under a pulling load.

Each team's approach to the competition was unique. From Iowa State's quick coupler system in the driveline to Arizona's innovative self-leveling hitch design, innovations were brought forward. These engineers did their homework.

From my standpoint, watching from inside and out, the dedication of the sponsors and the volunteers that work this event was evident. Several are now professionals at major ag companies who at one time were team members who went through this very process. They know the work involved. And they understand what it's like to be under the gun on deadline.

If you are in the Peoria, Ill., area May 28-31, you might want to stop by Expo Gardens to see what all the fuss is about.

Firms create RFID for trucks, equipment

A HIGH-TECH company based in California is looking at the ag market with an eye toward some interesting innovations. Intellex and Minds Inc. have partnered to offer the industry a radio frequency identification enabled system for tracking equipment.

While the U.S. agriculture industry is already working to develop RFID technology for animal identification, this system would allow a larger harvest operation to track truck

and equipment location at one of the busiest times of the year. A single RFID system goes on the harvester, perhaps for specialty crops. Then, RFID tags no bigger than an index card go on individual trucks, says Sam Liu, marketing director for Intellex.

Whenever the truck is near the harvester, the system reads that truck's location. The "black box" on the harvester is cell phone enabled and transmits data to a central system. Using the Web, the farmer can know

at any given time where specific equipment is and how that equipment is performing.

Initially, a system like this will have more application in high-value crops where a lot of trucks are moving through the system quickly and keeping track of their location is critical. Later, however, as row-crop farmers in other parts of the country see the value of such technology, it could be more widely used.

Price to install the main RFID system on a harvester is about

\$5,000, and that includes the GPS unit required to make the system work. That does not include the tags for individual trucks, but includes the service cost for software use.

The makers say payback for the system could come as quickly as the first year in the form of higher efficiency and productivity. We'll let you know as this system moves into the market.

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