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SCIENCE

Row, Row, Row Your (Concrete) Boat

By Robert Johnson
Staff Reporter of The Wall Street Journal

HUNTSVILLE, Ala.— The University of Alabama team here is odds-on favorite for this weekend's National Concrete Canoe Competition. So why is its canoe entry being kept mysteriously draped under black blankets?

It's all part of the strategy to extend the university's winning streak in this bizarre collegiate contest: a race with canoes made from concrete. The competition, the 12th to be sponsored by the American Society of Civil Engineers, will be held tomorrow on Florida's Banana River near Melbourne. Students from 25 engineering schools will try to float and paddle their concrete boats, including City College of New York's City Slicker and Drexel University's Broad Street Bully.

But the one to watch is under wraps—the Canew, or Competitively Aggressive Novelly Engineered Watercraft, made by engineering students at the University of Alabama's campus here. UAH concrete-canoe teams have won the event in four of the past six years, and the school is defending 1998 champion. "The University of Alabama in Huntsville is something of a national dynasty," says Natalie Soulier Webster, spokeswoman for the Washington-based civil-engineer society.

Keeping the canoe under cover is part of Alabama's "psych-out" strategy, says team member Andre Danson. It's already nurtured a rumor (untrue) that the school's entry was built with the help of scientists from nearby NASA laboratories.

"The other schools are going to be shocked when they see this paint job," says Chloe Raum, a graduate engineering student. Like most of the Alabama team, she has worked more than 200 hours to design and construct the entry. It's no easy task, what with concrete usually used to build objects that are decidedly landlubbers and virtually immovable.

UAH has capitalized on its record. "Student interest in civil engineering is way up," crows John Gilbert, an engineering professor and coach of the team; UAH enrollment in the field, currently 110, has risen more than 13-fold since its low in 1985.

And the victories have helped with big employers at recruiting time. Says Robert Prieto, chairman of Parsons Brinckerhoff Inc., a large civil-engineering firm in New York and a sponsor of UAH's racing team, "We like being associated with a winner."

The competition is attracting attention from America's Olympic canoe-racing authorities. Mike Montgomery, the U.S.A. canoe/kayak group's events manager, says he's impressed with the nine-mile-an-hour speeds—over a 200-meter sprint course—in recent years. "They're sneaking up on us," he says.

That's the kind of respect the ASCE craved when it started the races in 1988. Civil engineers, who specialize in building bridges and roads, aren't usually associated with sexy, high-tech work. Says Mike Shydlowski, chief executive officer of Master Builders Inc., a Cleveland building-materials supplier and race sponsor, "I think the public perceives that any engineers who can create a racing boat out of concrete must be miracle workers."

The zippy canoes result from innovative concrete mixtures and efficient hull design. UAH is favored this year because

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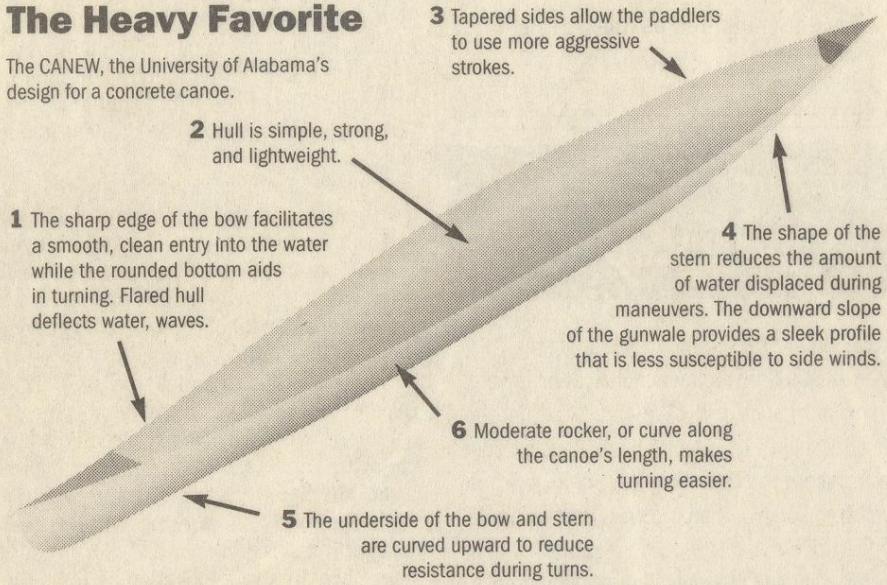
The Heavy Favorite

The CANEW, the University of Alabama's design for a concrete canoe.



In Collegiate Contest, Teams Race Canoes Made With Concrete

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its entry is the lightest—a sleek 75-pounder. The U.S. Military Academy's Odyssey weighs in at 180 pounds.

The canoes must contain 75% cement. Concrete is made by mixing an aggregate material, usually sand or gravel, with cement and water, which causes the cement to bind the mass. Most teams choose a light concrete mix made of things such as tiny balloons, microscopic glass beads or hollow ceramic. The trick: to create a concrete mix less dense—lighter—than water.

Of the 250 vessels entered in regional qualifying rounds, many sink before the races—in flotation tests before students are allowed to paddle anywhere. Under the tests, a canoe is deliberately submerged, and must pop to the surface by itself.

Perhaps the strangest sinking in recent years was that of the University of Kansas's canoe in the 1995 race. Like the Titanic, it "broke right in the middle and each half went down separately while the two team members kept paddling away their sections," says Ms. Webster.

So how did UAH get so good at this, anyway?

For one thing, Dr. Gilbert decided to build UAH's tiny civil-engineering program almost around the canoe races. The program didn't even have full academic accreditation when he arrived in 1985, but he pushed for upgrades in the curriculum that achieved the higher standards by 1988. By 1992, the school came in second nationally, and enrollment was up to 50.

The next year, UAH won the first of its four concrete-canoe titles; civil-engineering enrollment never looked back.

And Dr. Gilbert may have a surprise ringer this year. He confides that in this year's practice runs, two of the women team members have logged faster times than male counterparts. "There's an engineering answer to why that is," he says, "and I still haven't figured it out, but the other schools are going to be in shock."