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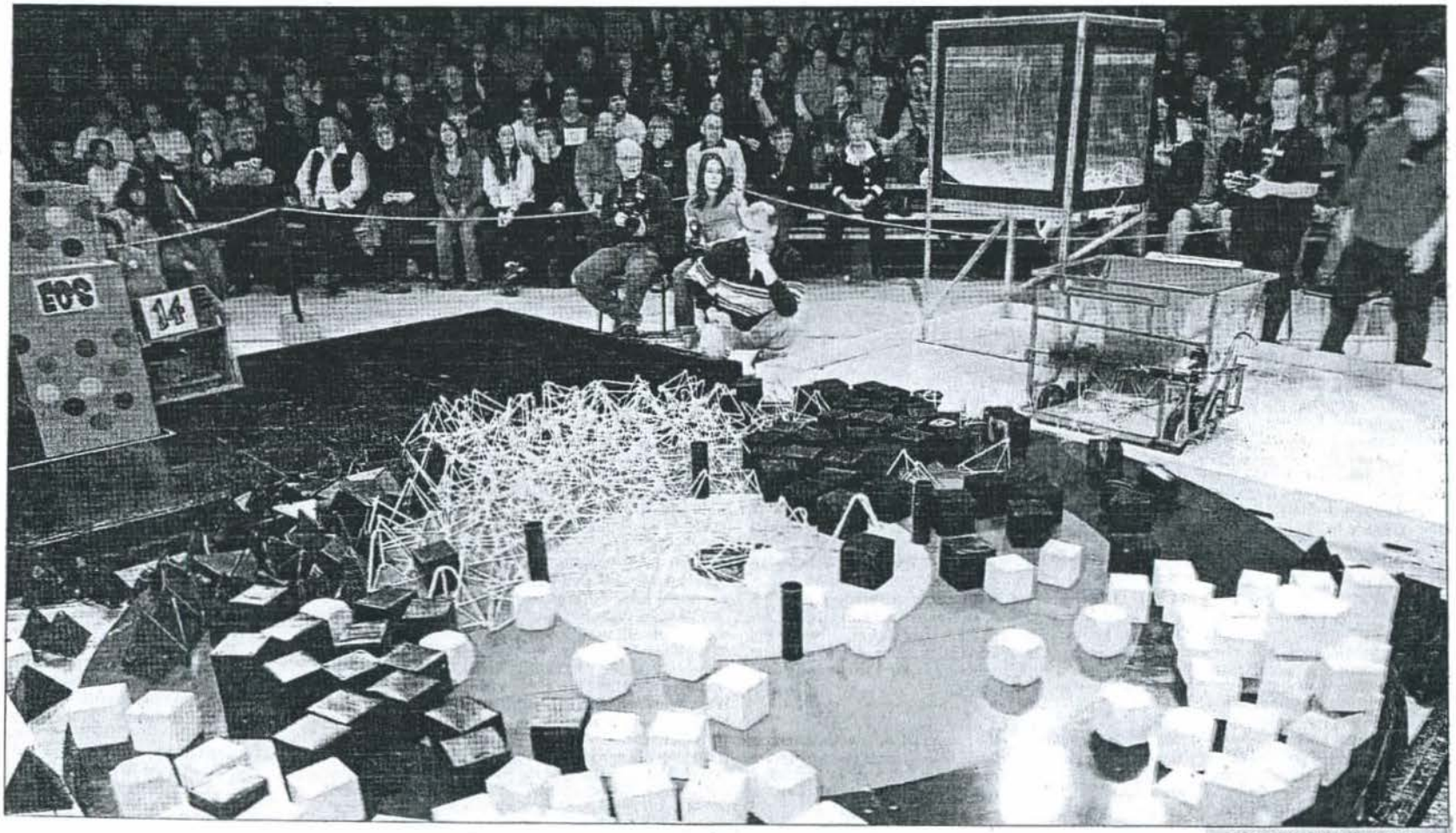


PHOTOS: DAVE SIDAWAY THE GAZETTE
This was the scene at John Rennie High School last weekend. A large crowd cheered as students used robots they designed and built to land projectiles onto a moving target.

The science of competition

In addition to their robot, teams are judged on a five-minute video, 12-page journal, a kiosk, Web site and team spirit, making it a multidisciplinary learning experience

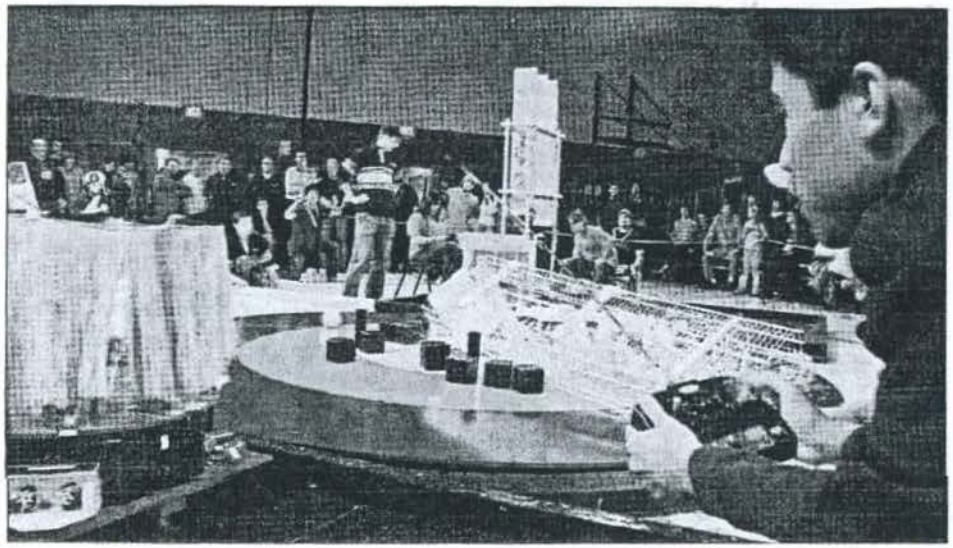
RENÉ BRUEMMER
THE GAZETTE

Those who think of the world of robotics as the domain of bespectacled geeks huddled in solitary nerd-dom weren't at the CRC Robotics Challenge at John Rennie High School in Pointe Claire this weekend.

The raging hormones of more than 600 teenagers from 19 Montreal-area high schools and two CEGEPs were unleashed in full screaming force as teams engaged in scientific combat.

In a darkened gym lit by red and yellow spotlights and rocked by an AC/DC-blasting sound system sucking so much juice the host school had to install an extra generator and electrical panel, remote-controlled robots spun, shot and dumped projectiles into a spinning bull's-eye target in a quest to score points.

On the sidelines, spectators cheered from bleachers capable of holding 800 that were filled to overflowing at times.



Andrew Santos is at the controls of LaSalle Community Comprehensive High School's entry.

It looked like a U2 concert. It looked like a monster-truck rally. It did not look like a science lab.

"It's the greatest thing you can do," said Marianopolis team member and aspiring mechanical engineer Joe Verdino. "I had a blast last year (when he competed with his Rosemere High School team). There's no way I would miss it."

All this, and educational, too.

Now in it's fourth year, the CRC Robotics Challenge is the brainchild of four science teachers from Selwyn House and Collège Laval.

They set up the first challenge in 2002, attended by seven schools. It has since tripled in size and, in a nod to its success, the teachers were awarded a $70,000 government grant this year to ensure it continues.

Students are given a brief course in mechanics and engineering and provided with motors (12-volt Makita cordless electric drills), a motherboard to control the mechanics and a remote control handset. Teams must pay $2,000 each to join, paid for by their schools, parents and companies.

Then they're told the objective – it changes every year – and given two months to design the best robot for the job. Teachers and parents can supervise, but can't touch or counsel.

"Many of the benefits are nontangible," said Selwyn House physics teacher and co-founder Tom Downey. "It's entirely student governed and student run. Normally, they have to sit all year and listen to us. Now, they get to direct."

Turns out they can be their own toughest bosses. Some members of Rosemere's 65-member team spent weeks working from 3 to 9 p.m. after school, and 12-hour days on weekends. Teachers had trouble sending them home.

"It's a lot of fun and it's a great learning experience," said 16-year-old Grade 10 robot designer Roger Boudreau, who wants a job working on robots used to build cars. He spent more than 200 hours welding and designing Rosemere's robot with his teammates, which won first-place for best design. "And I'll be able to use what I learned in my future career."

In addition to robot design and scoring the most points, teams are judged on the quality of a five-minute video, 12-page journal, information kiosk and a Web site they must produce, as well as team spirit.

The myriad elements open it up to students interested in different disciplines like writing, film, computers and art, and allow educators to implement the government's reform concept of multidisciplinary learning. Teams average 20 students each.

"If you want to talk reform – that's reform," said Rosemere math and sciences teacher Hovig Halebi. "Just look at it: the kids are learning, they're having fun. It's positive stress."

Judging from the Marianopolis team, made up largely of students who participated with their high schools in the past, it's a passion that endures.

Newbies can fare well, too, as evidenced by the strong showing by the all-girls Miss Edgar's and Miss Cramp's team, which scored high despite entering for the first time.

"It's a rivalry, and it's a fun way to beat the boys," said 15-year-old Grade 10 student Martha Chertkow.

Sacred Hearts' all-girls team finished third overall, proving engineering isn't just for boys.

And sometimes, spirit can overcome experience. Rosemere's team took first-place overall, beating out the three-man team fielded by CEGEP St. Laurent's mechanical engineering department, which was sponsored by Bombardier.

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The challenge:

The objective was to land as many projectiles as possible onto a rotating bull's-eye approximately three metres wide. Points were scored for every object that landed in the target. Projectiles that landed closer to the middle scored extra points.

Here are a few of the 21 designs:

Rosemere High School

A 33-kilogram welded metal base with four metal "flingers" tossed dozens of round wooden projectiles into the target area. One of the few teams to use a throwing technique as opposed to dumping, so that their projectiles could clear those of other teams that might be blocking the way. A marvel of metal-working and team sportsmanship.

The entry won first place for design and the team won first place overall.

CEGEP St. Laurent

Designed by members of the mechanical engineering department, the robot was supposed to jettison wooden blocks between two rubber wheels spinning at 5,000 revolutions per minute. Using several aluminum components machined by the students on high-tech metal-cutting machines, the robot suffered technical difficulties and fared poorly.

Lauren Hill Academy

The team used power in numbers, loading its dumper with hundreds of pyramid-shaped projectiles made from lightweight plastic coat hangers that were launched from their Plexiglas and copper-pipe dumper by a broom-like whisk rotating at high speeds.

The design landed the most projectiles in the target zone, winning the game after several heats.

Selwyn House

Used a large metal cage that looked like a six-foot dish rack, filled with metal coat hangers that were dumped, along with the entire cage, into the target zone. Ungainly and unattractive, but somewhat effective.